Weston & Sampson

westonandsampson.com

5 Centennial Drive
Peabody, MA 01960 (HQ)
tel: 978.532.1900

REPORT

December 2018

TOWN OF
Dighton
MASSACHUSETTS

Dighton Sanitary Landfill

Monitoring Report

Weston & Sampson

5 Centennial Drive, Peabody, MA 01960 (HQ)
Tel: 978.532.1900

December 13, 2018

Mr. Mark Dakers, Section Chief
Massachusetts Department of Environmental Protection
Southeast Region Office
Division of Solid Waste Management
20 Riverside Drive
Lakeville, Massachusetts 02347

Re: Fall 2018 Annual Monitoring Report
Dighton Sanitary Landfill

Dear Mr. Dakers:

On behalf of the Town of Dighton, Weston & Sampson has prepared this letter report summarizing the Fall 2018 annual monitoring results for the Dighton Sanitary Landfill (landfill) located on Tremont Street in Dighton, Massachusetts. The purpose of the monitoring is to periodically monitor landfill groundwater and surface water quality and assess the potential for off-site migration of landfill gas as required by the most recent amendment to the Solid Waste Regulations dated February 2014.

A locus map (Figure 1) shows the landfill location, and the site plan (Figure 2) shows the groundwater, surface water, and soil gas locations.

In August 2010, the Massachusetts Department of Environmental Protection (MassDEP) approved an application for Minor Modifications to the existing Post Closure Monitoring and Maintenance Plan (PCMMP) for the landfill. The modifications to the PCMMP satisfy the requirements established in 310 CMR 19.132. The revised PCMMP includes a reduction in the collection and analysis of groundwater samples for indicator and inorganic parameters and dissolved metals. According to the revised PCMMP, groundwater samples will be collected on an annual basis from MW-1, MW-2, MW-3, MW-5S, MW-5D, MW-6S, MW-6D, MW-7S and MW-7D for analysis of volatile organic compounds (VOCs) including 1,4-dioxane, indicator and inorganic parameters, and dissolved metals. In addition, groundwater samples will be collected on an annual basis from monitoring wells MW-8S and MW-8D for VOC analysis including 1,4-dioxane. Surface water samples are to be collected on an annual basis from a new sampling location (PZ-1) in the unnamed stream (see Figure 2). The new surface water sampling location (PZ-1) will be sampled and analyzed for inorganic and organic indicator parameters, metals, and VOCs including 1,4-dioxane. The PCMMP also indicates that soil gas monitoring will be conducted on a semiannual basis.

METHODS

Groundwater and Surface Water

On October 16, 2018, Weston & Sampson collected groundwater samples from ten (10) groundwater monitoring wells (MW-1, MW-3, MW-5S, MW-5D, MW-6S, MW-6D, MW-7S, MW-7D, MW-8S, and MW-8D) and one (1) surface water sample from location PZ-1. MW-2 could not be located and is assumed destroyed. For quality assurance purposes, a duplicate groundwater sample (DUP-1) was collected at well MW-7D and a laboratory-supplied trip blank accompanied all VOC samples. Weston & Sampson also measured depth to groundwater at the monitoring well locations. Groundwater depth and elevation readings are presented in Table 1.

Prior to groundwater sampling, Weston & Sampson calculated the standing volume of water in each well using the depth to water and total well depth measurements. Five standing volumes of water were purged from each well or the wells were purged to dryness and allowed to recharge prior to sample collection. We collected samples using dedicated disposable bailers or the Waterra Hydrolift® inertial pump system with dedicated polyethylene tubing, as appropriate. Weston & Sampson collected the surface water sample using a dedicated disposable bailer. If any non-dedicated sampling equipment was used, Weston & Sampson decontaminated that non-dedicated equipment between wells using an Alconox wash followed by a rinse using deionized water.

Weston & Sampson measured dissolved oxygen, pH, water temperature, and specific conductivity in the field using water quality meters. Weston & Sampson submitted water samples to TestAmerica Laboratories, Inc. (TAL), a Massachusetts-certified laboratory, for analysis of the following parameters: metals (RCRA 8 plus calcium, copper, iron, manganese, sodium, and zinc), alkalinity, chemical oxygen demand (COD), chloride, total cyanide, nitrate, sulfate, total dissolved solids (TDS), volatile organic compounds (VOCs) by EPA Method 8260C including Tentatively Identified Compounds (TICs) having unknown peaks greater than five times the background intensity, and low-level 1,4-dioxane by EPA Method 522. Groundwater samples were filtered in the field using a 0.45-micron disposable filter and analyzed for dissolved metals. The Surface water sample was not field-filtered and was analyzed for total metals. The surface water sample was additionally analyzed for hardness. All samples were stored on ice after collection and during transport to the laboratory. All samples were handled and relinquished using standard quality assurance and chain-of-custody procedures.

Landfill Gas Monitoring

On October 16, 2018, Weston & Sampson performed soil gas monitoring at four (4) soil gas wells (GM-1, GM-2, GM-3, and GM-4). Weston & Sampson also monitored the inside of the Garage Stand, Attendance Shed, and Animal Shelter buildings.

A Landtec GEM-5000 was used to measure methane (CH_4) and oxygen (O_2) concentrations in percentages by volume (%) and hydrogen sulfide (H_2S) in parts per million (ppm). If any methane concentrations were present, they were converted to percent lower explosive limit (% LEL). An Ion Science Tiger model photoionization detector (PID) was used to measure non-methane volatile organic compounds (NMVOCs) in ppm. Both instruments were calibrated prior to monitoring.

The soil gas wells were sampled under initial conditions and steady state conditions. Each well has a stopcock valve inserted into the well cap. The initial condition concentrations were determined by sampling each well immediately after opening the well valve. This is representative of landfill gas parameters that might accumulate in a confined space over time. After the initial conditions were recorded, each well was purged for two minutes using a GilAir 5 air pump at a rate of five liters per minute. After purging, gas concentrations were measured a second time. These concentrations represent the steady state subsurface soil gas concentration. The indoor air locations were monitored under initial conditions only.

COMPARABLE STANDARDS

Groundwater analytical results were compared to Massachusetts Drinking Water Standards, published by the MassDEP in spring 2017. These standards include Massachusetts Maximum Contaminant Level (MMCL), Secondary Maximum Contaminant Level (SMCL), and Office of Research and Standards Guideline (ORSG) concentrations/ranges. Although there are no monitoring locations outside the landfill compliance boundary, the results were also compared to the Massachusetts Contingency Plan (MCP, 310 CMR 40.0000 revised January 2015) Method 1 GW-1 and GW-3 groundwater cleanup standards as a reference for the management of risk. An Area Receptors Map is provided in Figure 3.

Surface water results were compared to Massachusetts Surface Water Standards (MSWS) (314 CMR 4.00). This regulation incorporates, by reference, additional surface water standards including the National Recommended Water Quality Criteria (NRWQC) published by the EPA in 2009. For criteria with no MSWS or NRWQC listing, results were compared to the Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota: 1996 Revision (ES/ER/TM-96/R2) (Toxicological Benchmarks).

Soil gas results were compared to the reporting threshold requirements of 310 CMR 19.132(4)(h), which require notification to MassDEP within 24 hours if methane in the soil gas exceeds 25% LEL at the landfill property boundary.

RESULTS AND DISCUSSION

Groundwater Flow

The October 2018 groundwater elevation data presented in Table 1 indicates that shallow groundwater flows south-southeast towards the unnamed stream (refer to Figure 2).

Groundwater Quality/Trend Analysis/QAQC

Groundwater Quality

Groundwater analytical results are summarized in Table 2. The results indicate that the following parameters were detected at concentrations above applicable Massachusetts Drinking Water Standards.

MMCL:

- Dissolved arsenic was detected at concentrations above the MMCL in monitoring wells MW-5D, MW-7S, MW-7D and DUP-1 at concentrations of 0.038 milligrams per liter (mg/L), 0.089 mg/L, 0.015 mg/L and 0.019 mg/L, respectively.

- Dissolved lead was detected at concentrations above the MMCL in monitoring wells MW-3 and MW-7S at concentrations of 0.030 mg/L and 0.043 mg/L, respectively.

- Vinyl chloride was detected at a concentration above the MMCL in MW-5D at a concentration of 3.8 micrograms per liter (μg/L).

Parameters above the MMCL are shown on Figure 2.

SMCL:

- Dissolved iron was detected at concentrations above the SMCL in all wells sampled, with the exception of MW-1, at concentrations ranging from 1.3 mg/L to 58 mg/L.

- Dissolved manganese was detected at concentrations above the SMCL in all wells sampled at concentrations ranging from 0.060 mg/L to 8.0 mg/L.

In addition, groundwater pH was below the lower limit of the SMCL range of 6.5 in all wells sampled, with the exception of MW-1 and MW-8D, at readings ranging from 5.65 to 6.46

ORSG/GW-1:

- Dissolved sodium was detected at concentrations above the ORSG in monitoring wells MW-5D, MW-7S, MW-7D, DUP-1, and MW-8S at concentrations ranging from 28 mg/L to 36 mg/L.

- 1,4 Dioxane was detected at concentrations above the ORSG/GW-1 standard in monitoring wells MW-5D, MW-6S, MW-7S, MW-7D, MW-8S, and MW-8D at concentrations ranging from 1.9 μg/L to 4.5 μg/L.

Two (2) VOCs (chlorobenzene and cis-1,2-dichloroethene) were detected in groundwater wells at concentrations more than an order of magnitude below their applicable standards. Vinyl chloride, which was detected above the

MMCL in MW-5D as discussed above, was also detected in MW-7D and DUP-1 at concentrations below the MMCL.

Tentatively Identified Compounds (TICs) were detected in groundwater samples. One TIC identified as 2-methylpropanal was detected in DUP-1 at an estimated concentration of 3.4 μg/L. Two unknown TICs were detected in MW-8S at estimated concentrations of 4.2 μg/L and 3.5 μg/L.

Trend Analysis
Groundwater analytical results are generally consistent with historic results (refer to Appendix A for historical results) with the following exceptions.

- Dissolved chromium was detected above the laboratory reporting limit (RL) for the first time in MW-3; however, the detected concentration was below the applicable standard.
- Dissolved lead was detected above the laboratory RL for the first time in MW-3 and MW-7S, and the concentrations (0.030 mg/L in MW-3 and 0.043 mg/L in MW-7S) are above the MMCL of 0.015 mg/L. In accordance with the Solid Waste Regulations, re-sampling for dissolved lead at these wells was conducted on December 11, 2018. The results from the December 11, 2018 re-sampling event will be sent via e-mail to MassDEP once Weston & Sampson has received the analytical results from the laboratory.
- Alkalinity was not detected above the lab RLs in MW-6S for the first time.
- TDS was detected at a historically high concentration in MW-6S; however, the detected concentration was below the applicable standard.
- Dissolved iron was detected at a historically high concentration in MW-6S.
- 1,4-Dioxane was detected above the laboratory RL in MW-6S for the first time, and the concentration (1.9 μg/L) is above the ORSG and MCP Method 1 GW-1 standard of 0.3 μg/L. In accordance with the Solid Waste Regulations, re-sampling for 1,4-dioxane at this well was conducted on December 11, 2018. The results from the December 11, 2018 re-sampling event will be sent via e-mail to MassDEP once Weston & Sampson has received the analytical results from the laboratory.
- Dissolved cadmium, chromium, copper and selenium were detected above the laboratory RLs in MW-7S for the first time; however, the detected concentrations were below the applicable standards. The October 2018 round is only the sixth round that dissolved metals have been analyzed at this well. In addition, most of the other metals were detected at historic high concentrations, but the historical data is limited at this well and therefore an accurate trend analysis cannot be conducted.

Quality Assurance/Quality Control (QA/QC)
The October 2018 groundwater sampling and analytical program was performed with adequate QA/QC to support goals for precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS) for laboratory analytical data. The QA/QC program provides an assessment of both field sample collection and handling methods and laboratory analysis method selection and analytical procedures. Field quality control includes measures undertaken during collection or handling of samples in the field (e.g., preparation of chains of custody, inclusion of trip blanks, and collection of field duplicates) to support collection of precise, accurate, and representative data. The analytical laboratory performs several internal quality controls to assess the accuracy, precision, and sensitivity of the sample data. These controls include surrogate spikes, matrix spike/matrix spike duplicates (MS/MSD), laboratory control spike and method blanks. QA/QC procedures as required by the analytical methods were achieved and the samples were received in a condition consistent with those described on the chain-of-custody. According to the laboratory results, the laboratory received all samples at approximately

1.1°C and 1.4°C, and in good condition. The following non-conformance was noted for each of the analytical methods listed below:

Method 8260C (VOCs)
The continuing calibration verification (CCV) associated with batch 480-441604 and 480-441610 recovered outside acceptance criteria, low biased, for chloromethane and vinyl chloride. A low bias means the actual results are potentially higher than the reported results. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples (DUP-1, MW-1, MW-3, MW-5D, MW-7D, MW-5S, MW-6D, MW-6S, MW-7S, MW-8D, MW-8S, PZ-1 and Trip blank) were non-detect for this analyte, the data have been reported and there is no affect on the data usability.

The continuing calibration verification (CCV) associated with batch 480-441610 recovered above the upper control limit for 2-butanone and 2-hexanone for samples MW-5D, MW-5S, MW-6D, MW-6S, MW-7D, MW-7S, MW-8D, MW-8S, PZ-1 and TRIP BLANK , resulting in a high bias on reported results. A high bias means the actual results are potentially lower than the reported results. Since the samples associated with this CCV were non-detects for the affected analytes and the bias is high, the data have been reported and the data usability is not affected.

Method 300 (chloride and sulfate)
Samples DUP-1, MW-3 and MW-1 were diluted due to the nature of the sample matrix, resulting in elevated reporting limits. However, the elevated RLs are below the applicable standards. Therefore, there is no impact on the reported results for these compounds.

Method SM2320B (alkalinity)
Samples DUP-1, MW-3, MW-5D, MW-5S, MW-6D, MW-6S, MW-7D, MW-7S, MW-8D, PZ-1 and MW-1 were received with headspace in the sample container.

Method SM2540C (TDS)
Sample DUP-1 was analyzed outside of analytical holding time due to laboratory error.

Method 9012B (total cyanide)
Re-analysis of samples MW-5D, MW-5S, MW-6D, MW-6S, MW-7D, MW-7S, MW-8D, and MW-8S were performed outside of the analytical holding time due to failure of quality control parameters in the initial analysis.

The results for the duplicate sample (DUP-1) that was collected at WS-7D were generally similar to the results from the initial sample. The Relative Percent Difference (RPD) between the initial sample and the duplicate sample for all parameters ranged from 0% to 25.45%, which is below the EPA recommended criteria of 30% for water. It should be noted that 1,4-dioxane was detected in the original sample but not in the duplicate sample. A trip blank sample was submitted for VOC analysis by Method 8260. No VOCs were detected in the trip blank.

Based on our review of the above non-conformances, the non-attainment of QA/QC performance/acceptance standards did not affect the usability of data for the fall 2018 sampling event, and Weston & Sampson considers all data to be valid.

Surface Water Quality/Trend Analysis

Surface Water Quality
Surface water analytical results for sample PZ-1 are summarized in Table 3. The results indicate that the following parameters were detected above the applicable MSWS standards:

- Total barium was detected above the MSWS at a concentration of 0.012 mg/L.

- Total manganese was detected above the MSWS at a concentration of 0.29 mg/L.

  In addition, surface water pH was below the lower limit of the SMCL range of 6.5.

There were no additional VOCs or TICs detected in sample PZ-1.

Trend Analysis
The fall 2018 sampling event was the sixth event in which surface water was analyzed at the PZ-1 sample location. The fall 2018 results were generally similar to the historic results (refer to Appendix A).

Soil Gas

Soil soil gas monitoring results are presented in Table 4. The results indicate that methane and hydrogen sulfide were not detected in any soil gas sampling locations under initial or steady state conditions. NMVOCs were detected in all soil gas locations under initial conditions at concentrations ranging from 0.1 ppm to 2.0 ppm. NMVOCs were detected in all soil gas locations under steady state conditions at concentrations ranging from 0.1 ppm to 2.8 ppm. The ambient methane, hydrogen sulfide and NMVOC concentrations were recorded at 0.0%, 0.0 ppm, and 0.0 ppm, respectively.

Oxygen was detected at all monitoring locations under initial conditions at concentrations ranging from 20.1% to 20.5%. Oxygen was detected at all monitoring locations under steady state conditions at concentrations ranging from 20.0% to 20.4%. The ambient oxygen concentration was recorded at 20.5%.

RECOMMENDATIONS

Based on a review of data collected to date and the PCMMP, Weston & Sampson recommends that the Town continues to monitor groundwater and surface water on an annual basis and continues to monitor soil gas on an annual basis per the requirements of the revised PCMMP. Also, Weston & Sampson recommends that the Town preform a comprehensive assessment of 1,4-dioxane, an emerging contaminant and potential contaminant of concern, that has been found in the groundwater monitoring wells at the landfill site. The assessment should include downgradient wells and receptors that might exist downgradient of the landfill. The assessment would begin with identifying any private drinking water wells, public supply wells, or irrigation wells located onsite and immediately downgradient of the Site. Weston & Sampson will be in touch with the Town regarding this matter.

If you have any questions or require additional information regarding this matter, please do not hesitate to contact Weston & Sampson.

Sincerely,

WESTON & SAMPSON ENGINEERS, INC.

Duane C. Himes

Duane C. Himes, PE, PLS, TPI
Associate

Loren E. McGrath

Loren E. McGrath
Senior Project Geologist

cc: Mr. Thomas Pires, Chairperson, Board of Health
File

\\Wse03.Local\WSE\Projects\MA_Peabodyoldserver\Dighton\LF Mon FY19 2180521\Reports\GWSW\Fall 2018 Formatted Letter LEM.Docx

LEM

FIGURES

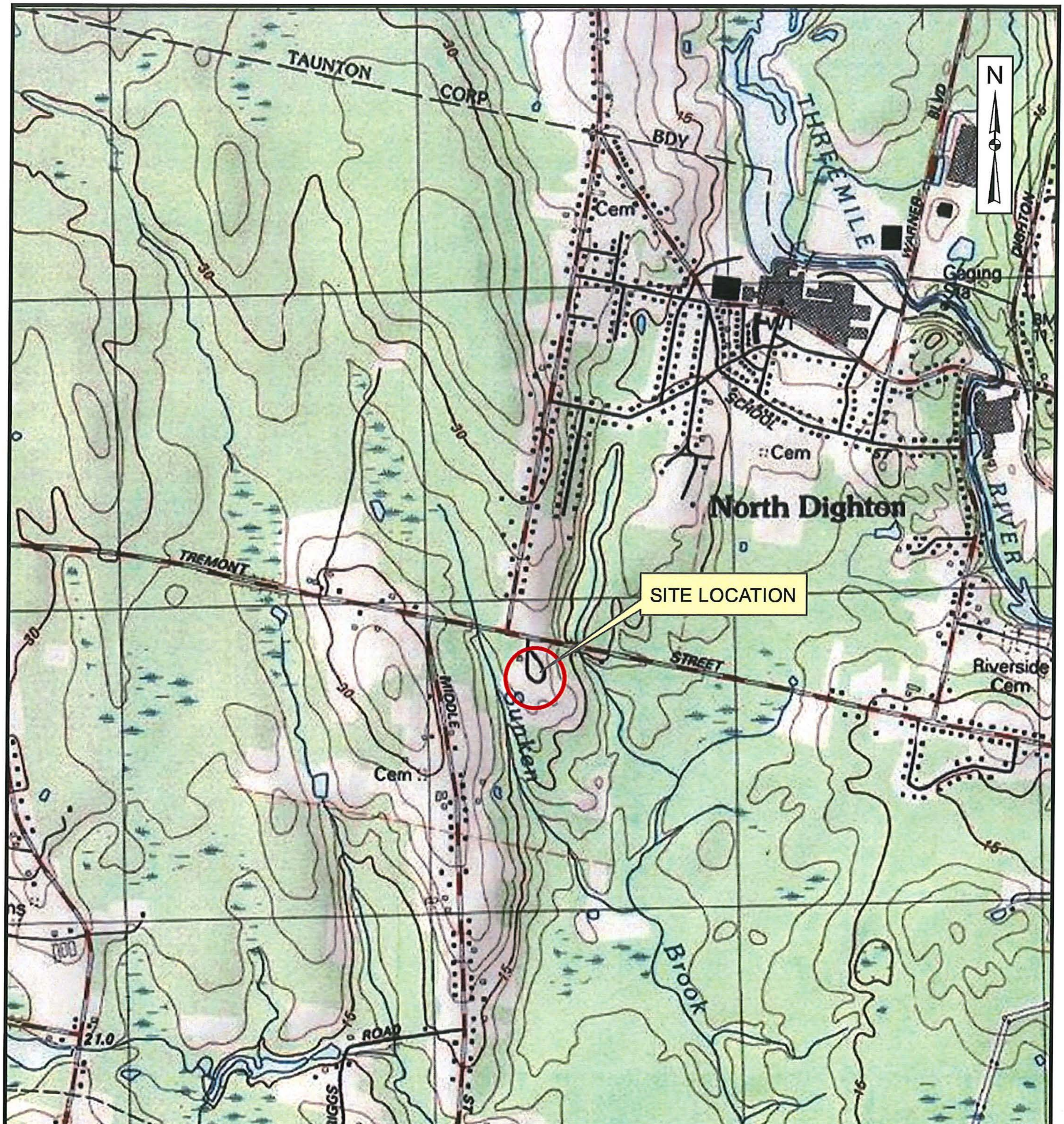


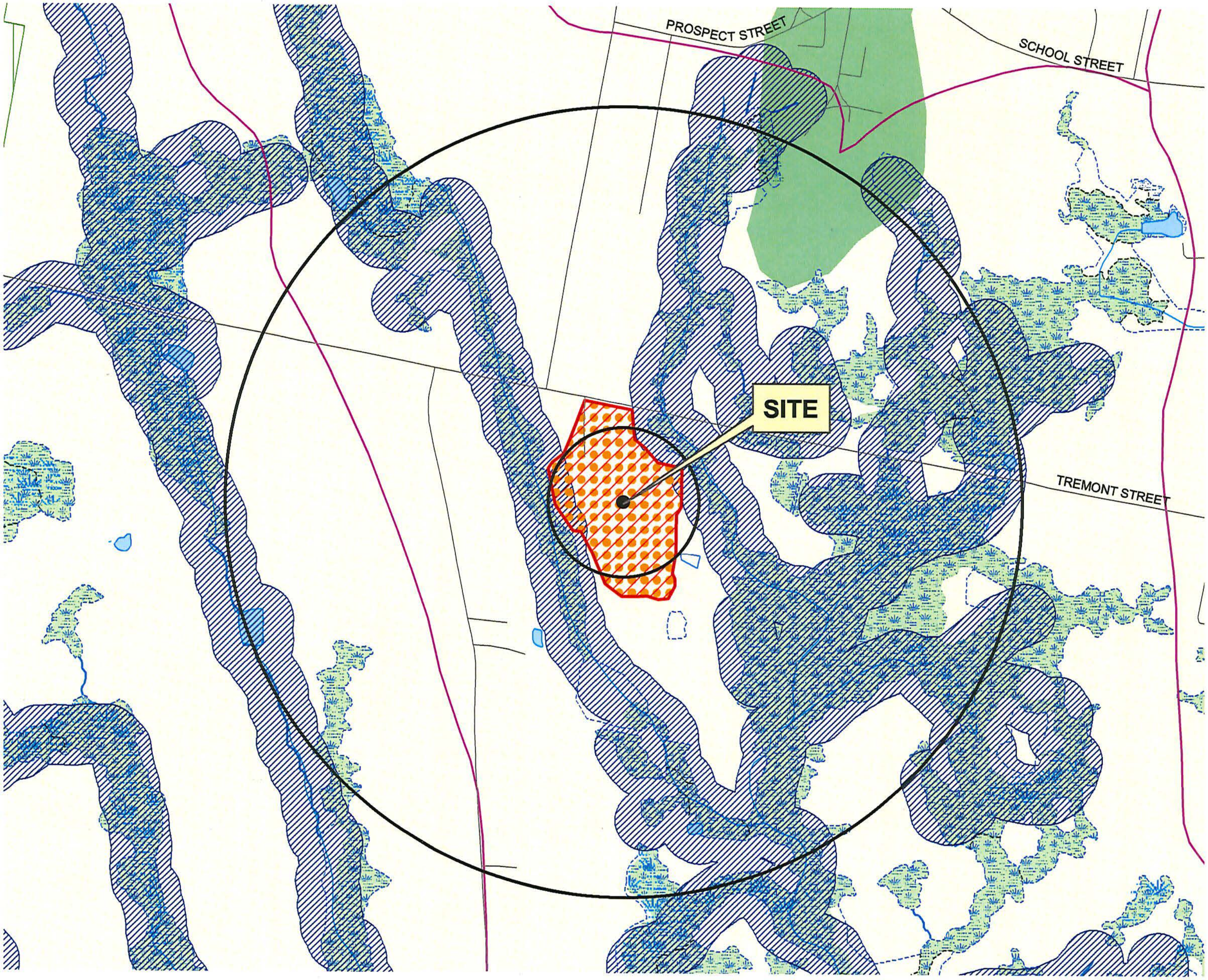
FIGURE 1
TOWN OF DIGHTON, MASSACHUSETTS
DIGHTON SANITARY LANDFILL

LOCUS MAP

0 2,000 4,000 Feet

Weston & Sampson

Path: \\wse03.local\WSE\Projects\MA_PeabodyOldServer\Dighton\LF Mon FY18 2170xxx\CADD\Figure 3 - Area Receptors Map.mxd User: mcgrathl Saved: 1/10/2018 2:20:26 PM Opened: 1/10/2018 2:20:53 PM



Legend

- Town Boundaries
- State Boundary
- Ground Water
- Surface Water
- Non-Community
- NHESP Certified Vernal Pools
- Railroads by Ownership
- Pipeline
- Pipeline Arbitrary Extension
- Powerline
- Powerline Arbitrary Extension
- Ski Lift/Tramway
- Substation
- Landing Strip/Airport
- Highway Exit Locations

All Roads

Road Classification

- Limited Access Highway
- Multi-lane Hwy, not limited access
- Other Numbered Highway
- Major Road, Collector
- Minor Road, Arterial
- Sub-basins
- Major Basins
- Landfills
- Dumping Grounds
- Protected Open Space
- ACECs
- Zone A
- IWPAs
- DEP Approved Zone IIs
- River, Stream, Shoreline
- Water
- Wetland
- Sole Source Aquifers
- NHESP Estimated Habitats of Rare Wildlife
- NHESP Priority Habitats of Rare Species

Non Potential Drinking Water Source Area

- High Yield
- Medium Yield

Aquifers

- High Yield
- Medium Yield

MA Towns (from Survey Points)

- MA Towns (from Survey Points)

N
W E
S

1,000 500 0 1,000 Feet

0.5 0.25 0 Miles

Data Source: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs

NOTE: Radii shown are approximately 500-feet and 1/2-mile from center of site.

FIGURE 3

Area Receptors Map
Dighton Sanitary Landfill
Dighton, Massachusetts

Weston & Sampson

TABLES

Table 2
Groundwater Sampling Results
Dighton Sanitary Landfill
Dighton Massachusetts
October 16, 2018

Parameter	Units	Comparable Standard(1)	Method 1 GW-1(2)	Method 1 GW-3(2)	Sampling Location: MW-1	MW-2	MW-3	MW-5S	MW-5D	MW-6S	MW-6D	MW-7S	MW-7D	DUP-1 (MW-7D)	MW-8S	MW-8D
Field Parameters																
Temperature	degrees C	NS	NS	NS	12.30	--	14.30	14.30	11.70	13.90	10.80	13.00	11.10	-	11.50	10.40
pH	unitless	6.5 - 8.5*	NS	NS	7.88	--	6.30	5.65	6.26	5.91	5.94	6.17	6.24	-	6.46	6.52
Specific Conductivity	mS/cm	NS	NS	NS	0.070	--	0.234	0.056	0.686	0.065	0.216	0.445	0.550	-	0.499	0.240
Dissolved Oxygen	mg/L	NS	NS	NS	7.86	--	6.21	5.49	4.98	6.93	3.22	2.68	3.51	-	2.97	3.38
Inorganics																
Alkalinity as $CaCO_3$	mg/L	NS	NS	NS	<5.0	--	71	13.0	210	<5.0	45	220	220	220	170	57
Chemical Oxygen Demand	mg/L	NS	NS	NS	<10	--	18	<10	14	<10	<10	15	16	13	27	<10
Chloride	mg/L	250*	NS	NS	10	--	27	5.1	66	7.6	13	44	44	45	31	25
Total Cyanide	mg/L	0.2 (3)	0.2	0.03	<0.010	--	<0.010	<0.010	0.014	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrate	mg/L	10	NS	NS	<0.050	--	<0.050	0.082	0.089	<0.050	<0.050	0.076	<0.050	<0.050	<0.050	<0.050
Sulfate	mg/L	250 *	NS	NS	<10	--	20	5.0	18	8.7	43	4.8	12	12	17	23
Total Dissolved Solids	mg/L	500*	NS	NS	57	--	160	38	320	230	160	290	310	300	240	150
Dissolved Metals																
Arsenic	mg/L	0.010	0.01	0.9	<0.0030	--	0.010	0.0083	0.038	0.0049	<0.0030	0.089	0.015	0.019	<0.0030	<0.0010
Barium	mg/L	2	2	50	0.068	--	0.17	0.15	0.028	0.053	0.021	0.260	0.024	0.031	0.10	0.030
Cadmium	mg/L	0.005	0.005	0.004	<0.00050	--	<0.00050	<0.00050	<0.00050	0.0039	<0.00050	0.0011	<0.00050	<0.00050	<0.00050	<0.0020
Calcium	mg/L	NS	NS	NS	1.7	--	33	8.5	52	8.0	25	66	50	62	44	19
Chromium	mg/L	0.1	0.1	0.3	<0.0050	--	0.028	0.016	<0.0050	0.0077	<0.0050	0.030	<0.0050	<0.0050	<0.0050	<0.0040
Copper	mg/L	1.3	NS	NS	<0.0050	--	0.036	0.015	<0.0050	0.013	<0.0050	0.071	<0.0050	<0.0050	<0.0050	<0.010
Iron	mg/L	0.3*	NS	NS	<0.10	--	28	18	21	14	1.3	58	4.5	5.8	12	6.3
Lead	mg/L	0.015	0.015	0.01	<0.0025	--	0.030	0.014	<0.0025	0.011	<0.0025	0.043	<0.0025	<0.0025	<0.0025	<0.0010
Manganese	mg/L	0.05*	NS	NS	0.069	--	0.540	0.51	7.1	0.19	1.1	8.0	4.7	6.0	1.5	0.60
Mercury	mg/L	0.002	0.002	0.02	<0.00020	--	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Selenium	mg/L	0.05	0.05	0.1	<0.0025	--	0.0030	<0.0025	<0.0025	<0.0025	<0.0025	0.0045	<0.0025	<0.0025	<0.0025	<0.025
Silver	mg/L	0.10*	0.1	0.007	<0.0010	--	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0060
Sodium	mg/L	20 **	NS	NS	6.7	--	13	5.1	36	7.9	12	30	28	35	34	12
Zinc	mg/L	5*	5	0.9	0.033	--	0.14	0.058	<0.020	0.048	<0.020	0.091	<0.020	<0.020	<0.020	<0.010
VOCs (EPA Method 522)																
1,4-Dioxane	µg/L	0.3**	0.3	50,000	0.21	--	<0.20	<0.20	2.5	1.9	<0.20	4.5	4.0	<0.20	4.0	2.6
VOCs (EPA Method 8260)																
Chlorobenzene	µg/L	100	100	1,000	<1.0	--	<1.0	<1.0	2.5	<1.0	<1.0	1.8	<1.0	<1.0	<1.0	<1.0
Chloroethane	µg/L	NS	NS	NS	<1.0	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	µg/L	70	70	50,000	<1.0	--	1.8	<1.0	2.1	<1.0	<1.0	1.1	1.8	1.8	<1.0	<1.0
Methyl tert-butyl ether	µg/L	70**	70	50,000	<1.0	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	µg/L	5	5	30,000	<1.0	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	µg/L	5	5	5,000	<1.0	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	µg/L	2	2	50,000	<1.0	--	<1.0	<1.0	3.8	<1.0	<1.0	<1.0	1.0	1.2	<1.0	<1.0

QC by LEM 12/10/18

\\wse03.local\WSE\Projects\MA_PeabodyOldServer\Dighton\LF Mon FY19 2180521\Reports\GWSW\Tables\[Table 2-GW 1018.xls]GW

Notes:

(1) The Comparable Standard is from "Drinking Water Standards & Guidelines for Chemicals in Massachusetts Drinking Water," dated Spring 2017.

MMCL	Massachusetts Maximum Contaminant Level concentration
* SMCL	Secondary Maximum Contaminant Level concentration
** ORSG	Office of Research and Standards Drinking Water Guideline

(2) Method 1 GW-1 and GW-3 Standards taken from the Massachusetts Contingency Plan 310 CMR 40.0000, updated January 2015

(3) MMCL Standard is for free cyanide. Applying this standard to total cyanide is conservative.

<	Parameter was below the laboratory method detection limit, shown.
BOLD	The parameter was greater than the laboratory method detection limit.
BOLD (highlighted)	The parameter did not meet the comparable standard.

- = Parameters not taken.

-- = Destroyed

Abbreviations:

EPA	Environmental Protection Agency
mg/L	milligrams per liter
mS/cm	milliSiemens per centimeter
µg/L	micrograms per liter
NS	No Standard
NA	Not Analyzed
ND	Not Detected
VOCs	Volatile Organic Compounds

Table 3
Surface Water Sampling Results
Dighton Sanitary Landfill
Dighton, Massachusetts
October 16, 2018

Parameter	Units	Massachusetts Surface Water Quality Standards[1]	Method 1 GW-3 Standard	PZ-1
Field Parameters				
Temperature	degrees C	NS	NS	**11.90**
pH	SU	6.5 - 8.3 (2)	NS	**6.06**
Specific Conductance	mS/cm	NS	NS	**0.151**
Dissolved Oxygen	mg/L	NS	NS	**7.18**
Inorganics				
Alkalinity as $CaCO_3$	mg/L	20 (3)	NS	**37**
Chloride	mg/L	230	NS	**43**
Cyanide, Total (6)	mg/L	0.0052 (4)	0.03	<0.0050
Chemical Oxygen Demand	mg/L	NS	NS	**38**
Nitrate as Nitrogen	mg/L	NS	NS	**0.32**
Sulfate	mg/L	NS	NS	**6.6**
Total Dissolved Solids	mg/L	NS	NS	**150**
Hardness as calcium carbonate	mg/L	NS	NS	**52**
Total Metals				
Arsenic	mg/L	0.15	0.9	<0.0030
Barium	mg/L	0.004 (5)	50	**0.012**
Cadmium	mg/L	0.00025	0.004	<0.00050
Calcium	mg/L	116 (5)	NS	**15**
Chromium	mg/L	0.011 (6)	0.3	<0.0050
Copper	mg/L	0.0093	NS	<0.0050
Iron	mg/L	1 (d)	NS	**0.61**
Lead	mg/L	0.0032	0.01	<0.0025
Manganese	mg/L	0.12 (5)	NS	**0.29**
Mercury	mg/L	0.00091	0.02	<0.00020
Selenium	mg/L	0.005	0.1	<0.0025
Silver	mg/L	0.00036 (5)	0.007	<0.0010
Sodium	mg/L	680 (5)	NS	**19**
Zinc	mg/L	0.12	0.9	<0.010
VOCs (EPA Method 522)				
1,4-Dioxane	µg/L	NS	50,000	<0.20
VOCs (EPA Method 8260B)	µg/L	various	various	ND

QC by LEM 12/10/18 #N/A

Notes:

(1) Criteria are taken from the "National Recommended Water Quality Criteria,"(USEPA Office of Water, Office of Science and Technology, 2009) unless otherwise specified, are Criteria Continuous (chronic) Concentrations.

(2) The pH standard listed in 314 CMR 4.05(3)(b)(3) is the range of 6.5 through 8.3 standard units and not more then 0.5 units outside of the background range. Surface waters at the site, namely wetlands, are considered Unlisted waters, and are classified as Class B, High Quality Waters.

(3) The derivation of this value is presented in Red Book (EPA 440/9-76-023, July 1976). The CCC of 20 mg/L is a minimum value except where alkalinity is naturally lower, in which case the criterion cannot be lower than 25% oft he natural level.

(4) The standard is for free cyanide.

(5) The listed standard is published in the "Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota: 1996 Revision," (ES/ER/TM-96/R2).

(6) No standard exists for total chromium. The chromium standard listed is the criterion continuous concentration for hexavalent chromium (Cr+6).

<	Parameter was below the laboratory method detection limit, shown.
Bold	The resulting concentration was greater than the laboratory method detection limit, shown.
Bold	The resulting concentration is greater than the MA Surface Water Standards.

Abbreviations:

SU	Standard Units
mS/cm	milliSiemens per centimeter
mg/L	milligrams per liter
ug/L	micrograms per liter
uS/cm	microSiemens per centimeter
NA	Not Analyzed
NS	No Standard
ND	Not Detected
VOCs	Volatile Organic Compounds
d	dissolved

Table 4
October 16, 2018
Soil Gas Monitoring Results
Dighton Sanitary Landfill
Dighton, Massachusetts

Sampling Location	Initial Condition						Steady State Condition					
	Methane		Carbon Dioxide	Oxygen	Hydrogen Sulfide	NMVOCs	Methane		Carbon Dioxide	Oxygen	Hydrogen Sulfide	NMVOCs
	(%)	(%LEL)	(ppm)	(%)	(ppm)	(ppm)	(%)	(%LEL)	(ppm)	(%)	(ppm)	(ppm)
GM-1	0.0	0%	**0.1**	**20.1**	0.0	**0.5**	0.0	0%	**0.1**	**20.1**	0.0	**0.7**
GM-2	0.0	0%	**0.1**	**20.1**	0.0	**0.2**	0.0	0%	**0.1**	**20.0**	0.0	**2.8**
GM-3	0.0	0%	**0.1**	**20.1**	0.0	**0.1**	0.0	0%	**0.1**	**20.1**	0.0	**0.1**
GM-4	0.0	0%	**0.2**	**20.5**	0.0	**0.5**	0.0	0%	**0.1**	**20.4**	0.0	**0.1**
Attendance Shed (Shed)	0.0	0%	**0.2**	**20.5**	0.0	**1.3**						
Garage Stand (Shack)	0.0	0%	**0.1**	**20.4**	0.0	**2.0**						
Animal Shelter (Building)	0.0	0%	**0.2**	**20.5**	0.0	**1.7**						
Ambient	0.0	0%	**0.2**	**20.5**	0.0	**0.1**						

#N/A

QC by LEM 12/10/18

Notes:

Bold = parameter detected above instrument detection limit.
Bold = parameter detected above 25% LEL.

Abbreviations:

LEL = lower explosive limit.
ppm = parts per million.
NMVOCs = non-methane volatile organic compounds.

On-site Weather Conditions:

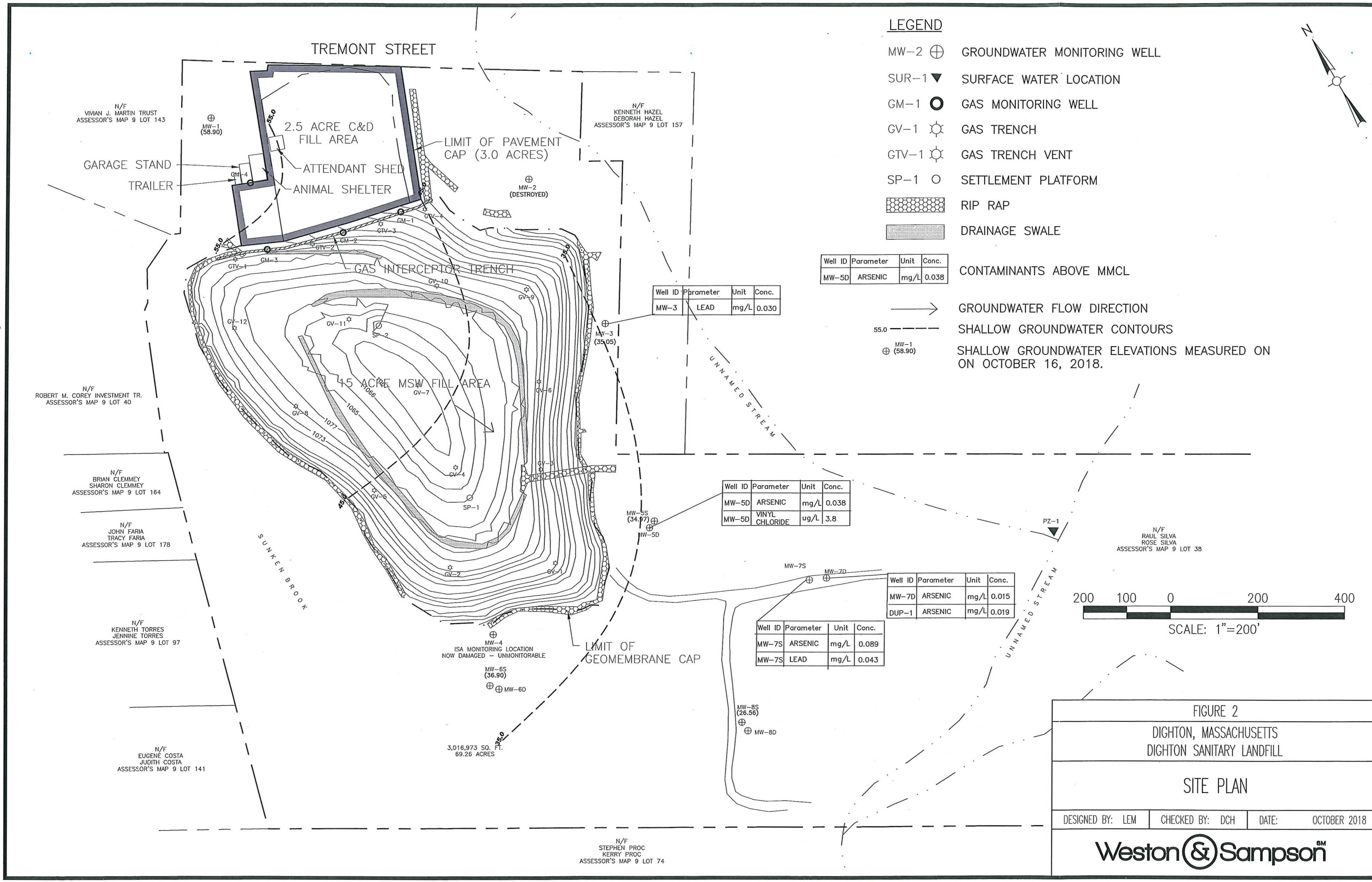
No onsite weather conditions were noted during this round of sampling.

Weather :

Sunny, 50 degrees F

Ground Conditions:

Damp



\\wse03.local\WSE\Projects\MA_PeabodyOldServer\Dighton\LF Mon FY19 2180521\CADD\Figure 2 - Site Plan Oct 2018.dwg

Table 1a
Groundwater Sampling Results, Monitoring Well MW-1
Dighton Landfill
Dighton, Massachusetts
November 2000 through November 2018

Parameter	Units	Comparable Standard (1)	Method 1 GW-1 (2)	Method 1 GW-3 (2)	6/97	5/98	11/98	5/99	11/99	11/00	6/01	12/01	5/02	11/02
Field Parameters														
Temperature	degrees C	NS	NS	NS	12.4	10.8	11.9	10.8	12.4	12.5	9.8	8.7	11.20	16.60
pH	unitless	6.5-8.5*	NS	NS	4.71	4.49	3.93	5.80	4.21	3.5	6.16	4.16	5.66	5.11
Specific Conductivity	umhos/cm	NS	NS	NS	53	52	86	114	85	69	78	0.08	0.041	0.059
Dissolved Oxygen	mg/l	NS	NS	NS	4.86	5.57	6.31	5.4	4.75	5.62	5.39	5.97	7.26	7.21
Inorganics														
Alkalinity as $CaCO_3$	mg/l	NS	NS	NS	4.4	ND	4.0	ND	ND	ND	ND	ND	ND	2.1
Chemical Oxygen Demand	mg/l	NS	NS	NS	120	85	150	51	96	72	52	47	70	67
Chloride	mg/l	250 *	NS	NS	3.8	3.8	5.4	ND	6.1	9.0	3.6	6.8	6.4	8.0
Total Cyanide	mg/l	0.2	0.2	0.03	ND	ND	ND	ND	ND	NA	ND	0.041	ND	ND
Nitrate as Nitrogen	mg/l	10	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sulfate	mg/l	250 *	NS	NS	7.8	ND	12	ND	ND	12	ND	11	ND	11
Total Dissolved Solids	mg/l	500 *	NS	NS	38	34	ND	ND	43	18	43	46	16	62
Dissolved Metals:														
Arsenic	mg/l	0.01	0.01	0.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	mg/l	2	2	50	0.03	0.14	0.11	0.07	0.12	ND	0.02	0.03	0.02	0.02
Cadmium	mg/l	0.005	0.005	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	mg/l	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/l	0.1	0.1	0.3	ND	ND	ND	ND	ND	NA	NA	ND	ND	ND
Copper	mg/l	1.3	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3 *	NS	NS	ND	0.14	ND	ND	ND	ND	ND	ND	ND	ND
Lead	mg/l	0.015	0.015	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	mg/l	0.05 *	NS	NS	0.02	0.03	0.03	0.13	0.04	0.035	0.01	0.02	0.01	0.01
Mercury	mg/l	0.002	0.002	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	mg/l	0.05	0.05	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	mg/l	0.1 *	0.1	0.007	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	mg/l	20 **	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/l	5 *	5	0.9	0.02	0.09	0.07	0.05	0.07	0.075	ND	ND	ND	ND
SVOCs (EPA Method 8270C) /VOCs (EPA Method 522)														
1,4-Dioxane	µg/l	0.3**	0.3 (3)	50,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (EPA Method 8260B)	µg/l	varies	varies	varies	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Parameter	Units	Comparable Standard (1)	Method 1 GW-1 (2)	Method 1 GW-3 (2)	5/03	11/26/03	5/27/04	11/10/04	5/19/05	6/8/06	11/30/06	5/24/07	12/6/07	2/14/08 (Resampling Event)
Field Parameters														
Temperature	degrees C	NS	NS	NS	10.10	11.73	16.80	11.20	10.49	10.70	15.40	15.04	8.10	–
pH	unitless	6.5-8.5*	NS	NS	4.54	5.10	6.35	4.53	5.17	4.05	7.48	6.29	4.67	–
Specific Conductivity	umhos/cm	NS	NS	NS	0.047	0.04 (mS/cm)	0.044 (mS/cm)	0.057 (mS/cm)	0.052 (mS/cm)	0.028 (mS/cm)	0.04 (mS/cm)	0.159 (mS/cm)	0.039 (mS/cm)	–
Dissolved Oxygen	mg/l	NS	NS	NS	5.83	3.16	5.20	3.97	8.80	5.26	5.92	10.94	7.58	–
Inorganics														
Alkalinity as $CaCO_3$	mg/l	NS	NS	NS	<1	<2	<2	<2	<2	<2	<2	<2	<2	–
Chemical Oxygen Demand	mg/l	NS	NS	NS	5.1	210	20	64	97	38	81	50	2000	–
Chloride	mg/l	250 *	NS	NS	<5.0	3.9	4.1	5.5	4.1	3.1	4	3.6	5.7	–
Total Cyanide	mg/l	0.2	0.2	0.03	<0.01	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	<0.005	<0.005	–
Nitrate as Nitrogen	mg/l	10	NS	NS	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	–
Sulfate	mg/l	250 *	NS	NS	8.3	<10	15	<10	<10	<10	<10	<10	<10	–
Total Dissolved Solids	mg/l	500 *	NS	NS	72	<10	31	22	66	18	47	40	26	–
Dissolved Metals:														
Arsenic	mg/l	0.01	0.01	0.9	<0.05	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.009	<0.005
Barium	mg/l	2	2	50	0.134	0.02	0.02	0.02	0.02	0.03	0.053	0.021	0.153	–
Cadmium	mg/l	0.005	0.005	0.004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	–
Calcium	mg/l	NS	NS	NS	NA	NA	NA	NA	NA	NA	1.7	1.1	3.8	–
Chromium	mg/l	0.1	0.1	0.3	<0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	–
Copper	mg/l	1.3	NS	NS	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.026	–
Iron	mg/l	0.3 *	NS	NS	23	0.11	0.59	<0.05	0.09	2.10	5.80	<0.05	33	–
Lead	mg/l	0.015	0.015	0.01	ND	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.023	<0.01
Manganese	mg/l	0.05 *	NS	NS	0.4	0.03	0.09	0.02	0.01	0.04	0.103	0.01	0.596	–
Mercury	mg/l	0.002	0.002	0.02	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	–
Selenium	mg/l	0.05	0.05	0.1	<0.05	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	–
Silver	mg/l	0.1 *	0.1	0.007	<0.02	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	–
Sodium	mg/l	20 **	NS	NS	NA	NA	NA	NA	NA	NA	3.1	2.4	6.4	–
Zinc	mg/l	5 *	5	0.9	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.102	–
SVOCs (EPA Method 8270C) /VOCs (EPA Method 522)														
1,4-Dioxane	µg/l	0.3**	0.3 (3)	50,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	–
VOCs (EPA Method 8260B)	µg/l	varies	varies	varies	ND	ND	ND	ND	ND	ND	ND	ND	ND	–

Parameter	Units	Comparable Standard (1)	Method 1 GW-1 (2)	Method 1 GW-3 (2)	6/12/08	4/14/09	9/23/09	4/22/10	9/23/10	10/4/11	9/25/12	9/17/2013	11/13/2017	10/16/2017
Field Parameters														
Temperature	degrees C	NS	NS	NS	12.30	7.95	13.65	-	13.42	13.79	13.10	12.64	10.90	12.30
pH	unitless	6.5-8.5*	NS	NS	6.52	6.83	3.80	-	3.06	3.46	4.86	3.65*	6.06	7.88
Specific Conductivity	umhos/cm	NS	NS	NS	0.026 (mS/cm)	0.041 (mS/cm)	0.046 (mS/cm)	-	0.04 (mS/cm)	0.061	0.036	0.276	0.147	0.070
Dissolved Oxygen	mg/l	NS	NS	NS	8.58	9.65	9.80	-	6.27	4.37	6.50	4.95	5.89	7.86
Inorganics														
Alkalinity as $CaCO_3$	mg/l	NS	NS	NS	<2	<1.0	<1.0	<1.0	<1.0	<1.0	1.5	<5.0	<5.0	<5.0
Chemical Oxygen Demand	mg/l	NS	NS	NS	73	NA	84	74	<20	<20	<20	<10	110	<10
Chloride	mg/l	250 *	NS	NS	4.8	4.1	4.0	4.0	4.5	6.6	5.3	6.9	10	10
Total Cyanide	mg/l	0.2	0.2	0.03	<0.005	NA	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrate as Nitrogen	mg/l	10	NS	NS	<0.1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Sulfate	mg/l	250 *	NS	NS	<10	7.5	8.6	12	16	9.4	13	18	11	<10
Total Dissolved Solids	mg/l	500 *	NS	NS	27	52	78	25	36	26	32	47	49	57
Dissolved Metals:														
Arsenic	mg/l	0.01	0.01	0.9	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0010	<0.010	<0.0010	<0.0030
Barium	mg/l	2	2	50	0.038	0.035	0.038	0.031	0.042	0.053	0.018	0.043	0.10	0.068
Cadmium	mg/l	0.005	0.005	0.004	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.00050
Calcium	mg/l	NS	NS	NS	1.0	1.1	1	1.2	1.5	0.94	1.000	1.3	1.7	1.7
Chromium	mg/l	0.1	0.1	0.3	<0.01	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040	<0.0040	<0.0050
Copper	mg/l	1.3	NS	NS	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0050
Iron	mg/l	0.3 *	NS	NS	<0.05	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.050	0.068	<0.10
Lead	mg/l	0.015	0.015	0.01	<0.01	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0010	<0.0025
Manganese	mg/l	0.05 *	NS	NS	0.011	0.012	0.015	0.011	0.018	0.014	0.011	0.015	0.11	0.069
Mercury	mg/l	0.002	0.002	0.02	<0.0002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Selenium	mg/l	0.05	0.05	0.1	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.015	<0.025	<0.0025
Silver	mg/l	0.1 *	0.1	0.007	<0.007	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0030	<0.0060	<0.0010
Sodium	mg/l	20 **	NS	NS	3.0	3.3	25	3.3	4.9	5.5	4.3	5	6.3	6.7
Zinc	mg/l	5 *	5	0.9	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.020	0.11	0.033
SVOCs (EPA Method 8270C) /VOCs (EPA Method 522)														
1,4-Dioxane	µg/l	0.3**	0.3 (3)	50,000	NA	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<1.6	<0.20	0.21
VOCs (EPA Method 8260B)	µg/l	varies	varies	varies	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

\\wse03.local\WSE\Projects\MA_PeabodyOldServer\Dighton\LF Mon FY19 2180521\Reports\GWSW\Appendix A-Historical Data\[Dighton LF Historic GW thru 1118.xls]MW

Notes: (1) The Standard is from "Drinking Water Standards & Guidelines for Chemicals in Massachusetts Drinking Water," dated Spring 2017.
MMCL Massachusetts Maximum Contaminant Level concentration
* SMCL Secondary Maximum Contaminant Level concentration
** ORSG Office of Research and Standard Drinking Water Guideline
NOTE: The arsenic standrad was changed from 0.05 mg/L to 0.01 mg/l in Spring 2001
(2) Method 1 GW-1 and GW-3 standards taken from the Massachusetts Contingency Plan 310 CMR 40.0000 (updated January 2015).
(3) The Method 1 GW-1 Standard for 1,4-dioxane was changed from 3µg/L to 0.3 µg/L in April 2014.
< = The resulting concentration was below the laboratory detection limit, shown.
BOLD The resulting concentration was greater than the laboratory detection limit.
BOLD The resulting concentration was greater than the Comparable Standard (exceedances shown are for the existing standards at the time of sampling)

Abbreviations:

SU	Standard Units
µg/l	micrograms per liter (parts per billion
mg/l	milligrams per liter (parts per million
mS/cm	milliSiemens per centimete
VOCs	Volatile Organic Compound:
NS	No Standard
ND	Not Detected
NA	Not Analyzed
B	Compound detected in method blank
J	Estimated concentration

Table 1a
Groundwater Sampling Results, Monitoring Well MW-2
Dighton Landfill
Dighton, Massachusetts
November 2000 through November 2018

Parameter	Units	Comparable Standard (1)	Method 1 GW-1 (2)	Method 1 GW-3 (2)	6/97	5/98	11/98	5/99	11/99	11/00	3/01	6/01	12/01	5/02
Field Parameters														
Temperature	degrees C	NS	NS	NS	13.0	11	11.1	11.8	12.5	13.4	6.5	12.2	11.2	14
pH	unitless	6.5-8.5*	NS	NS	6.29	6.25	5.62	6.30	5.73	5.80	6.50	5.50	5.40	7.70
Specific Conductivity	umhos/cm	NS	NS	NS	910	1610	95	1,070	70	683	673	999	0.568	0.461
Dissolved Oxygen	mg/l	NS	NS	NS	1.06	1.8	2.2	1.33	2.18	0.80	NA	4.52	4.52	6.32
Inorganics														
Alkalinity as $CaCO_3$	mg/l	NS	NS	NS	240	450	260	300	230	220	210	200	170	140
Chemical Oxygen Demand	mg/l	NS	NS	NS	260	340	290	210	150	99	65	96	59	62
Chloride	mg/l	250 *	NS	NS	43	59	100	ND	23	18	43	37	33	19
Total Cyanide	mg/l	0.2	0.2	0.03	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	NS	NS	0.05	ND	4.80	ND	ND	ND	ND	0.14	ND	ND
Sulfate	mg/l	250 *	NS	NS	160	230	490	160	120	87	130	62	43	37
Total Dissolved Solids	mg/l	500 *	NS	NS	500	1200	1200	660	450	370	400	360	390	220
Dissolved Metals:														
Arsenic	mg/l	0.01	0.01	0.9	0.025	0.012	ND	ND	ND	0.036	ND	0.043	0.035	0.031
Barium	mg/l	2	2	50	0.08	0.230	0.21	0.17	0.09	ND	0.03	0.03	0.03	0.02
Cadmium	mg/l	0.005	0.005	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	mg/l	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/l	0.1	0.1	0.3	ND	ND	ND	ND	ND	NA	NA	NA	ND	ND
Copper	mg/l	1.3	NS	NS	ND	ND	0.01	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3 *	NS	NS	30	40	ND	23	12	15	8.4	17	9.3	8.8
Lead	mg/l	0.015	0.015	0.01	ND	ND	ND	ND	ND	0.04	ND	ND	ND	ND
Manganese	mg/l	0.05 *	NS	NS	4.3	5.4	0.81	3.9	2.4	2.2	2.1	2.1	1.8	1.4
Mercury	mg/l	0.002	0.002	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	mg/l	0.05	0.05	0.1	ND	ND	0.015	ND	ND	ND	ND	ND	ND	ND
Silver	mg/l	0.1 *	0.1	0.007	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	mg/l	20 **	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/l	5 *	5	0.9	0.01	0.04	0.06	ND	ND	0.031	ND	ND	ND	ND
SVOCs (EPA Method 8270C) /VOCs (EPA Method 522)														
1,4-Dioxane	µg/l	0.3**	0.3 (3)	50,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (EPA Method 8260B)														
Carbon disulfide	µg/l	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	µg/l	100	100	1,000	ND	4.3	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2,-Dichloroethene	µg/l	70	70	50,000	1.9	2.0	ND	3.0	3.2	6.8	3.1	5.2	3.2	2.5
Methyl tert-butyl ether	µg/l	20-40 *	70	50,000	NA	13	ND	ND	ND	ND	ND	ND	1.4	ND
Trichloroethene	µg/l	5	5	5,000	1.0	ND	ND	1.5	2.2	2.8	1.9	2.2	2.1	1.7

Parameter	11/02	5/03	11/26/03	5/27/04	11/10/04	5/19/05	6/8/06	11/30/06	5/24/07	8/9/07 (Resampling event)	12/6/07
Field Parameters											
Temperature	14.80	10.50	11.81	11.30	12.80	11.00	12.00	13.20	17.61	NA	9.90
pH	6.80	5.68	6.50	6.67	6.27	6.17	6.16	5.92	6.43	NA	5.62
Specific Conductivity	0.435	0.499	0.391 (mS/cm)	0.172 (mS/cm)	0.367 (mS/cm)	0.455 (mS/am)	0.306 (mS/am)	0.236 (mS/cm)	0.303 (mS/cm)	NA	0.46 (mS/cm)
Dissolved Oxygen	2.01	2.14	2.27	2.30	1.88	2.74	1.65	1.41	4.12	NA	1.79
Inorganics											
Alkalinity as $CaCO_3$	130	180	110	100	100	120	100	110	88	NA	81
Chemical Oxygen Demand	55	<4.0	150	45	150	74	36	41	80	NA	73
Chloride	26	49	42	38	30	45	50	28	35	NA	16
Total Cyanide	ND	<0.01	0.005	0.008	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005
Nitrate as Nitrogen	0.42	<0.01	<0.1	<0.1	<0.1	<0.1	0.12	<0.1	0.34	NA	<0.1
Sulfate	38	35	26	25	24	26	19	17	17	NA	250
Total Dissolved Solids	260	300	210	210	140	260	235	170	210	NA	540
Dissolved Metals:											
Arsenic	0.037	<0.05	0.027	0.036	0.016	0.028	0.047	0.017	0.023	0.037	<0.005
Barium	0.06	0.04	0.02	0.02	0.02	0.03	0.02	0.016	0.017	NA	0.037
Cadmium	ND	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005
Calcium	NA	NA	NA	NA	NA	NA	NA	28	29	NA	80
Chromium	ND	<0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	<0.01
Copper	0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	<0.01
Iron	20	20	14	10	4.0	12.0	16.0	6.7	9.1	NA	1.00
Lead	ND	ND	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	<0.01
Manganese	1.5	2.3	1.6	1.4	1.2	1.8	1.6	1.23	1.35	NA	1.74
Mercury	ND	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NA	<0.0002
Selenium	ND	<0.05	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	NA	<0.01
Silver	ND	<0.05	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	NA	<0.007
Sodium	NA	NA	NA	NA	NA	NA	NA	23	20	NA	31
Zinc	ND	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NA	0.14
SVOCs (EPA Method 8270C) /VOCs (EPA Method 522)											
1,4-Dioxane	NA	NA	NA	NS	NA	NA	NA	NA	NA	NA	NA
VOCs (EPA Method 8260B)											
Carbon disulfide	ND	ND	ND	ND	ND	ND	13	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2,-Dichloroethene	2.0	4.0	2.5	1.6	ND	2.1	1.7	1.8	1.3	NA	ND
Methyl tert-butyl ether	ND	ND	7.5	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	2.4	2.0	1.4	0.88	1.4	1.0	1.0	1.3	0.8	NA	ND

Parameter	6/12/08	4/14/09	9/23/09	4/22/10	9/23/10	10/4/11	9/25/12	9/17/13	11/13/17	10/16/18
Field Parameters										
Temperature	13.70	9.45	15.23	11.90	15.44	15.64	15.50	14.66	–	–
pH	6.33	7.21	5.71	6.24	5.49	5.68	6.22	6.16	–	–
Specific Conductivity	0.187 (mS/cm)	0.574 (mS/cm)	0.238 (mS/cm)	0.293 (mS/cm)	0.311 (mS/cm)	0.312	0.294	0.429	–	–
Dissolved Oxygen	6.51	5.01	2.48	1.96	2.73	2.83	3.27	5.02	–	–
Inorganics										
Alkalinity as $CaCO_3$	76	89	74	110	79	85	68	74	–	–
Chemical Oxygen Demand	39	NA	200	33	<20	<20	<20	<10	–	–
Chloride	23	76	32	70	46	35	56	77	–	–
Total Cyanide	<0.005	NA	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	–	–
Nitrate as Nitrogen	0.14	<0.050	<0.050	<0.050	0.1	<0.050	<0.050	<0.050	–	–
Sulfate	18	19	14	27	22	16	15	20	–	–
Total Dissolved Solids	150	250	160	280	190	180	220	260	–	–
Dissolved Metals:										
Arsenic	0.029	0.014	0.021	0.012	0.010	<0.0010	0.019	<0.010	–	–
Barium	0.016	0.031	<0.020	0.031	0.022	0.018	0.019	0.0240	–	–
Cadmium	<0.005	0.0012	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	–	–
Calcium	24	52	24	49	32	28	30	34	–	–
Chromium	<0.01	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040	–	–
Copper	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	–	–
Iron	9.30	9.90	6.50	9.8	4.7	5.8	9.5	4.6	–	–
Lead	<0.01	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	–	–
Manganese	1.14	2.4	1.2	2.5	1.7	1.4	1.6	2.0	–	–
Mercury	<0.0002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	–	–
Selenium	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.015	–	–
Silver	<0.007	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0030	–	–
Sodium	17	28	25	39	32	26	25	34	–	–
Zinc	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.023	–	–
SVOCs (EPA Method 8270C) /VOCs (EPA Method 522)										
1,4-Dioxane	NA	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<1.6	–	–
VOCs (EPA Method 8260B)										
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	<1.0	–	–
Chlorobenzene	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	–	–
cis-1,2,-Dichloroethene	1.3	1.6	1.7	1.9	1.4	1.6	1.3	1.0	–	–
Methyl tert-butyl ether	ND	ND	ND	ND	ND	<1.0	<5.0	<1.0	–	–
Trichloroethene	0.9	ND	ND	ND	1.7	1.3	1.3	1.3	–	–

\\wse03.local\WSE\Projects\MA_PeabodyOldServer\Dighton\LF Mon FY19 2180521\Reports\GWSW\Appendix A-Historical Data\[Dighton LF Historic GW thru 1118.xls]MW

Notes: (1) The Standard is from "Drinking Water Standards & Guidelines for Chemicals in Massachusetts Drinking Water," dated Spring 2017.
MMCL Massachusetts Maximum Contaminant Level concentration
* SMCL Secondary Maximum Contaminant Level concentration
** ORSG Office of Research and Standard Drinking Water Guideline
NOTE: The arsenic standrad was changed from 0.05 mg/L to 0.01 mg/l in Spring 2001
(2) Method 1 GW-1 and GW-3 standards taken from the Massachusetts Contingency Plan 310 CMR 40.0000 (updated January 2015).
(3) The Method 1 GW-1 Standard for 1,4-dioxane was changed from 3µg/L to 0.3 µg/L in April 2014.
< = The resulting concentration was below the laboratory detection limit, shown.
BOLD The resulting concentration was greater than the laboratory detection limit.
BOLD The resulting concentration was greater than the Comparable Standard (exceedances shown are for the existing standards at the time of sampling)
– Destroyed

Abbreviations:
SU Standard Units
µg/l micrograms per liter (parts per billion
mg/l milligrams per liter (parts per million
mS/cm milliSiemens per centimete
VOCs Volatile Organic Compounds
NS No Standard
ND Not Detected
NA Not Analayzed
B Compound detected in method blank

Table 1a
Groundwater Sampling Results, Monitoring Well MW-3
Dighton Landfill
Dighton, Massachusetts
November 2000 through November 2018

Parameter	Units	Comparable Standard (1)	Method 1 GW-1 (2)	Method 1 GW-3 (2)	6/97	5/98	11/98	5/99	11/99	11/00	6/01	12/01	5/02	11/02
Field Parameters														
Temperature	degrees C	NS	NS	NS	12.7	11.1	11.6	11	12.5	13.3	10.6	11.1	13.2	13.80
pH	unitless	6.5-8.5*	NS	NS	6.15	6.02	5.31	6.63	6.03	5.64	5.81	5.85	7.58	7.06
Specific Conductivity	umhos/cm	NS	NS	NS	1490	1880	1620	1,240	1,080	1,360	1,210	1.07 (mS/cm)	0.645	0.554
Dissolved Oxygen	mg/l	NS	NS	NS	1.39	2.8	2.1	3.16	2.89	2.13	3.27	7.69	6.84	4.37
Inorganics														
Alkalinity as $CaCO_3$	mg/l	NS	NS	NS	240	330	290	330	230	680	280	420	230	220
Chemical Oxygen Demand	mg/l	NS	NS	NS	350	400	260	270	170	200	190	260	220	100
Chloride	mg/l	250 *	NS	NS	94	91	31	ND	35	77	37	72	16	11
Total Cyanide	mg/l	0.2	0.2	0.03	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
Nitrate as Nitrogen	mg/l	10	NS	NS	0.10	2.70	0.18	ND	1.2	ND	0.2	ND	0.95	0.64
Sulfate	mg/l	250 *	NS	NS	440	370	130	230	320	130	100	63	80	66
Total Dissolved Solids	mg/l	500 *	NS	NS	1100	1600	510	880	730	770	630	760	430	410
Dissolved Metals:														
Arsenic	mg/l	0.01	0.01	0.9	0.005	ND	ND	ND	ND	ND	0.015	0.03	ND	ND
Barium	mg/l	2	2	50	0.14	0.230	0.18	0.2	0.15	ND	0.07	0.12	0.04	0.04
Cadmium	mg/l	0.005	0.005	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	mg/l	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/l	0.1	0.1	0.3	ND	ND	ND	ND	ND	NA	NA	ND	ND	ND
Copper	mg/l	1.3	NS	NS	0.02	0.02	ND	0.01	ND	NA	ND	0.01	ND	ND
Iron	mg/l	0.3 *	NS	NS	0.03	0.36	19	ND	0.1	ND	ND	2.9	ND	ND
Lead	mg/l	0.015	0.015	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	mg/l	0.05 *	NS	NS	0.69	0.58	3.0	0.17	0.13	ND	1.0	3.7	ND	ND
Mercury	mg/l	0.002	0.002	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	mg/l	0.05	0.05	0.1	0.012	ND	0.016	ND	ND	ND	ND	ND	ND	ND
Silver	mg/l	0.1 *	0.1	0.007	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	mg/l	20 **	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/l	5 *	5	0.9	ND	0.08	0.06	0.06	ND	0.048	ND	ND	ND	ND
SVOCs (EPA Method 8270C) /VOCs (EPA Method 522)														
1,4-Dioxane	µg/l	0.3**	0.3 (3)	50,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (EPA Method 8260B)														
Benzene	µg/l	5	5	10,000	ND	ND	ND	ND	ND	3.5	1.0	1.3	ND	ND
Chlorobenzene	µg/l	100	100	1,000	ND	ND	ND	ND	ND	4.9	1.7	3.9	ND	ND
Chloroethane	µg/l	1,000 ***	NS	NS	ND	ND	ND	ND	ND	ND	ND	1.1	ND	ND
Ethyl Ether	µg/l	NS	NS	NS	ND	ND	ND	ND	ND	ND	3.5	10	ND	ND
cis-1,2,-Dichloroethene	µg/l	70	70	50,000	2.2	ND	3.7	ND	ND	ND	ND	0.9	ND	ND
Methyl tert-butyl ether	µg/l	20-40 *	70	50,000	ND	ND	ND	ND	ND	3.1	0.9	2.1	ND	ND
Tetrachloroethene	µg/l	5	5	30,000	ND	ND	ND	ND	ND	ND	ND	0.58	ND	ND
Trichloroethene	µg/l	5	5	5,000	ND	ND	2.4	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	µg/l	2	2	50,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Parameter	11/26/03	5/27/04	11/10/04	5/19/05	6/8/06	11/30/06	5/24/07	12/6/07	6/12/08	4/14/09	9/23/09	4/22/10	9/23/10	10/4/11	9/25/12	9/17/2013	11/13/2017	10/16/2018
Field Parameters																		
Temperature	11.23	11.60	11.70	10.38	10.90	12.30	13.95	9.10	12.00	8.20	15.60	10.54	14.68	15.07	14.92	13.62	11.30	14.30
pH	6.59	6.96	6.51	6.53	6.57	6.24	6.67	6.17	6.39	7.39	6.00	6.45	5.69	5.84	6.32	6.22	6.15	6.30
Specific Conductivity	0.418 (mS/cm)	0.3 (mS/cm)	0.455 (mS/cm)	0.266 (mS/cm)	0.136 (mS/cm)	0.163 (mS/cm)	0.176 (mS/cm)	0.35 (mS/cm)	0.149 (mS/cm)	0.213 (mS/cm)	0.257 (mS/cm)	0.104 (mS/cm)	0.208 (mS/cm)	0.233	0.158	0.484	0.259	0.234
Dissolved Oxygen	3.21	2.98	6.58	2.14	4.66	2.32	6.42	6.37	8.44	5.17	11.72	7.48	4.17	3.97	5.01	3.13	5.07	6.21
Inorganics																		
Alkalinity as $CaCO_3$	180	120	160	120	89	100	72	170	77	73	110	71	130	91	91	130	62	71
Chemical Oxygen Demand	210	93	250	130	130	90	76	150	94	NA	180	90	35	<20	31	27	<10	18
Chloride	6	5.8	9.0	2.9	1.4	4.9	3.7	38	7.4	2.5	18	2.5	48.0	7.8	9.1	57	22	27
Total Cyanide	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrate as Nitrogen	0.22	1.0	0.13	<0.1	<0.1	<0.1	0.66	<0.1	0.19	<0.050	<0.050	<0.050	<0.050	0.052	<0.050	<0.050	0.051	<0.050
Sulfate	42	36	54	25	<10	13	13	44	23	8.6	31	11	57	17	19	57	20	20
Total Dissolved Solids	270	210	250	200	200	170	130	54	180	140	220	150	340	160	200	350	550	160
Dissolved Metals:																		
Arsenic	<0.01	<0.005	<0.005	<0.005	0.005	<0.005	0.006	<0.005	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0010	0.010
Barium	0.04	0.03	0.04	0.02	0.03	0.019	0.038	0.05	0.027	0.02	0.032	0.016	0.051	0.024	0.020	0.051	0.018	0.17
Cadmium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.00050
Calcium	NA	NA	NA	NA	NA	32	21	57	27	27	46	25	64	34	28	59	25	33
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040	<0.0040	0.028
Copper	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.036
Iron	<0.05	<0.05	0.45	<0.05	4.2	0.35	12.0	0.84	5.20	0.43	<0.10	<0.10	<0.10	<0.10	0.57	0.17	0.081	28
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0010	0.030
Manganese	<0.01	<0.01	0.24	0.02	0.11	0.011	0.355	0.422	0.106	0.011	0.11	<0.010	0.42	0.03	0.19	0.21	0.089	0.540
Mercury	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Selenium	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.015	<0.025	0.0030
Silver	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0030	<0.0060	<0.0010
Sodium	NA	NA	NA	NA	NA	2.6	2.6	23	4.4	3.2	12	3.5	23	7.7	5.9	25	11	13
Zinc	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.125	0.125	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.049	0.062	0.14
SVOCs (EPA Method 8270C) /VOCs (EPA Method 522)																		
1,4-Dioxane	NA	NA	NA	NA	NA	NA	NA	NA	NA	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	1.6	0.20	<0.20
VOCs (EPA Method 8260B)																		
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	1.4	ND	ND	ND	ND	1.1	<1.0	<1.0	1.6	<1.0	<1.0
Chloroethane	ND	ND	ND	ND	ND	ND	ND	2.2	ND	ND	ND	ND	2.8	<2.0	<1.0	1.6	<1.0	<1.0
Ethyl Ether	ND	ND	ND	ND	ND	ND	ND	3.5	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0
cis-1,2,-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	5.3	ND	ND	6.0	ND	8.9	<1.0	<1.0	8.5	<1.0	1.8
Methyl tert-butyl ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	0.5	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	17	ND	ND	9.8	ND	18	<0.50	<1.0	15	<1.0	<1.0

\\wse03.local\WSE\Projects\MA_PeabodyOldServer\Dighton\LF Mon FY19 2180521\Reports\GWSW\Appendix A-Historical Data\[Dighton LF Historic GW thru 1118.xls]MW-1

Notes: (1) The Standard is from "Drinking Water Standards & Guidelines for Chemicals in Massachusetts Drinking Water," dated Spring 2017.
MMCL Massachusetts Maximum Contaminant Level concentration
* SMCL Secondary Maximum Contaminant Level concentration
** ORSG Office of Research and Standard Drinking Water Guideline
NOTE: The arsenic standrad was changed from 0.05 mg/L to 0.01 mg/l in Spring 2001
(2) Method 1 GW-1 and GW-3 standards taken from the Massachusetts Contingency Plan 310 CMR 40.0000 (updated January 2015).
(3) The Method 1 GW-1 Standard for 1,4-dioxane was changed from 3 µg/L to 0.3 µg/L in April 2014.
< = The resulting concentration was below the laboratory detection limit, shown.
BOLD The resulting concentration was greater than the laboratory detection limit.
BOLD The resulting concentration was greater than the Comparable Standard (exceedances shown are for the existing standards at the time of sampling)

Abbreviations:
SU Standard Units
µg/l micrograms per liter (parts per billion
mg/l milligrams per liter (parts per million
mS/cm milliSiemens per centimete
VOCs Volatile Organic Compounds
NS No Standard
ND Not Detected
NA Not Analayzed
B Compound detected in method blank

Table 1a
Groundwater Sampling Results, Monitoring Well MW-5S
Dighton Landfill
Dighton, Massachusetts
November 2000 through November 2018

Parameter	Units	Comparable Standard (1)	Method 1 GW-1 (2)	Method 1 GW-3 (2)	6/97	5/98	11/98	5/99	11/99	11/00	6/01	12/01	5/02	11/02	5/03
Field Parameters															
Temperature	degrees C	NS	NS	NS	14.1	10.9	9.6	12.3	11.4	12.0	12	10.1	11.6	13.20	10.20
pH	unitless	6.5-8.5*	NS	NS	6.51	6.96	**5.33**	7.30	6.52	**5.29**	6.80	7.10	6.72	**6.40**	**6.16**
Specific Conductivity	umhos/cm	NS	NS	NS	358	261	214	223	206	220	170	0.163 (mS/cm)	0.131 (mS/cm)	0.078 (mS/cm)	0.067 (mS/cm)
Dissolved Oxygen	mg/l	NS	NS	NS	2.39	2.4	8.7	5.36	6.1	2.55	NA	5.73	6.3	7.79	7.99
Inorganics															
Alkalinity as $CaCO_3$	mg/l	NS	NS	NS	77	41	33	26	29	31	13	28	14	13	21
Chemical Oxygen Demand	mg/l	NS	NS	NS	140	120	91	41	120	52	ND	74	120	70	17
Chloride	mg/l	250 *	NS	NS	25	16	9.2	ND	9.5	7.5	6.6	8.0	9.6	6.6	<5.0
Total Cyanide	mg/l	0.2	0.2	0.03	ND	ND	ND	ND	ND	NA	ND	0.006	ND	ND	<0.01
Nitrate as Nitrogen	mg/l	10	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.01
Sulfate	mg/l	250 *	NS	NS	47	45	39	40	41	49	15	ND	19	18	13
Total Dissolved Solids	mg/l	500 *	NS	NS	220	160	130	140	140	100	77	190	52	110	68
Dissolved Metals:															
Arsenic	mg/l	0.01	0.01	0.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.05
Barium	mg/l	2	2	50	0.03	0.17	0.14	0.15	0.12	ND	0.01	0.01	0.01	0.02	0.023
Cadmium	mg/l	0.005	0.005	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.005
Calcium	mg/l	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/l	0.1	0.1	0.3	ND	ND	ND	ND	ND	NA	NA	ND	ND	ND	<0.03
Copper	mg/l	1.3	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.05
Iron	mg/l	0.3 *	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.7**
Lead	mg/l	0.015	0.015	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.01
Manganese	mg/l	0.05 *	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.04
Mercury	mg/l	0.002	0.002	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005
Selenium	mg/l	0.05	0.05	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.05
Silver	mg/l	0.1 *	0.1	0.007	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.02
Sodium	mg/l	20 **	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/l	5 *	5	0.9	0.01	0.37	ND	ND	ND	0.039	ND	ND	ND	ND	<0.02
SVOCs (EPA Method 8270C) /VOCs (EPA Method 522)															
1,4-Dioxane	µg/l	0.3**	0.3 (3)	50,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (EPA Method 8260B)															
Tetrachloroethene	µg/l	5	5	30,000	1.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	µg/l	2	2	50,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Parameter	11/26/03	5/27/04	11/10/04	5/19/05	6/8/06	11/30/06	5/24/07	8/9/07 Resampling Event	12/6/07	6/12/08	4/14/09	9/23/09	4/22/10	9/23/10	10/4/11	9/25/12	9/17/2013	11/13/2017	10/16/2018
Field Parameters																			
Temperature	7.40	10.60	11.10	9.02	11.20	11.80	16.70	NA	6.10	12.10	7.11	16.53	9.36	14.79	15.65	15.52	14.38	9.17	14.30
pH	10.52	6.73	**6.21**	**5.64**	6.68	**6.50**	6.58	NA	6.85	6.51	6.57	**5.38**	**5.85**	**5.68**	**5.46**	6.87	7.36	**5.28**	**5.65**
Specific Conductivity	0.066 (mS/cm)	0.104 (mS/cm)	0.069 (mS/cm)	0.069 (mS/cm)	0.061 (mS/cm)	0.046 (mS/cm)	0.075 (mS/cm)	NA	0.044 (mS/cm)	0.044 (mS/cm)	0	0.073 (mS/cm)	0.125 (mS/cm)	0.126 (mS/cm)	0.076	0.081	0.116	0.089	0.056
Dissolved Oxygen	3.21	4.12	5.81	6.78	7.47	6.20	8.67	NA	6.31	9.11	6.82	4.31	5.92	5.19	5.46	6.37	4.16	5.54	5.49
Inorganics																			
Alkalinity as $CaCO_3$	8.5	15	8.8	13	37	16	27	NA	16	16	21	17	22	38	17	29	33	6.3	13.0
Chemical Oxygen Demand	27	43	110	67	92	34	55	NA	92	69	NA	72	51	<20	<20	<20	<10	<10	<10
Chloride	2.8	2.6	2.0	2.3	<1	3.8	1.8	NA	4.1	3	1.7	2.5	2.3	12	3	4.4	5.5	8	5.1
Total Cyanide	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrate as Nitrogen	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.28	NA	<0.1	0.14	0.27	0.12	0.070	<0.050	0.085	<0.050	<0.050	<0.050	0.082
Sulfate	15	<10	18	18	<10	<10	<10	NA	14	<10	4.4	9.6	7.9	18	7.4	18	20	7.1	5.0
Total Dissolved Solids	11	46	22	87	<10	40	71	NA	290	55	64	67	62	100	74	94	62	66	38
Dissolved Metals:																			
Arsenic	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	**0.025**	<0.005	<0.005	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0010	<0.010	<0.010	0.0083
Barium	0.03	0.03	0.02	0.02	0.01	0.016	0.148	NA	0.015	0.013	0.014	<0.020	0.014	0.036	0.013	0.018	0.014	0.14	0.15
Cadmium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	**<0.0020**	<0.00050
Calcium	NA	NA	NA	NA	NA	6.7	12	NA	9.4	7.6	9.9	9	10	19	7.7	12	12	8.2	8.5
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	NA	<0.01	<0.01	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040	<0.0040	0.016
Copper	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.034	NA	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.015
Iron	**0.43**	0.11	**0.32**	<0.05	0.25	<0.05	**43**	NA	0.16	0.07	0.20	<0.10	<0.10	0.22	<0.10	0.12	0.08	<0.050	**18**
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.031**	<0.01	<0.01	<0.01	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0016	0.014
Manganese	0.02	**0.32**	0.05	<0.01	0.01	<0.01	**0.949**	NA	**0.073**	<0.01	<0.010	<0.010	0.010	**0.074**	<0.010	0.017	0.037	**0.066**	**0.51**
Mercury	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NA	<0.0002	<0.0002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Selenium	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	NA	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.015	<0.025	<0.0025
Silver	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	NA	<0.007	<0.007	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0030	<0.0060	<0.0010
Sodium	NA	NA	NA	NA	NA	**37**	<2	NA	3.2	<2	<2	2.9	2.2	7.3	3.0	5.8	7.8	4.9	5.1
Zinc	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.117	NA	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.018	0.026	0.058
SVOCs (EPA Method 8270C) /VOCs (EPA Method 522)																			
1,4-Dioxane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<1.6	<0.20	<0.20
VOCs (EPA Method 8260B)																			
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	NA	0.64	0.52	ND	1.1	1.1	2.0	<1.0	1.2	1.0	<1.0	<1.0
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.5	<0.50	<1.0	<1.0	<1.0	<1.0

\\wse03.local\WSE\Projects\MA_PeabodyOldServer\Dighton\LF Mon FY19 2180521\Reports\GWSW\Appendix A-Historical Data\[Dighton LF Historic GW thru 1118.xls]MW

Notes: (1) The Standard is from "Drinking Water Standards & Guidelines for Chemicals in Massachusetts Drinking Water," dated Spring 2017.
MMCL Massachusetts Maximum Contaminant Level concentration
* SMCL Secondary Maximum Contaminant Level concentration
** ORSG Office of Research and Standard Drinking Water Guideline
NOTE: The arsenic standrad was changed from 0.05 mg/L to 0.01 mg/l in Spring 2001
(2) Method 1 GW-1 and GW-3 standards taken from the Massachusetts Contingency Plan 310 CMR 40.0000 (updated January 2015).
(3) The Method 1 GW-1 Standard for 1,4-dioxane was changed from 3µg/L to 0.3 µg/L in April 2014.
< = The resulting concentration was below the laboratory detection limit, shown.
BOLD The resulting concentration was greater than the laboratory detection limit.
BOLD (highlighted) The resulting concentration was greater than the Comparable Standard (exceedances shown are for the existing standards at the time of sampling)

Abbreviations:
SU Standard Units
µg/l micrograms per liter (parts per billion
mg/l milligrams per liter (parts per million
mS/cm milliSiemens per centimete
VOCs Volatile Organic Compounds
NS No Standard
ND Not Detected
NA Not Analayzed
B Compound detected in method blank

Table 1a
Groundwater Sampling Results, Monitoring Well MW-5D
Dighton Landfill
Dighton, Massachusetts
November 2000 through November 2018

Parameter	Units	Comparable Standard (1)	Method 1 GW-1 (2)	Method 1 GW-3 (2)	6/97	5/98	11/98	5/99	11/99	3/00 Resampling per DEP Request	11/00	3/01 Resampling per DEP Request	6/01	8/01 Resampling per DEP Request	12/01	5/02	11/02	5/03
Field Parameters																		
Temperature	degrees C	NS	NS	NS	10.5	10.9	11.6	11.2	12.5	NA	12.5	6.8	11.9	13.4	11.1	12.3	14.00	10.20
pH	unitless	6.5-8.5*	NS	NS	6.23	6.23	5.72	6.32	5.91	NA	5.76	6.41	5.73	6.01	5.74	8.03	5.97	6.28
Specific Conductivity	umhos/cm	NS	NS	NS	1410	1480	1480	1,520	1,690	NA	1,520	851	1,980	1,207	1.39 (mS/cm)	1.14 (mS/cm)	1.21 (mS/cm)	0.99 (mS/cm)
Dissolved Oxygen	mg/l	NS	NS	NS	0.17	0.17	4.88	1.87	11.8	NA	1.22	NA	1.56	NA	1.7	3.54	1.18	2.24
Inorganics																		
Alkalinity as $CaCO_3$	mg/l	NS	NS	NS	590	570	620	600	650	NA	550	520	490	NA	540	470	460	420
Chemical Oxygen Demand	mg/l	NS	NS	NS	130	380	220	160	210	NA	130	110	75	NA	120	95	83	68
Chloride	mg/l	250 *	NS	NS	120	80	100	ND	100	NA	88	76	71	NA	86	64	64	50
Total Cyanide	mg/l	0.2	0.2	0.03	ND	ND	ND	ND	ND	NA	NA	ND	ND	NA	ND	ND	ND	<0.01
Nitrate as Nitrogen	mg/l	10	NS	NS	0.20	ND	ND	ND	ND	NA	ND	ND	ND	NA	0.11	ND	ND	<0.01
Sulfate	mg/l	250 *	NS	NS	60	75	71	79	100	NA	77	120	61	NA	56	66	69	50
Total Dissolved Solids	mg/l	500 *	NS	NS	810	860	880	870	900	NA	740	860	810	NA	1000	630	650	540
Dissolved Metals:																		
Arsenic	mg/l	0.01	0.01	0.9	0.042	ND	ND	ND	ND	NA	0.035	ND	0.51	0.06	0.09	0.056	0.022	<0.05
Barium	mg/l	2	2	50	0.09	0.8	0.80	0.21	0.18	NA	ND	0.06	0.05	NA	0.08	0.05	0.04	0.07
Cadmium	mg/l	0.005	0.005	0.004	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	<0.005
Calcium	mg/l	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/l	0.1	0.1	0.3	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	<0.03
Copper	mg/l	1.3	NS	NS	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	<0.05
Iron	mg/l	0.3 *	NS	NS	33	23	26	27	37	NA	23	26	16	23	30	18	10	35
Lead	mg/l	0.015	0.015	0.01	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	mg/l	0.05 *	NS	NS	14	15	14	15	14	NA	14	13	14	12	12	11	9.5	9.8
Mercury	mg/l	0.002	0.002	0.02	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	<0.0005
Selenium	mg/l	0.05	0.05	0.1	0.017	0.008	0.008	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	<0.05
Silver	mg/l	0.1 *	0.1	0.007	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	<0.02
Sodium	mg/l	20 **	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/l	5 *	5	0.9	ND	0.34	0.34	0.06	ND	NA	0.027	ND	ND	ND	ND	ND	ND	0.07
SVOCs (EPA Method 8270C) /VOCs (EPA Method 522)																		
1,4-Dioxane	µg/l	0.3**	0.3 (3)	0.3 (3)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (EPA Method 8260B)																		
Benzene	µg/l	5	5	10,000	2.6	1.9	2.1	1.9	2.1	1.9	1.8	1.0	0.9	1.5	1.6	ND	0.7	ND
Chlorobenzene	µg/l	100	100	1,000	5.9	4.3	4.6	4.8	4.5	4.4	4.9	3.7	2.3	4.7	5.0	ND	2.2	ND
Chloroethane	µg/l	1,000 ***	NS	NS	ND	ND	4.4	4.7	4.4	4.0	ND	3.3	2.5	3.1	ND	ND	ND	ND
Ethyl Ether	µg/l	NS	NS	NS	29	ND	ND	ND	28	NA	ND	ND	12.0	18.0	18	ND	14	ND
cis-1,2,-Dichloroethene	µg/l	70	70	50,000	4.5	1.8	1.6	1.8	1.4	1.6	2.7	1.3	2.2	1.7	1.1	ND	2.6	1.0
Isopropylbenzene	µg/l	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	µg/l	20-40 *	70	50,000	ND	ND	ND	ND	ND	NA	5.7	ND	3.2	5.0	4.1	ND	2.8	ND
Tetrachloroethene	µg/l	5	5	30,000	ND	ND	ND	ND	ND	NA	ND	ND	0.6	ND	0.60	ND	ND	ND
Trichloroethene	µg/l	5	5	5,000	ND	ND	ND	ND	ND	NA	ND	ND	1.2	0.7	ND	ND	1.2	ND
Vinyl Chloride	µg/l	2	2	50,000	ND	ND	ND	3.2	2.0	NA	4.2	3.4	2.0	2.6	1.0	ND	1.9	ND

Parameter	11/26/03	5/27/04	11/10/04	12/3/04 VOC Resampling	5/19/05	6/8/06	11/30/06	5/24/07	8/8/07 Resampling Event	12/6/07	6/12/08	4/14/09	9/23/09	4/22/10	9/23/10	10/4/11	9/25/12	9/17/2013	11/13/2017	10/16/2018
Field Parameters																				
Temperature	11.93	10.20	11.40	NA	9.33	9.80	12.80	15.41	NA	9.50	13.60	9.49	12.06	9.81	12.17	11.42	11.80	9.68	10.06	11.70
pH	6.38	6.55	6.28	NA	5.96	6.40	6.29	6.63	NA	6.31	6.37	6.68	6.05	6.29	5.72	5.94	6.71	6.54	6.13	6.26
Specific Conductivity	0.858 (mS/cm)	0.404 (mS/cm)	0.931 (mS/cm)	NA	0.215 (mS/cm)	0.402 (mS/cm)	0.425 (mS/cm)	0.508 (mS/cm)	NA	0.507 (mS/cm)	0.438 (mS/cm)	0.445 (mS/cm)	0.503 (mS/cm)	0.273 (mS/cm)	0.514 (mS/cm)	0.468	0.416	0.436	0.478	0.686
Dissolved Oxygen	2.81	1.51	1.04	NA	6.78	5.67	1.99	9.79	NA	1.84	5.96	4.53	2.87	3.07	4.26	0.14	5.15	2.87	3.02	4.98
Inorganics																				
Alkalinity as $CaCO_3$	370	370	380	NA	300	270	250	290	NA	320	290	170	260	190	270	220	230	230	230	210
Chemical Oxygen Demand	58	70	90	NA	60	38	45	36	NA	39	39	NA	40	27	37	20	26	10	<10	14
Chloride	46	46	44	NA	33	31	24	32	NA	41	31	18	30	19	42	23	31	45	46	66
Total Cyanide	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	NA	<0.010	<0.010	<0.010	<0.010	<0.010	0.027	<0.010	0.014
Nitrate as Nitrogen	<0.1	<0.1	<0.1	NA	<0.1	<0.1	<0.1	0.15	NA	<0.1	<0.1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.089
Sulfate	51	42	38	NA	31	29	31	27	NA	29	24	14	20	20	31	20	22	27	8.9	18
Total Dissolved Solids	490	510	450	NA	420	350	320	420	NA	420	370	210	320	270	370	300	320	340	360	320
Dissolved Metals:																				
Arsenic	0.038	0.008	0.039	NA	0.033	0.017	0.022	0.032	0.008	<0.005	0.026	0.024	<0.0010	0.028	0.045	0.036	0.036	0.038	0.0041	0.038
Barium	0.05	0.03	0.04	NA	0.03	0.02	0.023	0.022	NA	0.017	0.024	0.018	0.018	0.021	0.0380	0.025	0.026	0.031	0.017	0.028
Cadmium	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.00050
Calcium	NA	NA	NA	NA	NA	NA	54	47	NA	63	54	41	56	47	64	50	48	51	45	52
Chromium	<0.01	<0.01	<0.01	NA	<0.01	<0.01	<0.01	<0.01	NA	<0.01	<0.01	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040	<0.0040	<0.0050
Copper	<0.01	<0.01	<0.01	NA	<0.01	<0.01	<0.01	<0.01	NA	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0050
Iron	15	2.8	16	NA	13	5.3	5.5	8.4	NA	0.55	11	7.50	18	9.6	21	12.0	14	17	<0.050	21
Lead	<0.01	<0.01	<0.01	NA	<0.01	<0.01	<0.01	<0.01	NA	<0.01	<0.01	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0010	<0.0025
Manganese	8.0	10.0	7.8	NA	6.6	5.8	5.5	4.2	NA	8.52	6.39	4.4	6.2	5.1	7.7	5.8	6.0	7.1	5.8	7.1
Mercury	<0.0005	<0.0005	<0.0002	NA	<0.0002	<0.0002	<0.0002	<0.0002	NA	<0.0002	<0.0002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Selenium	<0.01	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.01	NA	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.015	<0.025	<0.0025
Silver	<0.007	<0.007	<0.007	NA	<0.007	<0.007	<0.007	<0.007	NA	<0.007	<0.007	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0030	<0.0060	<0.0010
Sodium	NA	NA	NA	NA	NA	NA	37	25	NA	47	36	22	34	24	40	30	28	32	28	36
Zinc	<0.05	<0.05	<0.05	NA	<0.05	<0.05	<0.05	<0.05	NA	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.010	<0.010	<0.020
SVOCs (EPA Method 8270C) /VOCs (EPA Method 522)																				
1,4-Dioxane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<3.0	15	3.1	4.6	<3.0	<5.0	2.9	1.8	2.5
VOCs (EPA Method 8260B)																				
Benzene	0.7	0.64	0.7	ND	ND	ND	ND	ND	NA	ND	0.58	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0
Chlorobenzene	2.5	1.8	2.5	1.7	1.7	0.98	1.3	1.0	NA	1.4	2.1	ND	3.1	ND	3.8	1.9	2.3	3.3	2.6	2.5
Chloroethane	ND	1.7	ND	1.3	ND	ND	ND	1.1	NA	1.1	ND	ND	ND	ND	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
Ethyl Ether	7.0	8.6	7.2	5.6	3.9	3.4	ND	4.9	NA	7.1	4.4	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0
cis-1,2,-Dichloroethene	3.0	2.5	ND	1.7	0.89	ND	2.5	3.2	NA	3.1	1.6	ND	4.2	1.8	3.5	2.0	1.5	1.8	1.2	2.1
Isopropylbenzene	ND	ND	2.9	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0
Methyl tert-butyl ether	1.4	ND	ND	1.3	ND	ND	ND	1.2	NA	1.3	1.0	ND	ND	ND	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	ND	<1.0	<1.0
Trichloroethene	0.61	0.88	0.52	0.62	ND	0.69	ND	0.77	NA	0.71	ND	ND	ND	ND	<1.0	<1.0	<1.0	ND	<1.0	<1.0
Vinyl Chloride	6.4	4.3	2.9	2.4	1.9	4.3	3.8	2.4	1.9	3.8	2.6	2.5	14	5	9.7	4.3	3.8	6.6	2.6	3.8

\\wse03.local\WSE\Projects\MA_PeabodyOldServer\Dighton\LF Mon FY19 2180521\Reports\GWSW\Appendix A-Historical Data\[Dighton LF Historic GW thru 1118.xls]MW-'-Historical Data\[Dighton LF Historic GW thru 1118.xls]MW-'

Notes: (1) The Standard is from "Drinking Water Standards & Guidelines for Chemicals in Massachusetts Drinking Water," dated Spring 2017.
MMCL Massachusetts Maximum Contaminant Level concentration
* SMCL Secondary Maximum Contaminant Level concentration
** ORSG Office of Research and Standard Drinking Water Guideline
NOTE: The arsenic standrad was changed from 0.05 mg/L to 0.01 mg/l in Spring 2001
(2) Method 1 GW-1 and GW-3 standards taken from the Massachusetts Contingency Plan 310 CMR 40.0000 (updated January 2015).
(3) The Method 1 GW-1 Standard for 1,4-dioxane was changed from 3µg/L to 0.3 µg/L in April 2014.
< = The resulting concentration was below the laboratory detection limit, shown.
BOLD The resulting concentration was greater than the laboratory detection limit.
BOLD The resulting concentration was greater than the Comparable Standard (exceedances shown are for the existing standards at the time of sampling)

Abbreviations:
SU Standard Units
µg/l micrograms per liter (parts per billion)
mg/l milligrams per liter (parts per million)
mS/cm milliSiemens per centimeter
VOCs Volatile Organic Compounds
NS No Standard
ND Not Detected
NA Not Analayzed
B Compound detected in method blank

Table 1a
Groundwater Sampling Results, Monitoring Well MW-6S
Dighton Landfill
Dighton, Massachusetts
November 2000 through November 2018

Parameter	Units	Comparable Standard (1)	Method 1 GW-1 (2)	Method 1 GW-3 (2)	6/97	5/98	11/98	5/99	11/99	11/00	6/01	12/01	5/02	11/02	5/03	11/26/03
Field Parameters																
Temperature	degrees C	NS	NS	NS	12.8	11.1	9.9	9.9	10.9	11.8	10.6	9.3	11.3	12.30	9.30	9.80
pH	unitless	6.5-8.5*	NS	NS	6.51	7.68	7.04	6.73	5.81	5.15	6.25	6.75	7.64	7.05	9.05	6.62
Specific Conductivity	umhos/cm	NS	NS	NS	110	97	111	97	112	164	176	0.130 (mS/cm)	0.085 (mS/cm)	0.108 (mS/cm)	0.113 (mS/cm)	0.076 (mS/cm)
Dissolved Oxygen	mg/l	NS	NS	NS	2.71	5.18	5.23	4.09	3.79	3.17	4.71	6.67	6.75	9.07	0.04	4.89
Inorganics																
Alkalinity as $CaCO_3$	mg/l	NS	NS	NS	20	11	15	11	14	28	16	13	10	14	15	16
Chemical Oxygen Demand	mg/l	NS	NS	NS	47	ND	43	26	49	ND	24	200	ND	ND	4.3	27
Chloride	mg/l	250 *	NS	NS	8.2	7.8	8	ND	11	10	7.9	9.9	5.7	7.0	7.1	5.6
Total Cyanide	mg/l	0.2	0.2	0.03	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	<0.01	<0.005
Nitrate as Nitrogen	mg/l	10	NS	NS	0.15	0.44	ND	ND	ND	ND	0.14	ND	ND	ND	0.04	<0.1
Sulfate	mg/l	250 *	NS	NS	14	14	16	13	21	18	16	18	13	20	17	15
Total Dissolved Solids	mg/l	500 *	NS	NS	59	65	46	46	65	30	71	200	56	120	64	45
Dissolved Metals:																
Arsenic	mg/l	0.01	0.01	0.9	ND	ND	ND	ND	ND	ND	ND	0.006	ND	ND	<0.05	<0.01
Barium	mg/l	2	2	50	ND	0.2	0.13	0.12	0.12	ND	ND	ND	ND	ND	0.007	<0.01
Cadmium	mg/l	0.005	0.005	0.004	0.14	0.01	ND	ND	0.01	ND	ND	ND	ND	ND	<0.005	<0.005
Calcium	mg/l	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/l	0.1	0.1	0.3	ND	ND	ND	ND	ND	NA	NA	ND	ND	ND	<0.03	<0.01
Copper	mg/l	1.3	NS	NS	ND	0.01	ND	ND	ND	ND	NA	ND	ND	ND	<0.05	<0.01
Iron	mg/l	0.3 *	NS	NS	0.3	0.16	0.14	0.24	0.3	0.97	ND	7.6	0.05	ND	0.33	<0.05
Lead	mg/l	0.015	0.015	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.01	<0.01
Manganese	mg/l	0.05 *	NS	NS	0.18	0.07	0.08	0.11	0.05	0.49	0.01	0.48	0.01	ND	<0.02	0.02
Mercury	mg/l	0.002	0.002	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005	<0.0005
Selenium	mg/l	0.05	0.05	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.05	<0.01
Silver	mg/l	0.1 *	0.1	0.007	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.02	<0.007
Sodium	mg/l	20 **	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/l	5 *	5	0.9	0.1	0.17	0.06	0.24	0.06	0.026	0.026	0.026	ND	ND	<0.02	<0.05
SVOCs (EPA Method 8270C) /VOCs (EPA Method 522)																
1,4-Dioxane	µg/l	0.3**	0.3 (3)	50,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (EPA Method 8260B)	µg/l	varies	varies	varies	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Parameter	5/27/04	11/10/04	5/19/05	6/8/06	11/30/06	5/24/07	12/6/07	2/14/08 Resampling Event	6/12/08	4/14/09	9/23/09	4/22/10	9/23/10	10/4/11	9/25/12	9/17/2013	11/13/2017	10/16/2018
Field Parameters																		
Temperature	8.90	10.90	9.62	11.20	14.30	12.63	4.80	NA	15.50	6.48	16.37	9.81	Dry	15.44	15.24	13.89	13.20	13.90
pH	6.80	6.58	5.46	8.85	9.16	9.66	8.91	NA	6.31	6.51	5.43	5.28	Dry	5.52	5.78	7.58	5.92	5.91
Specific Conductivity	0.088 (mS/cm)	0.101 (mS/cm)	0.074 (mS/cm)	0.033 (mS/cm)	0.052 (mS/cm)	0.09 (mS/cm)	0.078 (mS/cm)	NA	0.67 (mS/cm)	0.071 (mS/cm)	0.109 (mS/cm)	0.032 (mS/cm)	Dry	0.078	0.058	0.076	0.074	0.065
Dissolved Oxygen	4.70	5.92	9.78	7.68	5.18	9.08	9.27	NA	7.29	7.50	2.57	5.52	Dry	4.59	5.32	3.42	3.89	6.93
Inorganics																		
Alkalinity as $CaCO_3$	14	13	11	6.6	5.4	13	18	NA	14	7.3	16	8.2	Dry	11.0	13	10	7.6	<5.0
Chemical Oxygen Demand	<20	<20	<20	<20	<20	160	180	NA	<20	NA	38	33	Dry	<20	<20	<10	18	<10
Chloride	5.6	5.8	5.2	2.7	4.4	5.4	6.8	NA	6.4	4.6	5.8	4.3	Dry	5.5	5.6	7.0	12	7.6
Total Cyanide	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	NA	<0.010	<0.010	Dry	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrate as Nitrogen	<0.1	<0.1	<0.1	<0.1	<0.1	0.13	<0.1	NA	<0.1	<0.050	<0.050	<0.050	Dry	<0.050	<0.050	<0.050	<0.050	<0.050
Sulfate	15	15	15	10	<10	24	29	NA	17	10	16	13	Dry	13	14	16	13	8.7
Total Dissolved Solids	52	53	89	54	48	87	70	NA	66	20	80	49	Dry	52	65	99	42	230
Dissolved Metals:																		
Arsenic	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.010	<0.010	<0.010	Dry	<0.010	<0.0010	<0.010	<0.0010	0.0049
Barium	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	<0.01	0.011	<0.020	<0.010	Dry	<0.010	0.018	0.0049	0.0039	0.053
Cadmium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.114	0.026	<0.005	<0.0010	<0.0010	<0.0010	Dry	<0.0010	<0.0010	<0.0010	0.023	0.0039
Calcium	NA	NA	NA	NA	3.5	8.2	7.8	NA	20	5.3	8	6.0	Dry	7.0	5.9	7.7	6.3	8.0
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	<0.01	<0.0050	<0.0050	<0.0050	Dry	<0.0050	<0.0050	<0.0040	<0.0040	0.0077
Copper	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	<0.01	<0.010	<0.010	<0.010	Dry	<0.010	<0.010	<0.010	<0.010	0.013
Iron	2.8	0.09	0.22	0.09	<0.05	4.1	3.4	NA	0.93	0.27	1.4	0.19	Dry	<0.10	2.4	5.4	<0.050	14
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	<0.01	<0.0050	<0.0050	<0.0050	Dry	<0.0050	<0.0050	<0.0050	<0.0010	0.011
Manganese	0.10	0.01	0.01	<0.01	0.016	0.041	0.16	NA	0.089	0.018	0.3	0.015	Dry	0.140	0.28	0.17	0.064	0.19
Mercury	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NA	<0.0002	<0.00020	<0.00020	<0.00020	Dry	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	NA	<0.01	<0.010	<0.010	<0.010	Dry	<0.010	<0.010	<0.015	<0.025	<0.0025
Silver	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	NA	<0.007	<0.0050	<0.0050	<0.0050	Dry	<0.0050	<0.0050	<0.0030	<0.0060	<0.0010
Sodium	NA	NA	NA	NA	3.7	4.3	7.7	NA	8.5	5	7.2	4.5	Dry	6.9	6.2	6.4	6.8	7.9
Zinc	0.06	0.09	<0.05	<0.05	<0.05	<0.05	0.544	NA	<0.05	<0.050	<0.050	<0.050	Dry	<0.050	<0.050	0.046	0.041	0.048
SVOCs (EPA Method 8270C) /VOCs (EPA Method 522)																		
1,4-Dioxane	NA	NA	NA	NA	NA	NA	NA	NA	NA	<3.0	<3.0	<3.0	Dry	<3.0	<5.0	<3.2	<0.20	1.9
VOCs (EPA Method 8260B)	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	Dry	ND	ND	ND	ND	ND

\\wse03.local\WSE\Projects\MA_PeabodyOldServer\Dighton\LF Mon FY19 2180521\Reports\GWSW\Appendix A-Historical Data\[Dighton LF Historic GW thru 1118.xls]MW

Notes: (1) The Standard is from "Drinking Water Standards & Guidelines for Chemicals in Massachusetts Drinking Water," dated Spring 2017.
MMCL Massachusetts Maximum Contaminant Level concentration
* SMCL Secondary Maximum Contaminant Level concentration
** ORSG Office of Research and Standard Drinking Water Guideline
NOTE: The arsenic standrad was changed from 0.05 mg/L to 0.01 mg/l in Spring 2001
(2) Method 1 GW-1 and GW-3 standards taken from the Massachusetts Contingency Plan 310 CMR 40.0000 (updated January 2015).
(3) The Method 1 GW-1 Standard for 1,4-dioxane was changed from 3µg/L to 0.3 µg/L in April 2014.
< = The resulting concentration was below the laboratory detection limit, shown.
BOLD The resulting concentration was greater than the laboratory detection limit.
BOLD The resulting concentration was greater than the Comparable Standard (exceedances shown are for the existing standards at the time of sampling)

Abbreviations:
SU Standard Units
µg/l micrograms per liter (parts per billion
mg/l milligrams per liter (parts per million
mS/cm milliSiemens per centimete
VOCs Volatile Organic Compounds
NS No Standard
ND Not Detected
NA Not Analyzed
B Compound detected in method blank

Table 1a
Groundwater Sampling Results, Monitoring Well MW-6D
Dighton Landfill
Dighton, Massachusetts
November 2000 through November 2018

Parameter	Units	Comparable Standard (1)	Method 1 GW-1 (2)	Method 1 GW-3 (2)	6/97	5/98	11/98	5/99	11/99	11/00	6/01	12/01	5/02	11/02	5/03	11/26/03
Field Parameters																
Temperature	degrees C	NS	NS	NS	10.6	10.3	10.1	9.8	10.8	10.8	10	9.5	10.2	12.80	10.50	10.08
pH	unitless	6.5-8.5*	NS	NS	10.36	10.35	7.55	9.96	7.34	8.27	10.16	7.32	8.09	7.97	9.61	10.33
Specific Conductivity	umhos/cm	NS	NS	NS	272	389	238	270	230	259	809	0.238 (mS/cm)	0.236 (mS/cm)	0.259 (mS/cm)	0.962 (mS/cm)	0.298 (mS/cm)
Dissolved Oxygen	mg/l	NS	NS	NS	3.94	1.41	0.46	2.43	4.81	1.33	1.33	2.68	2.39	4.38	0.40	1.91
Inorganics																
Alkalinity as $CaCO_3$	mg/l	NS	NS	NS	60	75	63	48	36	44	100	74	54	69	270	64
Chemical Oxygen Demand	mg/l	NS	NS	NS	ND	450	260	21	160	150	29	400	410	ND	<4.0	210
Chloride	mg/l	250 *	NS	NS	13	11	10	ND	10	12	12	12	12	11.0	9.1	9.7
Total Cyanide	mg/l	0.2	0.2	0.03	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	<0.01	<0.005
Nitrate as Nitrogen	mg/l	10	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.18	<0.01	<0.1
Sulfate	mg/l	250 *	NS	NS	45	40	43	45	36	53	40	43	45	46	19	52
Total Dissolved Solids	mg/l	500 *	NS	NS	160	190	130	130	130	130	200	290	140	210	320	140
Dissolved Metals:																
Arsenic	mg/l	0.01	0.01	0.9	ND	ND	ND	ND	ND	ND	ND	0.007	0.056	ND	<0.05	<0.01
Barium	mg/l	2	2	50	0.04	0.36	0.25	0.21	0.2	ND	0.02	0.01	0.05	0.01	0.032	<0.01
Cadmium	mg/l	0.005	0.005	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.005	<0.005
Calcium	mg/l	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/l	0.1	0.1	0.3	ND	ND	ND	ND	ND	NA	NA	ND	ND	ND	<0.03	<0.01
Copper	mg/l	1.3	NS	NS	ND	0.01	ND	ND	ND	ND	ND	ND	ND	ND	<0.05	<0.01
Iron	mg/l	0.3 *	NS	NS	ND	0.31	0.13	ND	1.0	0.16	ND	1.4	19	ND	0.19	<0.05
Lead	mg/l	0.015	0.015	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.01	<0.01
Manganese	mg/l	0.05 *	NS	NS	ND	0.29	0.75	0.03	1.6	0.17	ND	1.5	11	0.34	<0.02	<0.01
Mercury	mg/l	0.002	0.002	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.0005	<0.0005
Selenium	mg/l	0.05	0.05	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.05	<0.01
Silver	mg/l	0.1 *	0.1	0.007	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.02	<0.007
Sodium	mg/l	20 **	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/l	5 *	5	0.9	ND	0.23	0.05	ND	ND	ND	ND	ND	ND	ND	<0.02	<0.05
SVOCs (EPA Method 8270C) /VOCs (EPA Method 522)																
1,4-Dioxane	µg/l	0.3**	0.3 (3)	50,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (EPA Method 8260B)																
Carbon Disulfide	µg/l	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Parameter	5/27/04	11/10/04	5/19/05	6/8/06	11/30/06	5/24/07	12/6/07	6/12/08	4/14/09	9/23/09	4/22/10	9/23/10	10/4/11	9/25/12	9/17/2013	11/13/2017	10/16/2018
Field Parameters																	
Temperature	9.20	9.90	9.89	9.60	14.80	17.90	8.50	11.60	9.30	11.93	10.81	11.12	10.85	10.94	10.16	9.14	10.80
pH	11.28	11.42	11.89	11.37	10.96	11.28	9.25	8.27	10.01	5.41	6.79	5.30	9.93	5.95	6.41	6.21	5.94
Specific Conductivity	1.3 (mS/cm)	0.629 (mS/cm)	0.907 (mS/cm)	0.507 (mS/cm)	0.34 (mS/cm)	0.38 (mS/cm)	0.168 (mS/cm)	0.156 (mS/cm)	0.249 (mS/cm)	0.184 (mS/cm)	0.398 (mS/cm)	0.161	0.179	0.154	0.200	0.187	0.216
Dissolved Oxygen	3.91	1.80	2.87	2.44	2.97	8.75	1.87	5.84	7.33	6.11	9.12	3.51	7.38	5.64	12.08	6.90	3.22
Inorganics																	
Alkalinity as $CaCO_3$	270	140	150	170	140	140	54	58	44	49	49	49	45	43	41	45	45
Chemical Oxygen Demand	58	180	110	110	93	<20	<20	41	NA	<20	65	<20	<20	<20	<10	<10	<10
Chloride	6.9	8.6	5.7	8.5	8.1	8.7	12	12	12	12	12	12	12	12	13	13	13
Total Cyanide	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrate as Nitrogen	<0.1	<0.1	0.38	<0.1	<0.1	<0.1	<0.1	<0.1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Sulfate	<10	29	21	30	28	32	47	48	47	48	51	53	42	46	46	43	43
Total Dissolved Solids	320	160	170	180	190	220	140	170	120	160	180	170	150	160	140	190	160
Dissolved Metals:																	
Arsenic	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0010	0.0013	<0.0030
Barium	0.03	<0.01	<0.01	<0.01	<0.01	0.013	<0.01	<0.01	0.019	<0.020	0.022	0.020	0.014	0.014	0.018	0.016	0.021
Cadmium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.00050
Calcium	NA	NA	NA	NA	41	56	34	30	27	27	29	29	27	22	22	26	25
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0040	<0.0040	<0.0050
Copper	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0050
Iron	0.19	<0.05	<0.05	<0.05	0.65	<0.05	<0.05	<0.05	0.62	0.96	0.39	0.68	0.84	1.10	1.3	0.099	1.3
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0018	<0.0025
Manganese	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	0.067	0.6	0.8	0.65	0.72	0.67	0.80	1.1	0.5	1.1
Mercury	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.015	<0.025	<0.0025
Silver	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0030	<0.0060	<0.0010
Sodium	NA	NA	NA	NA	14	12	13	11	13	13	13	14	13	10	11	11	12
Zinc	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.010	0.053	<0.020
SVOCs (EPA Method 8270C) /VOCs (EPA Method 522)																	
1,4-Dioxane	NA	NA	NA	NA	NA	NA	NA	NA	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<1.6	<0.20	<0.20
VOCs (EPA Method 8260B)																	
Carbon Disulfide	ND	ND	ND	17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

\\wse03.local\WSE\Projects\MA_PeabodyOldServer\Dighton\LF Mon FY19 2180521\Reports\GWSW\Appendix A-Historical Data\[Dighton LF Historic GW thru 1118.xls]MW-1

Notes: (1) The Standard is from "Drinking Water Standards & Guidelines for Chemicals in Massachusetts Drinking Water," dated Spring 2017.
MMCL Massachusetts Maximum Contaminant Level concentration
* SMCL Secondary Maximum Contaminant Level concentration
** ORSG Office of Research and Standard Drinking Water Guideline
NOTE: The arsenic standrad was changed from 0.05 mg/L to 0.01 mg/l in Spring 2001
(2) Method 1 GW-1 and GW-3 standards taken from the Massachusetts Contingency Plan 310 CMR 40.0000 (updated January 2015).
(3) The Method 1 GW-1 Standard for 1,4-dioxane was changed from 3 µg/L to 0.3 µg/L in April 2014.
< = The resulting concentration was below the laboratory detection limit, shown.
BOLD The resulting concentration was greater than the laboratory detection limit.
BOLD The resulting concentration was greater than the Comparable Standard (exceedances shown are for the existing standards at the time of sampling)

Abbreviations:
SU Standard Units
µg/l micrograms per liter (parts per billion
mg/l milligrams per liter (parts per million
mS/cm milliSiemens per centimete
VOCs Volatile Organic Compounds
NS No Standard
ND Not Detected
NA Not Analayzed
B Compound detected in method blank

Table 1a
Groundwater Sampling Results, Monitoring Well MW-7S
Dighton Landfill
Dighton, Massachusetts
November 2000 through November 2018

Parameter	Units	Comparable Standard (1)	Method 1 GW-1 (2)	Method 1 GW-3 (2)	11/00	6/01	8/01 Resampling Event	12/01	5/02	11/02	5/03	11/26/03	5/27/04	11/10/04
Field Parameters														
Temperature	degrees C	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	10.40	9.50	11.30
pH	unitless	6.5-8.5*	NS	NS	NA	NA	NA	NA	NA	NA	NA	6.54	6.53	6.37
Specific Conductivity	umhos/cm	mS/cm	NS	NS	NA	NA	NA	NA	NA	NA	NA	1.104	1,100	1.1
Dissolved Oxygen	mg/l	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	3.10	2.55	1.56
Inorganics							NA							
Alkalinity as $CaCO_3$	mg/l	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chemical Oxygen Demand	mg/l	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	mg/l	250 *	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Cyanide	mg/l	0.2	0.2	0.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate as Nitrogen	mg/l	10	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	mg/l	250 *	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids	mg/l	500 *	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Metals:							NA							
Arsenic	mg/l	0.01	0.01	0.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	mg/l	2	2	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/l	0.005	0.005	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	mg/l	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/l	0.1	0.1	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/l	1.3	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	mg/l	0.3 *	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/l	0.015	0.015	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/l	0.05 *	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	mg/l	0.002	0.002	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/l	0.05	0.05	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	mg/l	0.1 *	0.1	0.007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/l	20 **	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/l	5 *	5	0.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs (EPA Method 8270C) /VOCs (EPA Method 522)														
1,4-Dioxane	µg/l	0.3**	0.3 (3)	50,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (EPA Method 8260B)														
Benzene	µg/l	5	5	10,000	2.5	2.3	2.3	2.1	1.9	1.8	ND	1.2	1.3	1.0
Chlorobenzene	µg/l	100	100	1,000	6.1	6.0	6.0	6.2	4.3	5.2	5.0	3.5	4.0	3.5
Chloroethane	µg/l	1,000 ***	NS	NS	ND	4.1	4.2	ND	3.2	ND	ND	ND	2.6	ND
Ethyl Ether	µg/l	NS	NS	NS	ND	26	26	22	20	20	ND	11	10	7.7
cis-1,2,-Dichloroethene	µg/l	70	70	50,000	ND	1.4	1.3	1.2	0.95	0.93	ND	1.1	1.8	ND
Isopropylbenzene	µg/l	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	µg/l	20-40 *	70	50,000	6.8	6.6	7.1	4.9	4.8	4.4	2.0	2.1	ND	ND
Tetrachloroethene	µg/l	5	5	30,000	ND	0.65	0.74	1.4	0.93	0.89	ND	0.61	ND	ND
Trichloroethene	µg/l	5	5	5,000	ND	0.94	1.0	1.2	1.1	1.1	ND	0.87	0.82	0.74
Vinyl Chloride	µg/l	2	2	50,000	5.8	3.8	2.9	2.0	1.4	ND	ND	2.1	4.2	3.4

Parameter	12/3/04 Resampling Event	5/19/05	6/8/06	11/30/06	5/24/07	8/9/07 Resampling Event	12/6/07	6/12/08	4/14/09	9/23/09	4/22/10	9/23/10	10/4/11	9/25/12	9/17/13	11/13/17	10/16/18
Field Parameters																	
Temperature	NA	10.60	9.40	12.40	11.38	NA	7.90	12.90	8.61	13.55	9.12	13.58	12.93	13.54	13.56	10.09	13.00
pH	NA	6.12	6.39	6.47	6.39	NA	6.68	6.58	6.64	6.14	6.31	5.66	5.78	6.76	6.56	6.87	6.17
Specific Conductivity	NA	0.963	0.614	0.586	0.212	NA	0.538	0.493	0.764	0.569	0.398	0.555	31.7	0.502	0.562	0.531	0.445
Dissolved Oxygen	NA	2.22	0.99	1.19	4.87	NA	2.04	5.89	1.59	1.60	1.88	1.67	3.22	2.38	3.50	3.03	2.68
Inorganics																	
Alkalinity as $CaCO_3$	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	280	280	260	260	240	220
Chemical Oxygen Demand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	44	39	35	<10	11	15
Chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	32	31	30	32	38	44
Total Cyanide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrate as Nitrogen	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.089	<0.050	<0.050	<0.050	1.3	0.076
Sulfate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16	14	14	14	3.8	4.8
Total Dissolved Solids	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	340	340	330	300	280	290
Dissolved Metals:																	
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.059	0.05	0.046	0.055	0.0046	0.089
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.048	0.046	0.039	0.044	0.048	0.260
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	0.0011
Calcium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	56	59	50	47	45	66
Chromium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0050	<0.0050	<0.0050	<0.0040	<0.0040	0.030
Copper	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.010	<0.010	<0.010	<0.010	<0.010	0.071
Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20	20	17	18	<0.050	58
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.0010	0.043
Manganese	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.0	6.9	6.4	6.6	5.7	8.0
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Selenium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.010	<0.010	<0.010	<0.015	<0.025	0.0045
Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0050	<0.0050	<0.0050	<0.0030	<0.0060	<0.0010
Sodium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35	34	27	28	26	30
Zinc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.050	<0.050	<0.050	<0.010	0.011	0.091
SVOCs (EPA Method 8270C) /VOCs (EPA Method 522)																	
1,4-Dioxane	NA	NA	NA	NA	NA	NA	NA	NA	<3.0	<3.0	4.0	4.3	3.9	3.3	2.3	1.5	4.5
VOCs (EPA Method 8260B)																	
Benzene	1.2	0.98	0.84	0.79	0.83	NA	0.79	0.74	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0
Chlorobenzene	3.8	3.4	3.1	3	3.5	NA	3.4	2.9	2.8	3.0	ND	2.9	2.9	2.8	2.6	2.1	1.8
Chloroethane	2.5	ND	ND	ND	1.4	NA	1.3	ND	ND	ND	ND	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
Ethyl Ether	9.2	7.6	5.4	4.9	5.9	NA	4.8	4.8	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0
cis-1,2,-Dichloroethene	1.5	1.1	1.3	1.6	2	NA	1.7	1.6	1.6	2.2	2.8	2.4	2.5	1.7	1.2	1.0	1.1
Isopropylbenzene	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0
Methyl tert-butyl ether	2.1	ND	ND	1.4	1.7	NA	ND	1.1	ND	ND	ND	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0
Tetrachloroethene	1.2	0.59	ND	ND	ND	NA	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	0.98	0.76	0.66	0.66	0.72	NA	0.52	0.62	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl Chloride	3.9	2.3	3.4	5.7	5.8	3.1	6.6	3.5	2.7	5.8	8.9	9.0	4.6	3.5	2.4	<1.0	<1.0

\\wse03.local\WSE\Projects\MA_PeabodyOldServer\Dighton\LF Mon FY19 2180521\Reports\GWSW\Appendix A-Historical Data\[Dighton LF Historic GW thru 1118.xls]MW-1

Notes: (1) The Standard is from "Drinking Water Standards & Guidelines for Chemicals in Massachusetts Drinking Water." dated Spring 2017.
MMCL Massachusetts Maximum Contaminant Level concentration
* SMCL Secondary Maximum Contaminant Level concentration
** ORSG Office of Research and Standard Drinking Water Guideline
NOTE: The arsenic standrad was changed from 0.05 mg/L to 0.01 mg/l in Spring 2001
(2) Method 1 GW-1 and GW-3 standards taken from the Massachusetts Contingency Plan 310 CMR 40.0000 (updated January 2015).
(3) The Method 1 GW-1 Standard for 1,4-dioxane was changed from 3 µg/L to 0.3 µg/L in April 2014.
< = The resulting concentration was below the laboratory detection limit, shown.
BOLD The resulting concentration was greater than the laboratory detection limit.
BOLD The resulting concentration was greater than the Comparable Standard (exceedances shown are for the existing standards at the time of sampling)

Abbreviations:
SU Standard Units
µg/l micrograms per liter (parts per billion)
mg/l milligrams per liter (parts per million)
mS/cm milliSiemens per centimeter
VOCs Volatile Organic Compounds
NS No Standard
ND Not Detected
NA Not Analyzed
B Compound detected in method blank
J Estimated concentration

Table 1a
Groundwater Sampling Results, Monitoring Well MW-7D
Dighton Landfill
Dighton, Massachusetts
November 2000 through November 2018

Parameter	Units	Comparable Standard (1)	Method 1 GW-1 (2)	Method 1 GW-3 (2)	11/00	6/01	12/01	5/02	11/02	5/03	11/26/03	5/27/04	11/10/04	12/3/04 Resampling Event	5/19/05	6/8/06	11/30/06	5/24/07	8/9/07 Resampling Event	12/6/07	6/12/08	4/14/09	9/23/09	4/22/10	9/23/10	10/4/11	9/25/12	9/17/2013	11/13/2017	10/16/2018	DUP-1 10/16/2018
Field Parameters																															
Temperature	degrees C	NS	NS	NS	NA	NA	NA	NA	NA	NA	9.78	10.60	10.40	NA	9.74	9.80	11.60	12.72	NA	6.30	12.20	10.42	11.31	10.28	11.48	11.23	11.41	11.55	10.20	11.10	-
pH	unitless	6.5-8.5*	NS	NS	NA	NA	NA	NA	NA	NA	6.50	6.45	6.28	NA	6.02	6.35	6.39	6.37	NA	6.51	6.33	6.49	5.58	6.28	4.99	5.74	6.49	6.83	6.38	6.24	-
Specific Conductivity	umhos/cm	mS/cm	NS	NS	NA	NA	NA	NA	NA	NA	0.940	869	0.948	NA	0.904	0.564	0.558	0.541	NA	0.480	0.461	0.755	0.517	0.389	0.491	0.561	0.429	0.414	0.602	0.550	-
Dissolved Oxygen	mg/l	NS	NS	NS	NA	NA	NA	NA	NA	NA	4.24	2.42	1.51	NA	4.65	3.72	1.91	5.92	NA	2.72	6.15	2.87	2.08	2.58	2.74	2.96	2.97	2.80	3.07	3.51	-
Inorganics																															
Alkalinity as $CaCO_3$	mg/l	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	260	260	240	250	230	220	220
Chemical Oxygen Demand	mg/l	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	26	<20	37	11	14	16	13
Chloride	mg/l	250 *	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	38	34	36	37	39	44	45
Total Cyanide	mg/l	0.2	0.2	0.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.59	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrate as Nitrogen	mg/l	10	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Sulfate	mg/l	250 *	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	25	21	22	20	11	12	12
Total Dissolved Solids	mg/l	500 *	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	360	340	350	320	290	310	300
Dissolved Metals:																															
Arsenic	mg/l	0.01	0.01	0.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.016	0.016	0.012	<0.010	0.0078	0.015	0.019
Barium	mg/l	2	2	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.049	0.032	0.034	0.033	0.020	0.024	0.031
Cadmium	mg/l	0.005	0.005	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0010	<0.0010	<0.0010	0.0047	<0.0020	<0.00050	<0.00050
Calcium	mg/l	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	61	62	53	51	46	50	62
Chromium	mg/l	0.1	0.1	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0050	<0.0050	<0.0050	<0.0040	<0.0040	<0.0050	<0.0050
Copper	mg/l	1.3	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0050	<0.0050
Iron	mg/l	0.3 *	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.7	5.0	4.7	4.0	<0.050	4.5	5.8
Lead	mg/l	0.015	0.015	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0050	<0.0050	<0.0050	0.049	<0.0010	<0.0025	<0.0025
Manganese	mg/l	0.05 *	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.0	5.2	4.6	4.9	4.5	4.7	6.0
Mercury	mg/l	0.002	0.002	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Selenium	mg/l	0.05	0.05	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.010	<0.010	<0.010	0.18	<0.025	<0.0025	<0.0025
Silver	mg/l	0.1 *	0.1	0.007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0050	<0.0050	<0.0050	<0.0030	<0.0060	<0.0010	<0.0010
Sodium	mg/l	20 **	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	43	41	34	35	29	28	35
Zinc	mg/l	5 *	5	0.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.050	<0.050	<0.050	<0.050	<0.010	<0.020	<0.020
SVOCs (EPA Method 8270C) /VOCs (EPA Method 522)																															
1,4-Dioxane	µg/l	0.3**	0.3 (3)	50,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<3.0	<3.0	7.5	8.4	11	6.8	5.5	3.0	4.0	<0.20
VOCs (EPA Method 8260B)																															
Benzene	µg/l	5	5	10,000	ND	1.0	0.56	0.86	0.69	ND	0.58	ND	0.53	ND	0.52	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	µg/l	100	100	1,000	ND	2.2	1.7	1.9	2.1	3.0	1.7	1.1	1.7	1.3	1.9	1.5	1.4	1.6	NA	ND	0.63	1.3	1.2	2.8	1.1	1.2	1.1	1.2	1.1	<1.0	<1.0
Chloroethane	µg/l	1,000 ***	NS	NS	ND	3.7	ND	2.8	ND	ND	ND	2.3	ND	2.1	ND	ND	1.3	1.5	NA	ND	ND	ND	ND	ND	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethyl Ether	µg/l	NS	NS	NS	ND	22	14	17	17	ND	11	10	8.7	9.4	6.9	5.9	6.4	7.3	NA	6.7	6.8	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0
cis-1,2,-Dichloroethene	µg/l	70	70	50,000	ND	1.8	1.7	1.8	1.9	1.0	1.8	2.3	ND	2.0	1.6	1.9	2.1	2.1	NA	1.5	2.0	2.3	2.7	ND	2.5	2.7	2.4	2.1	1.9	1.8	1.8
Isopropylbenzene	µg/l	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0
Methyl tert-butyl ether	µg/l	20-40 *	70	50,000	3.6	5.4	3.2	3.9	3.8	2.0	2.2	ND	ND	2.2	ND	ND	1.8	1.9	NA	1.4	1.6	1.2	1.4	1.1	1.3	1.1	<5.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	µg/l	5	5	30,000	ND	1.6	ND	0.98	1.2	ND	0.81	ND	0.66	ND	0.62	ND	ND	ND	NA	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	µg/l	5	5	5,000	ND	1.3	1.2	1.3	1.4	ND	1.1	1.1	1.1	0.9	1.1	1.0	1.0	0.96	NA	ND	0.56	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl Chloride	µg/l	2	2	50,000	2.3	1.9	1.2	1.5	ND	ND	1.5	ND	2.0	2.0	1.3	2.2	2.6	2.6	ND	ND	1.2	1.7	2.2	3.5	3.5	2.5	1.8	1.9	<1.0	1.0	1.2

\\wse03.local\WSE\Projects\MA_PeabodyOldServer\Dighton\LF Mon FY19 2180521\Reports\GWSW\Appendix A-Historical Data\[Dighton LF Historic GW thru 1118.xls]MW-1

Notes: (1) The Standard is from "Drinking Water Standards & Guidelines for Chemicals in Massachusetts Drinking Water," dated Spring 2017.
MMCL Massachusetts Maximum Contaminant Level concentration
* SMCL Secondary Maximum Contaminant Level concentration
** ORSG Office of Research and Standard Drinking Water Guideline
NOTE: The arsenic standrad was changed from 0.05 mg/L to 0.01 mg/l in Spring 2001
(2) Method 1 GW-1 and GW-3 standards taken from the Massachusetts Contingency Plan 310 CMR 40.0000 (updated January 2015).
(3) The Method 1 GW-1 Standard for 1,4-dioxane was changed from 3 µg/L to 0.3 µg/L in April 2014.
< = The resulting concentration was below the laboratory detection limit, shown.
BOLD The resulting concentration was greater than the laboratory detection limit.
BOLD The resulting concentration was greater than the Comparable Standard (exceedances shown are for the existing standards at the time of sampling)

Abbreviations:
SU Standard Units
µg/l micrograms per liter (parts per billion)
mg/l milligrams per liter (parts per million)
mS/cm milliSiemens per centimeter
VOCs Volatile Organic Compounds
NS No Standard
ND Not Detected
NA Not Analyzed
B Compound detected in method blank

Table 1a
Groundwater Sampling Results, Monitoring Well MW-8S
Dighton Landfill
Dighton, Massachusetts
November 2000 through November 2018

Parameter	Units	Comparable Standard (1)	Method 1 GW-1 (2)	Method 1 GW-3 (2)	11/00	6/01	12/01	5/02	11/02	5/03	11/26/03	5/27/04	11/10/04	5/19/05	6/8/06	11/30/06	5/24/07	12/6/07	6/12/08	4/14/09	9/23/09	4/22/10	9/23/10	10/4/11	9/25/12	9/17/2013	11/13/2017	10/16/2018
Field Parameters																												
Temperature	degrees C	NS	NS	NS	NA	NA	NA	NA	NA	NA	10.86	10.80	11.10	9.14	10.40	14.30	15.72	8.60	12.30	8.67	11.30	8.91	12.59	11.57	11.72	11.83	11.07	11.50
pH	unitless	6.5-8.5*	NS	NS	NA	NA	NA	NA	NA	NA	6.28	6.00	6.14	6.46	6.04	6.19	6.64	6.18	6.38	6.40	5.50	6.19	5.55	5.55	6.31	6.35	6.27	6.46
Specific Conductivity	umhos/cm	mS/cm	NS	NS	NA	NA	NA	NA	NA	NA	0.918	449	0.880	0.789	0.455	0.301	0.367	0.321	0.376	0.586	0.487	0.364	0.380	0.522	0.404	0.276	0.382	0.499
Dissolved Oxygen	mg/l	NS	NS	NS	NA	NA	NA	NA	NA	NA	1.18	3.25	2.41	2.16	1.86	1.85	8.63	4.79	6.32	4.93	3.02	26.20	3.16	3.44	4.20	5.92	4.13	2.97
Inorganics																												
Alkalinity as $CaCO_3$	mg/l	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	190	170
Chemical Oxygen Demand	mg/l	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29	27
Chloride	mg/l	250 *	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	32	31
Total Cyanide	mg/l	0.2	0.2	0.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.010	<0.010
Nitrate as Nitrogen	mg/l	10	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.050	<0.050
Sulfate	mg/l	250 *	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	18	17
Total Dissolved Solids	mg/l	500 *	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	250	240
Dissolved Metals:																												
Arsenic	mg/l	0.01	0.01	0.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0010	<0.0030
Barium	mg/l	2	2	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.084	0.10
Cadmium	mg/l	0.005	0.005	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0020	<0.00050
Calcium	mg/l	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	38	44
Chromium	mg/l	0.1	0.1	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0040	<0.0050
Copper	mg/l	1.3	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.010	<0.0050
Iron	mg/l	0.3 *	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.059	12
Lead	mg/l	0.015	0.015	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0010	<0.0025
Manganese	mg/l	0.05 *	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.3	1.5
Mercury	mg/l	0.002	0.002	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.00020	<0.00020
Selenium	mg/l	0.05	0.05	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.025	<0.0025
Silver	mg/l	0.1 *	0.1	0.007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0060	<0.0010
Sodium	mg/l	20 **	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	31	34
Zinc	mg/l	5 *	5	0.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.014	<0.020
SVOCs (EPA Method 8270C) /VOCs (EPA Method 522)																												
1,4-Dioxane	µg/l	0.3**	0.3 (3)	50,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.5	<3.0	7.8	9.3	9.6	7.1	6.9	3.8	4.0
VOCs (EPA Method 8260B)																												
Benzene	µg/l	5	5	10,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0
Chlorobenzene	µg/l	100	100	1,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	µg/l	1,000 ***	NS	NS	ND	ND	ND	1.9	ND	ND	ND	1.4	ND	ND	ND	ND	ND	1.0	ND	ND	ND	ND	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
Ethyl Benzene	µg/l	700	700	5,000	2.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0
Ethyl Ether	µg/l	NS	NS	NS	ND	ND	19	16	17	ND	11	12	8.4	8.2	5.1	4.2	ND	5.7	5.3	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0
cis-1,2,-Dichloroethene	µg/l	70	70	50,000	ND	ND	ND	ND	ND	ND	0.57	ND	ND	ND	ND	ND	ND	0.5	ND	ND	ND	ND	<1.0	<1.0	<1.0	1.2	<1.0	<1.0
Methyl tert-butyl ether	µg/l	20-40 *	70	50,000	ND	1.7	5.3	5.1	5.1	4.0	3.3	ND	ND	ND	ND	1.8	ND	1.5	1.7	2.1	2.1	1.6	1.8	1.7	<5.0	<1.0	<1.0	<1.0
Tetrachloroethene	µg/l	5	5	30,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	µg/l	5	5	5,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	µg/l	NS	NS	NS	2.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0
Vinyl Chloride	µg/l	2	2	50,000	ND	ND	1.1	1.2	1.0	ND	ND	ND	ND	ND	ND	ND	ND	1.0	ND	0.5	ND	0.66	0.52	<0.50	<1.0	<1.0	<1.0	<1.0
Xylenes	µg/l	10,000	10,000	5,000	4.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0

\\wse03.local\WSE\Projects\MA_PeabodyOldServer\Dighton\LF Mon FY19 2180521\Reports\GWSW\Appendix A-Historical Data\[Dighton LF Historic GW thru 1118.xls]MW-1

Notes: (1) The Standard is from "Drinking Water Standards & Guidelines for Chemicals in Massachusetts Drinking Water," dated Spring 2017.
MMCL Massachusetts Maximum Contaminant Level concentration
* SMCL Secondary Maximum Contaminant Level concentration
** ORSG Office of Research and Standard Drinking Water Guideline
NOTE: The arsenic standrad was changed from 0.05 mg/L to 0.01 mg/l in Spring 2001
(2) Method 1 GW-1 and GW-3 standards taken from the Massachusetts Contingency Plan 310 CMR 40.0000 (updated January 2015).
(3) The Method 1 GW-1 Standard for 1,4-dioxane was changed from 3 µg/L to 0.3 µg/L in April 2014.
< = The resulting concentration was below the laboratory detection limit, shown.
BOLD The resulting concentration was greater than the laboratory detection limit.
BOLD The resulting concentration was greater than the Comparable Standard (exceedances shown are for the existing standards at the time of sampling)

Abbreviations:
SU Standard Units
µg/l micrograms per liter (parts per billion)
mg/l milligrams per liter (parts per million)
mS/cm milliSiemens per centimeter
VOCs Volatile Organic Compounds
NS No Standard
ND Not Detected
NA Not Analyzed
B Compound detected in method blank

Table 1a
Groundwater Sampling Results, Monitoring Well MW-8D
Dighton Landfill
Dighton, Massachusetts
November 2000 through November 2018

Parameter	Units	Comparable Standard (1)	Method 1 GW-1 (2)	Method 1 GW-3 (2)	11/00	6/01	12/01	5/02	11/02	5/03	11/26/03	5/27/04	11/10/04	5/19/05	6/8/06	11/30/06	5/24/07	12/6/07	6/12/08	4/14/09	9/23/09	4/22/10	9/23/10	10/4/11	9/25/12	9/17/2013	11/13/2017	10/16/2018
Field Parameters																												
Temperature	degrees C	NS	NS	NS	NA	NA	NA	NA	NA	NA	10.05	10.70	10.10	9.00	10.30	13.70	17.44	8.10	10.40	10.07	11.35	10.28	10.76	10.26	10.55	10.06	10.92	10.40
pH	unitless	6.5-8.5*	NS	NS	NA	NA	NA	NA	NA	NA	6.64	6.90	6.50	6.54	**6.15**	**6.48**	6.61	6.63	**6.31**	7.21	**6.01**	**6.34**	**4.54**	**5.43**	6.59	**6.37**	**6.49**	6.52
Specific Conductivity	umhos/cm	mS/cm	NS	NS	NA	NA	NA	NA	NA	NA	0.191	244	0.253	0.237	0.156	0.207	0.237	0.187	0.201	0.207	0.072	0.117	0.167	0.185	0.142	0.134	0.189	0.240
Dissolved Oxygen	mg/l	NS	NS	NS	NA	NA	NA	NA	NA	NA	3.61	3.92	1.u78	4.76	1.83	1.94	7.43	4.52	6.32	5.01	9.64	1.67	1.82	1.38	4.21	5.30	5.20	3.38
Inorganics																												
Alkalinity as $CaCO_3$	mg/l	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	51	57
Chemical Oxygen Demand	mg/l	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	<10
Chloride	mg/l	250 *	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21	25
Total Cyanide	mg/l	0.2	0.2	0.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.010	<0.010
Nitrate as Nitrogen	mg/l	10	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.050	<0.050
Sulfate	mg/l	250 *	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20	23
Total Dissolved Solids	mg/l	500 *	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	140	150
Dissolved Metals:																												
Arsenic	mg/l	0.01	0.01	0.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0010	<0.0010
Barium	mg/l	2	2	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.024	0.030
Cadmium	mg/l	0.005	0.005	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0020	<0.0020
Calcium	mg/l	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17	19
Chromium	mg/l	0.1	0.1	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0040	<0.0040
Copper	mg/l	1.3	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.010	<0.010
Iron	mg/l	0.3 *	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.5**	**6.3**
Lead	mg/l	0.015	0.015	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0010	<0.0010
Manganese	mg/l	0.05 *	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.51**	**0.60**
Mercury	mg/l	0.002	0.002	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.00020	<0.00020
Selenium	mg/l	0.05	0.05	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.025	<0.025
Silver	mg/l	0.1 *	0.1	0.007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0060	<0.0060
Sodium	mg/l	20 **	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11	12
Zinc	mg/l	5 *	5	0.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.010	<0.010
SVOCs (EPA Method 8270C) /VOCs (EPA Method 522)																												
1,4-Dioxane	µg/l	0.3**	0.3 (3)	50,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	1.9	**1.7**	**2.6**
VOCs (EPA Method 8260B)																												
Ethyl Ether	µg/l	NS	NS	NS	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0
Methyl tert-butyl ether	µg/l	20-40 *	70	50,000	2.9	1.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.0	ND	ND	ND	ND	ND	<1.0	<1.0	<5.0	ND	<1.0	<1.0
Trichloroethene	µg/l	5	5	5,000	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0	ND	<1.0	<1.0

\\wse03.local\WSE\Projects\MA_PeabodyOldServer\Dighton\LF Mon FY19 2180521\Reports\GWSW\Appendix A-Historical Data\[Dighton LF Historic GW thru 1118.xls]MW-1

Notes: (1) The Standard is from "Drinking Water Standards & Guidelines for Chemicals in Massachusetts Drinking Water," dated Spring 2017.
MMCL Massachusetts Maximum Contaminant Level concentration
* SMCL Secondary Maximum Contaminant Level concentration
** ORSG Office of Research and Standard Drinking Water Guideline
NOTE: The arsenic standrad was changed from 0.05 mg/L to 0.01 mg/l in Spring 2001
(2) Method 1 GW-1 and GW-3 standards taken from the Massachusetts Contingency Plan 310 CMR 40.0000 (updated January 2015).
(3) The Method 1 GW-1 Standard for 1,4-dioxane was changed from 3 µg/L to 0.3 µg/L in April 2014.
< = The resulting concentration was below the laboratory detection limit, shown.
BOLD The resulting concentration was greater than the laboratory detection limit.
BOLD The resulting concentration was greater than the Comparable Standard (exceedances shown are for the existing standards at the time of sampling)

Abbreviations:
SU Standard Units
µg/l micrograms per liter (parts per billion)
mg/l milligrams per liter (parts per million)
mS/cm milliSiemens per centimeter
VOCs Volatile Organic Compounds
NS No Standard
ND Not Detected
NA Not Analyzed
B Compound detected in method blank

Table 1b
Surface Water Sampling Results, Surface Water Location PZ-1 (formerly known as SUR-1)
Dighton Landfill
Dighton, Massachusetts
April 2011 through November 2018

Parameter	Units	Massachusetts Surface Water Quality Standards(1)	4/19/2011	10/4/2011	3/27/2012	9/25/2012	9/17/2013	11/13/2017	10/16/2018
Field Parameters									
Temperature	degrees C	NS	**9.04**	**17.99**	-	**12.30**	DRY	**5.30**	**11.90**
pH	unitless	6.5-8.3 (2)	**7.04**	**6.31**	-	**6.87**	DRY	**7.26**	**6.06**
Specific Conductivity	umhos/cm	mS/cm	**0.13**	**0.32**	-	**0.158**	DRY	**0.359**	**0.151**
Dissolved Oxygen	mg/l	NS	**9.71**	**1.47**	-	**8.59**	DRY	**7.52**	**7.18**
Inorganics									
Alkalinity as $CaCO_3$	mg/l	20 (6)	**30**	**130**	**180**	**41**	DRY	**50**	**37**
Chloride	mg/l	230	**20**	**20**	**23**	**35**	DRY	**61**	**43**
Total Cyanide	mg/l	0.0052	<0.010	<0.010	<0.010	<0.0050	DRY	<0.0050	<0.0050
Chemical Oxygen Demand	mg/l	NS	**28**	**72**	**50**	<20	DRY	**11**	**38**
Nitrate as Nitrogen	mg/l	NS	**0.94**	<0.05	<0.05	**2.0**	DRY	**1.0**	**0.32**
Sulfate	mg/l	NS	**9.6**	<2.0	**2.2**	**8.9**	DRY	**12**	**6.6**
Total Dissolved Solids	mg/l	NS	**82**	**240**	**280**	**160**	DRY	**200**	**150**
Hardness	mg/l	NS	NA	NA	NA	NA	DRY	**80**	**52**
Dissolved Metals:									
Arsenic	mg/l	0.15	<0.010	**0.0026**	**0.011**	<0.0010	DRY	**0.0020**	<0.0030
Barium	mg/l	0.004 (3)	<0.010	**0.022**	**0.19**	**0.0092**	DRY	**0.013**	**0.012**
Cadmium	mg/l	0.00025	<0.0010	<0.0010	<0.0010	<0.0010	DRY	<0.00025	<0.00050
Calcium	mg/l	116 (4)	**12**	**33**	**47**	**17**	DRY	**23**	**15**
Chromium	mg/l	0.011 (5)	<0.0050	<0.0010	<0.0050	**0.0046**	DRY	<0.0040	<0.0050
Copper	mg/l	0.0090	<0.010	**0.0011**	**0.011**	<0.0010	DRY	**0.0011**	<0.0050
Iron	mg/l	1.0	**0.15**	**0.75**	**27**	**0.11**	DRY	**0.84**	**0.61**
Lead	mg/l	0.0025	<0.0050	<0.0010	**0.018**	<0.0010	DRY	<0.0010	<0.0025
Manganese	mg/l	0.12 (3)	**0.04**	**0.17**	**5.0**	**0.073**	DRY	**0.81**	**0.29**
Mercury	mg/l	0.00077	<0.00020	<0.00020	<0.00020	<0.00020	DRY	<0.00020	<0.00020
Selenium	mg/l	0.0046	<0.010	<0.0010	<0.010	<0.0010	DRY	<0.0010	<0.0025
Silver	mg/l	0.00036 (3)	<0.0050	<0.0010	<0.0050	<0.0010	DRY	<0.00025	<0.0010
Sodium	mg/l	680 (4)	**13**	**26**	**27**	**18**	DRY	**29**	**19**
Zinc	mg/l	0.12	<0.050	**0.0041**	<0.050	**0.0033**	DRY	<0.010	<0.010
SVOCs (EPA Method 8270C) /VOCs (EPA Method 522)									
1,4-Dioxane	µg/l	NS	<3.0	<15	<3.0	<3.0	DRY	**0.22**	<0.20
VOCs (EPA Method 8260B)									
Acetone	µg/l	1500 (3)	ND	ND	ND	ND	DRY	ND	ND
cis-1,2,-Dichloroethene	µg/l	NS	ND	ND	ND	ND	DRY	ND	ND
Vinyl Acetate	µg/l	16 (3)	ND	ND	ND	ND	DRY	ND	ND
Vinyl Chloride	µg/l	NS	ND	ND	ND	ND	DRY	ND	ND

\\wse03.local\WSE\Projects\MA_PeabodyOldServer\Dighton\Historic Data\Trend Tables\[Dighton LF Historic SW thru 1118.xls]SUR-1

Notes:

(1) The standard listed is defined in 314 CMR 4.00. Surface waters at the site, namely wetlands, are considered Unlisted waters, and are classified as Class B, High Quality Waters. Criteria taken from the National Recommended Water Quality Criteria (USEPA, 2009) unless otherwise specified, are Criteria Continuous (chronic) Concentrations.

(2) The pH standard listed in 314 CMR 4.05(3)(b)(3.) is the range of 6.5 through 8.3 standard units and not more than 0.5 units outside of the background range.

(3) The value is the Tier II Secondary Chronic Value published in Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota: 1996 Revision (ES/ER/TM-96/RZ).

(4) The value is the Lowest Chronic Value for all organisms published in Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota: 1996 Revision (ES/ER/TM-96/RZ).

(5) No standard exists for total chromium. The chromium standard listed is the criterion continuous concentration for hexavalent chromium (Cr+6).

(6) The derivation of this value is presented in the Red Book (EPA 440/9-76-023, July 1976). The CCC of 20 mg/l is a minimum value except where alkalinity is naturally lower. In which case, the criterion cannot be lower than 25% of the natural level. Results were not compared to this lower limit until September 2012.

<	Parameter was below the laboratory deteciotn limit, shown.
BOLD	The resulting concentration was greater than the laboratory detection limit.
BOLD (highlighted)	The resulting concentration was greater than the Comparable Standard (exceedances shown are for the existing standards at the time of sampling).
-	Parameters not measured.

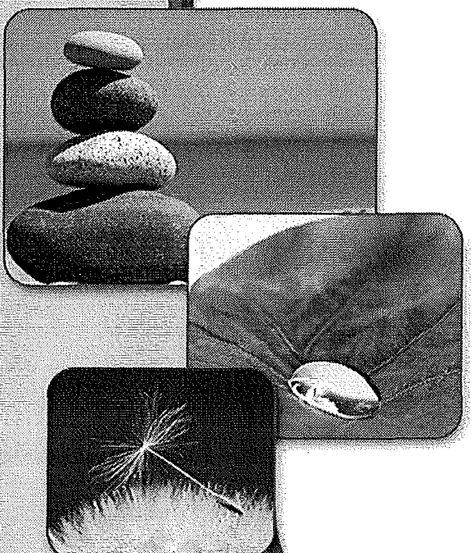
Abbreviations:

µg/l	micrograms per liter (parts per billion)
mg/l	milligrams per liter (parts per million)
mS/cm	milliSiemens per centimeter
VOCs	Volatile Organic Compounds
SVOCs	Semi-Volatile Organic Compounds
NS	No Standard
ND	Not Detected
NA	Not Analyzed

APPENDIX B
Laboratory Analytical Results

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

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

TestAmerica Job ID: 480-143539-1
Client Project/Site: Dighton Landfill
Sampling Event: Dighton Landfill

For:
Weston & Sampson Engineers
5 Centennial Drive
Peabody, Massachusetts 01960

Attn: Duane Himes

Steve Hartmann

Authorized for release by:
11/14/2018 2:39:42 PM

Steve Hartmann, Project Manager I
(413)572-4000
steve.hartmann@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.

Table of Contents

Cover Page 1
Table of Contents 2
Definitions/Glossary 3
Case Narrative 4
Detection Summary 6
Client Sample Results 11
Surrogate Summary 41
QC Sample Results 42
QC Association Summary 61
Lab Chronicle 70
Certification Summary 77
Method Summary 81
Sample Summary 82
Chain of Custody 83
Receipt Checklists 90

Definitions/Glossary

Qualifiers

GC/MS VOA TICs

Qualifier	Qualifier Description
J	Indicates an Estimated Value for TICs
N	Presumptive evidence of material.
T	Result is a tentatively identified compound (TIC) and an estimated value.

Metals

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.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
*	LCS or LCSD is outside acceptance limits.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
F1	MS and/or MSD Recovery is outside acceptance limits.
B	Compound was found in the blank and sample.

Glossary

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

Job ID: 480-143539-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative
480-143539-1

Comments
No additional comments.

Receipt
The samples were received on 10/17/2018 1:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.1° C and 1.4° C.

GC/MS VOA
Method 8260C: The continuing calibration verification (CCV) associated with batch 480-441604 and 480-441610 recovered outside acceptance criteria, low biased, for Chloromethane and Vinyl chloride. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data have been reported. The following samples are impacted: DUP-1 (480-143539-1), MW-1 (480-143539-2), MW-3 (480-143539-3), MW-5D (480-143539-4), MW-7D (480-143539-8), MW-5S (480-143539-5), MW-6D (480-143539-6), MW-6S (480-143539-7), MW-7S (480-143539-9), MW-8D (480-143539-10), MW-8S (480-143539-11), PZ-1 (480-143539-12), and TRIP BLANK (480-143539-13).

Method 8260C: The sample was collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, when verified by the laboratory, the pH was greater than 2 and the following sample was analyzed after 7 days from sampling: PZ-1 (480-143539-12).

Method 8260C: The continuing calibration verification (CCV) associated with batch 480-441610 recovered above the upper control limit for 2-Butanone (MEK) and 2-Hexanone . The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: MW-5D (480-143539-4), MW-5S (480-143539-5), MW-6D (480-143539-6), MW-6S (480-143539-7), MW-7D (480-143539-8), MW-7S (480-143539-9), MW-8D (480-143539-10), MW-8S (480-143539-11), PZ-1 (480-143539-12) and TRIP BLANK (480-143539-13).

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

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

HPLC/IC
Method 300.0: The following samples were diluted due to the nature of the sample matrix; dilutions based upon historical results: DUP-1 (480-143539-1) and MW-3 (480-143539-3). Elevated reporting limits (RLs) are provided.

Method 300.0: The following sample was diluted due to the nature of the sample matrix: MW-1 (480-143539-2). Elevated reporting limits (RLs) are provided.

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

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

General Chemistry
Method SM 2320B: The following sample(s) was received with headspace in the sample container: DUP-1 (480-143539-1), MW-3 (480-143539-3), MW-5D (480-143539-4), MW-5S (480-143539-5), MW-6D (480-143539-6), MW-6S (480-143539-7), MW-7D (480-143539-8), MW-7S (480-143539-9), MW-8D (480-143539-10), PZ-1 (480-143539-12), (480-143539-I-8 MS), (480-143539-I-9 DU), (480-143540-H-4), MW-1 (480-143539-2).

Method SM 2540C: The following sample was analyzed outside of analytical holding time due to laboratory error. DUP-1 (480-143539-1).

Method 9012B: Reanalysis of the following samples were performed outside of the analytical holding time due to failure of quality control parameters in the initial analysis. MW-5D (480-143539-4), MW-5S (480-143539-5), MW-6D (480-143539-6), MW-6S (480-143539-7),

Job ID: 480-143539-1 (Continued)

Laboratory: TestAmerica Buffalo (Continued)

MW-7D (480-143539-8), MW-7S (480-143539-9), MW-8D (480-143539-10), MW-8S (480-143539-11) and (480-143539-D-4-C DU) Both results reported. MW-5D (480-143539-4), MW-5S (480-143539-5), MW-6D (480-143539-6), MW-6S (480-143539-7), MW-7D (480-143539-8), MW-7S (480-143539-9), MW-8D (480-143539-10), MW-8S (480-143539-11) and (480-143539-D-4-C DU) . Both sets of data are reported herein.

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

Organic Prep

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

Client Sample ID: DUP-1 Lab Sample ID: 480-143539-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.8		1.0		ug/L	1		8260C	Total/NA
Vinyl chloride	1.2		1.0		ug/L	1		8260C	Total/NA
Arsenic	19		3.0		ug/L	1		6020A	Dissolved
Barium	31		5.0		ug/L	1		6020A	Dissolved
Calcium	62000		500		ug/L	1		6020A	Dissolved
Iron	5800		100		ug/L	1		6020A	Dissolved
Manganese	6000		5.0		ug/L	1		6020A	Dissolved
Sodium	35000		500		ug/L	1		6020A	Dissolved
Chloride	45		2.5		mg/L	5		300.0	Total/NA
Sulfate	12		10		mg/L	5		300.0	Total/NA
Chemical Oxygen Demand	13		10		mg/L	1		410.4	Total/NA
Alkalinity, Total	220		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	300	H	10		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-1 Lab Sample ID: 480-143539-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.21		0.20		ug/L	1		522	Total/NA
Barium	68		5.0		ug/L	1		6020A	Dissolved
Calcium	1700		500		ug/L	1		6020A	Dissolved
Manganese	69		5.0		ug/L	1		6020A	Dissolved
Sodium	6700		500		ug/L	1		6020A	Dissolved
Zinc	33		20		ug/L	1		6020A	Dissolved
Chloride	10		2.5		mg/L	5		300.0	Total/NA
Total Dissolved Solids	57		10		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-3 Lab Sample ID: 480-143539-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.8		1.0		ug/L	1		8260C	Total/NA
Arsenic	10		3.0		ug/L	1		6020A	Dissolved
Barium	170		5.0		ug/L	1		6020A	Dissolved
Calcium	33000		500		ug/L	1		6020A	Dissolved
Chromium	28		5.0		ug/L	1		6020A	Dissolved
Copper	36		5.0		ug/L	1		6020A	Dissolved
Iron	28000		100		ug/L	1		6020A	Dissolved
Lead	30		2.5		ug/L	1		6020A	Dissolved
Manganese	540		5.0		ug/L	1		6020A	Dissolved
Selenium	3.0		2.5		ug/L	1		6020A	Dissolved
Sodium	13000		500		ug/L	1		6020A	Dissolved
Zinc	140		20		ug/L	1		6020A	Dissolved
Chloride	27		1.0		mg/L	2		300.0	Total/NA
Sulfate	20		4.0		mg/L	2		300.0	Total/NA
Chemical Oxygen Demand	18		10		mg/L	1		410.4	Total/NA
Alkalinity, Total	71		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	160		10		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-5D Lab Sample ID: 480-143539-4

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-5D (Continued) — Lab Sample ID: 480-143539-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	2.5		1.0		ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	2.1		1.0		ug/L	1		8260C	Total/NA
Vinyl chloride	3.8		1.0		ug/L	1		8260C	Total/NA
1,4-Dioxane	2.5		0.20		ug/L	1		522	Total/NA
Arsenic	38		3.0		ug/L	1		6020A	Dissolved
Barium	28		5.0		ug/L	1		6020A	Dissolved
Calcium	52000		500		ug/L	1		6020A	Dissolved
Iron	21000		100		ug/L	1		6020A	Dissolved
Manganese	7100		5.0		ug/L	1		6020A	Dissolved
Sodium	36000		500		ug/L	1		6020A	Dissolved
Chloride	66		0.50		mg/L	1		300.0	Total/NA
Sulfate	18		2.0		mg/L	1		300.0	Total/NA
Nitrate as N	0.089		0.050		mg/L	1		353.2	Total/NA
Chemical Oxygen Demand	14		10		mg/L	1		410.4	Total/NA
Cyanide, Total	0.014	* ^ B	0.010		mg/L	1		9012B	Total/NA
Alkalinity, Total	210		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	320		10		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-5S — Lab Sample ID: 480-143539-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	8.3		3.0		ug/L	1		6020A	Dissolved
Barium	150		5.0		ug/L	1		6020A	Dissolved
Calcium	8500		500		ug/L	1		6020A	Dissolved
Chromium	16		5.0		ug/L	1		6020A	Dissolved
Copper	15		5.0		ug/L	1		6020A	Dissolved
Iron	18000		100		ug/L	1		6020A	Dissolved
Lead	14		2.5		ug/L	1		6020A	Dissolved
Manganese	510		5.0		ug/L	1		6020A	Dissolved
Sodium	5100		500		ug/L	1		6020A	Dissolved
Zinc	58		20		ug/L	1		6020A	Dissolved
Chloride	5.1		0.50		mg/L	1		300.0	Total/NA
Sulfate	5.0		2.0		mg/L	1		300.0	Total/NA
Nitrate as N	0.082		0.050		mg/L	1		353.2	Total/NA
Alkalinity, Total	13		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	38		10		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-6D — Lab Sample ID: 480-143539-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	21		5.0		ug/L	1		6020A	Dissolved
Calcium	25000		500		ug/L	1		6020A	Dissolved
Iron	1300		100		ug/L	1		6020A	Dissolved
Manganese	1100		5.0		ug/L	1		6020A	Dissolved
Sodium	12000		500		ug/L	1		6020A	Dissolved
Chloride	13		0.50		mg/L	1		300.0	Total/NA
Sulfate	43		2.0		mg/L	1		300.0	Total/NA
Alkalinity, Total	45		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	160		10		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client Sample ID: MW-6S

Lab Sample ID: 480-143539-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.9		0.20		ug/L	1		522	Total/NA
Arsenic	4.9		3.0		ug/L	1		6020A	Dissolved
Barium	53		5.0		ug/L	1		6020A	Dissolved
Cadmium	3.9		0.50		ug/L	1		6020A	Dissolved
Calcium	8000		500		ug/L	1		6020A	Dissolved
Chromium	7.7		5.0		ug/L	1		6020A	Dissolved
Copper	13		5.0		ug/L	1		6020A	Dissolved
Iron	14000		100		ug/L	1		6020A	Dissolved
Lead	11		2.5		ug/L	1		6020A	Dissolved
Manganese	190		5.0		ug/L	1		6020A	Dissolved
Sodium	7900		500		ug/L	1		6020A	Dissolved
Zinc	48		20		ug/L	1		6020A	Dissolved
Chloride	7.6		0.50		mg/L	1		300.0	Total/NA
Sulfate	8.7		2.0		mg/L	1		300.0	Total/NA
Total Dissolved Solids	230		10		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-7D

Lab Sample ID: 480-143539-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.8		1.0		ug/L	1		8260C	Total/NA
Vinyl chloride	1.0		1.0		ug/L	1		8260C	Total/NA
1,4-Dioxane	4.0		0.20		ug/L	1		522	Total/NA
Arsenic	15		3.0		ug/L	1		6020A	Dissolved
Barium	24		5.0		ug/L	1		6020A	Dissolved
Calcium	50000		500		ug/L	1		6020A	Dissolved
Iron	4500		100		ug/L	1		6020A	Dissolved
Manganese	4700		5.0		ug/L	1		6020A	Dissolved
Sodium	28000		500		ug/L	1		6020A	Dissolved
Chloride	44		0.50		mg/L	1		300.0	Total/NA
Sulfate	12		2.0		mg/L	1		300.0	Total/NA
Chemical Oxygen Demand	16		10		mg/L	1		410.4	Total/NA
Cyanide, Total	0.013	H	0.010		mg/L	1		9012B	Total/NA
Alkalinity, Total	220		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	310		10		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-7S

Lab Sample ID: 480-143539-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	1.8		1.0		ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	1.1		1.0		ug/L	1		8260C	Total/NA
1,4-Dioxane	4.5		0.20		ug/L	1		522	Total/NA
Arsenic	89		3.0		ug/L	1		6020A	Dissolved
Barium	260		5.0		ug/L	1		6020A	Dissolved
Cadmium	1.1		0.50		ug/L	1		6020A	Dissolved
Calcium	66000		500		ug/L	1		6020A	Dissolved
Chromium	30		5.0		ug/L	1		6020A	Dissolved
Copper	71		5.0		ug/L	1		6020A	Dissolved
Iron	58000		100		ug/L	1		6020A	Dissolved
Lead	43		2.5		ug/L	1		6020A	Dissolved
Manganese	8000		5.0		ug/L	1		6020A	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-7S (Continued) — Lab Sample ID: 480-143539-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Selenium	4.5		2.5		ug/L	1		6020A	Dissolved
Sodium	30000		500		ug/L	1		6020A	Dissolved
Zinc	91		20		ug/L	1		6020A	Dissolved
Chloride	44		0.50		mg/L	1		300.0	Total/NA
Sulfate	4.8		2.0		mg/L	1		300.0	Total/NA
Nitrate as N	0.076		0.050		mg/L	1		353.2	Total/NA
Chemical Oxygen Demand	15		10		mg/L	1		410.4	Total/NA
Alkalinity, Total	220		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	290		10		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-8D — Lab Sample ID: 480-143539-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.6		0.20		ug/L	1		522	Total/NA
Barium	0.030		0.0020		mg/L	1		6010C	Dissolved
Calcium	19		0.50		mg/L	1		6010C	Dissolved
Iron	6.3		0.050		mg/L	1		6010C	Dissolved
Manganese	0.60		0.0030		mg/L	1		6010C	Dissolved
Sodium	12		1.0		mg/L	1		6010C	Dissolved
Chloride	25		0.50		mg/L	1		300.0	Total/NA
Sulfate	23		2.0		mg/L	1		300.0	Total/NA
Alkalinity, Total	57		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	150		10		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-8S — Lab Sample ID: 480-143539-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.0		0.20		ug/L	1		522	Total/NA
Barium	100		5.0		ug/L	1		6020A	Dissolved
Calcium	44000		500		ug/L	1		6020A	Dissolved
Iron	12000		100		ug/L	1		6020A	Dissolved
Manganese	1500		5.0		ug/L	1		6020A	Dissolved
Sodium	34000		500		ug/L	1		6020A	Dissolved
Chloride	31		0.50		mg/L	1		300.0	Total/NA
Sulfate	17		2.0		mg/L	1		300.0	Total/NA
Chemical Oxygen Demand	27	F1	10		mg/L	1		410.4	Total/NA
Alkalinity, Total	170		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	240		10		mg/L	1		SM 2540C	Total/NA

Client Sample ID: PZ-1 — Lab Sample ID: 480-143539-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.012		0.0050		mg/L	1		6020A	Total/NA
Calcium	15		0.50		mg/L	1		6020A	Total/NA
Iron	0.61		0.10		mg/L	1		6020A	Total/NA
Manganese	0.29		0.0050		mg/L	1		6020A	Total/NA
Sodium	19		0.50		mg/L	1		6020A	Total/NA
Chloride	43		0.50		mg/L	1		300.0	Total/NA
Sulfate	6.6		2.0		mg/L	1		300.0	Total/NA
Nitrate as N	0.32		0.050		mg/L	1		353.2	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PZ-1 (Continued) | Lab Sample ID: 480-143539-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chemical Oxygen Demand	38		10		mg/L	1		410.4	Total/NA
Alkalinity, Total	37		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	150		10		mg/L	1		SM 2540C	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Hardness as calcium carbonate	52		3.3		mg/L	1		2340B-2011	Total/NA

Client Sample ID: TRIP BLANK | Lab Sample ID: 480-143539-13

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Weston & Sampson Engineers
Project/Site: Dighton Landfill

TestAmerica Job ID: 480-143539-1

Client Sample ID: DUP-1
Date Collected: 10/16/18 00:00
Date Received: 10/17/18 01:00

Lab Sample ID: 480-143539-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 13:16	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/25/18 13:16	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 13:16	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/25/18 13:16	1
1,1-Dichloroethane	ND		1.0		ug/L			10/25/18 13:16	1
1,1-Dichloroethene	ND		1.0		ug/L			10/25/18 13:16	1
1,1-Dichloropropene	ND		1.0		ug/L			10/25/18 13:16	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/25/18 13:16	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/25/18 13:16	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/25/18 13:16	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/25/18 13:16	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/25/18 13:16	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/25/18 13:16	1
1,2-Dichloroethane	ND		1.0		ug/L			10/25/18 13:16	1
1,2-Dichloropropane	ND		1.0		ug/L			10/25/18 13:16	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/25/18 13:16	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/25/18 13:16	1
1,3-Dichloropropane	ND		1.0		ug/L			10/25/18 13:16	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/25/18 13:16	1
2,2-Dichloropropane	ND		1.0		ug/L			10/25/18 13:16	1
2-Chlorotoluene	ND		1.0		ug/L			10/25/18 13:16	1
2-Hexanone	ND		5.0		ug/L			10/25/18 13:16	1
4-Chlorotoluene	ND		1.0		ug/L			10/25/18 13:16	1
4-Isopropyltoluene	ND		1.0		ug/L			10/25/18 13:16	1
Acetone	ND		10		ug/L			10/25/18 13:16	1
Benzene	ND		1.0		ug/L			10/25/18 13:16	1
Bromobenzene	ND		1.0		ug/L			10/25/18 13:16	1
Bromoform	ND		1.0		ug/L			10/25/18 13:16	1
Bromomethane	ND		1.0		ug/L			10/25/18 13:16	1
Carbon tetrachloride	ND		1.0		ug/L			10/25/18 13:16	1
Chlorobenzene	ND		1.0		ug/L			10/25/18 13:16	1
Bromochloromethane	ND		1.0		ug/L			10/25/18 13:16	1
Dibromochloromethane	ND		1.0		ug/L			10/25/18 13:16	1
Chloroethane	ND		1.0		ug/L			10/25/18 13:16	1
Chloroform	ND		1.0		ug/L			10/25/18 13:16	1
Chloromethane	ND		1.0		ug/L			10/25/18 13:16	1
cis-1,2-Dichloroethene	**1.8**		1.0		ug/L			10/25/18 13:16	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 13:16	1
Dibromomethane	ND		1.0		ug/L			10/25/18 13:16	1
Bromodichloromethane	ND		1.0		ug/L			10/25/18 13:16	1
Ethylbenzene	ND		1.0		ug/L			10/25/18 13:16	1
1,2-Dibromoethane	ND		1.0		ug/L			10/25/18 13:16	1
Hexachlorobutadiene	ND		1.0		ug/L			10/25/18 13:16	1
Isopropylbenzene	ND		1.0		ug/L			10/25/18 13:16	1
2-Butanone (MEK)	ND		10		ug/L			10/25/18 13:16	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/25/18 13:16	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/25/18 13:16	1
Methylene Chloride	ND		1.0		ug/L			10/25/18 13:16	1
m,p-Xylene	ND		2.0		ug/L			10/25/18 13:16	1

Client Sample ID: DUP-1

Lab Sample ID: 480-143539-1

Date Collected: 10/16/18 00:00
Matrix: Water
Date Received: 10/17/18 01:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		1.0		ug/L			10/25/18 13:16	1
n-Butylbenzene	ND		1.0		ug/L			10/25/18 13:16	1
N-Propylbenzene	ND		1.0		ug/L			10/25/18 13:16	1
o-Xylene	ND		1.0		ug/L			10/25/18 13:16	1
sec-Butylbenzene	ND		1.0		ug/L			10/25/18 13:16	1
Styrene	ND		1.0		ug/L			10/25/18 13:16	1
tert-Butylbenzene	ND		1.0		ug/L			10/25/18 13:16	1
Tetrachloroethene	ND		1.0		ug/L			10/25/18 13:16	1
Toluene	ND		1.0		ug/L			10/25/18 13:16	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/25/18 13:16	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 13:16	1
Trichloroethene	ND		1.0		ug/L			10/25/18 13:16	1
Trichlorofluoromethane	ND		1.0		ug/L			10/25/18 13:16	1
Vinyl chloride	**1.2**		1.0		ug/L			10/25/18 13:16	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Propanal, 2-methyl-	*3.4*	*T J N*	*ug/L*		*3.43*	*78-84-2*		*10/25/18 13:16*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*77 - 120*		*10/25/18 13:16*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/25/18 13:16*	*1*
4-Bromofluorobenzene (Surr)	*101*		*73 - 120*		*10/25/18 13:16*	*1*
Dibromofluoromethane (Surr)	*99*		*75 - 123*		*10/25/18 13:16*	*1*

Method: 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20		ug/L		10/23/18 14:15	10/24/18 12:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*79*		*46 - 130*	*10/23/18 14:15*	*10/24/18 12:51*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**19**		3.0		ug/L		10/18/18 15:22	10/19/18 17:30	1
Barium	**31**		5.0		ug/L		10/18/18 15:22	10/19/18 17:30	1
Cadmium	ND		0.50		ug/L		10/18/18 15:22	10/19/18 17:30	1
Calcium	**62000**		500		ug/L		10/18/18 15:22	10/19/18 17:30	1
Chromium	ND		5.0		ug/L		10/18/18 15:22	10/19/18 17:30	1
Copper	ND		5.0		ug/L		10/18/18 15:22	10/19/18 17:30	1
Iron	**5800**		100		ug/L		10/18/18 15:22	10/19/18 17:30	1
Lead	ND		2.5		ug/L		10/18/18 15:22	10/19/18 17:30	1
Manganese	**6000**		5.0		ug/L		10/18/18 15:22	10/19/18 17:30	1
Selenium	ND		2.5		ug/L		10/18/18 15:22	10/19/18 17:30	1
Silver	ND		1.0		ug/L		10/18/18 15:22	10/19/18 17:30	1
Sodium	**35000**		500		ug/L		10/18/18 15:22	10/19/18 17:30	1
Zinc	ND		20		ug/L		10/18/18 15:22	10/19/18 17:30	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		10/18/18 09:29	10/19/18 21:22	1

Client Sample ID: DUP-1

Lab Sample ID: 480-143539-1

Date Collected: 10/16/18 00:00
Date Received: 10/17/18 01:00

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**45**		2.5		mg/L			10/23/18 18:17	5
Sulfate	**12**		10		mg/L			10/23/18 18:17	5
Nitrate as N	ND		0.050		mg/L			10/17/18 17:35	1
Chemical Oxygen Demand	**13**		10		mg/L			10/17/18 18:30	1
Cyanide, Total	ND		0.010		mg/L		10/26/18 17:30	10/29/18 09:13	1
Alkalinity, Total	**220**		5.0		mg/L			10/18/18 14:08	1
Total Dissolved Solids	**300**	**H**	10		mg/L			10/25/18 20:13	1

Client Sample ID: MW-1

Lab Sample ID: 480-143539-2

Date Collected: 10/16/18 09:30
Date Received: 10/17/18 01:00

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 13:43	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/25/18 13:43	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 13:43	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/25/18 13:43	1
1,1-Dichloroethane	ND		1.0		ug/L			10/25/18 13:43	1
1,1-Dichloroethene	ND		1.0		ug/L			10/25/18 13:43	1
1,1-Dichloropropene	ND		1.0		ug/L			10/25/18 13:43	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/25/18 13:43	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/25/18 13:43	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/25/18 13:43	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/25/18 13:43	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/25/18 13:43	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/25/18 13:43	1
1,2-Dichloroethane	ND		1.0		ug/L			10/25/18 13:43	1
1,2-Dichloropropane	ND		1.0		ug/L			10/25/18 13:43	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/25/18 13:43	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/25/18 13:43	1
1,3-Dichloropropane	ND		1.0		ug/L			10/25/18 13:43	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/25/18 13:43	1
2,2-Dichloropropane	ND		1.0		ug/L			10/25/18 13:43	1
2-Chlorotoluene	ND		1.0		ug/L			10/25/18 13:43	1
2-Hexanone	ND		5.0		ug/L			10/25/18 13:43	1
4-Chlorotoluene	ND		1.0		ug/L			10/25/18 13:43	1
4-Isopropyltoluene	ND		1.0		ug/L			10/25/18 13:43	1
Acetone	ND		10		ug/L			10/25/18 13:43	1
Benzene	ND		1.0		ug/L			10/25/18 13:43	1
Bromobenzene	ND		1.0		ug/L			10/25/18 13:43	1
Bromoform	ND		1.0		ug/L			10/25/18 13:43	1
Bromomethane	ND		1.0		ug/L			10/25/18 13:43	1
Carbon tetrachloride	ND		1.0		ug/L			10/25/18 13:43	1
Chlorobenzene	ND		1.0		ug/L			10/25/18 13:43	1
Bromochloromethane	ND		1.0		ug/L			10/25/18 13:43	1
Dibromochloromethane	ND		1.0		ug/L			10/25/18 13:43	1
Chloroethane	ND		1.0		ug/L			10/25/18 13:43	1
Chloroform	ND		1.0		ug/L			10/25/18 13:43	1
Chloromethane	ND		1.0		ug/L			10/25/18 13:43	1

Client Sample ID: MW-1

Lab Sample ID: 480-143539-2

Date Collected: 10/16/18 09:30
Matrix: Water
Date Received: 10/17/18 01:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/25/18 13:43	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 13:43	1
Dibromomethane	ND		1.0		ug/L			10/25/18 13:43	1
Bromodichloromethane	ND		1.0		ug/L			10/25/18 13:43	1
Ethylbenzene	ND		1.0		ug/L			10/25/18 13:43	1
1,2-Dibromoethane	ND		1.0		ug/L			10/25/18 13:43	1
Hexachlorobutadiene	ND		1.0		ug/L			10/25/18 13:43	1
Isopropylbenzene	ND		1.0		ug/L			10/25/18 13:43	1
2-Butanone (MEK)	ND		10		ug/L			10/25/18 13:43	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/25/18 13:43	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/25/18 13:43	1
Methylene Chloride	ND		1.0		ug/L			10/25/18 13:43	1
m,p-Xylene	ND		2.0		ug/L			10/25/18 13:43	1
Naphthalene	ND		1.0		ug/L			10/25/18 13:43	1
n-Butylbenzene	ND		1.0		ug/L			10/25/18 13:43	1
N-Propylbenzene	ND		1.0		ug/L			10/25/18 13:43	1
o-Xylene	ND		1.0		ug/L			10/25/18 13:43	1
sec-Butylbenzene	ND		1.0		ug/L			10/25/18 13:43	1
Styrene	ND		1.0		ug/L			10/25/18 13:43	1
tert-Butylbenzene	ND		1.0		ug/L			10/25/18 13:43	1
Tetrachloroethene	ND		1.0		ug/L			10/25/18 13:43	1
Toluene	ND		1.0		ug/L			10/25/18 13:43	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/25/18 13:43	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 13:43	1
Trichloroethene	ND		1.0		ug/L			10/25/18 13:43	1
Trichlorofluoromethane	ND		1.0		ug/L			10/25/18 13:43	1
Vinyl chloride	ND		1.0		ug/L			10/25/18 13:43	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/25/18 13:43*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*77 - 120*		*10/25/18 13:43*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/25/18 13:43*	*1*
4-Bromofluorobenzene (Surr)	*105*		*73 - 120*		*10/25/18 13:43*	*1*
Dibromofluoromethane (Surr)	*99*		*75 - 123*		*10/25/18 13:43*	*1*

Method: 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**0.21**		0.20		ug/L		10/23/18 14:15	10/24/18 13:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*78*		*46 - 130*	*10/23/18 14:15*	*10/24/18 13:05*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		3.0		ug/L		10/18/18 15:22	10/19/18 17:06	1
Barium	**68**		5.0		ug/L		10/18/18 15:22	10/19/18 17:06	1
Cadmium	ND		0.50		ug/L		10/18/18 15:22	10/19/18 17:06	1
Calcium	**1700**		500		ug/L		10/18/18 15:22	10/19/18 17:06	1
Chromium	ND		5.0		ug/L		10/18/18 15:22	10/19/18 17:06	1

Client Sample ID: MW-1

Lab Sample ID: 480-143539-2

Date Collected: 10/16/18 09:30
Date Received: 10/17/18 01:00

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	ND		5.0		ug/L		10/18/18 15:22	10/19/18 17:06	1
Iron	ND		100		ug/L		10/18/18 15:22	10/19/18 17:06	1
Lead	ND		2.5		ug/L		10/18/18 15:22	10/19/18 17:06	1
Manganese	**69**		5.0		ug/L		10/18/18 15:22	10/19/18 17:06	1
Selenium	ND		2.5		ug/L		10/18/18 15:22	10/19/18 17:06	1
Silver	ND		1.0		ug/L		10/18/18 15:22	10/19/18 17:06	1
Sodium	**6700**		500		ug/L		10/18/18 15:22	10/19/18 17:06	1
Zinc	**33**		20		ug/L		10/18/18 15:22	10/19/18 17:06	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		10/18/18 09:29	10/19/18 21:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**10**		2.5		mg/L			10/26/18 20:59	5
Sulfate	ND		10		mg/L			10/26/18 20:59	5
Nitrate as N	ND		0.050		mg/L			10/17/18 17:36	1
Chemical Oxygen Demand	ND		10		mg/L			10/17/18 18:30	1
Cyanide, Total	ND		0.010		mg/L		10/26/18 17:30	10/29/18 09:18	1
Alkalinity, Total	ND		5.0		mg/L			10/21/18 16:29	1
Total Dissolved Solids	**57**		10		mg/L			10/22/18 23:37	1

Client Sample ID: MW-3

Lab Sample ID: 480-143539-3

Date Collected: 10/16/18 15:15
Date Received: 10/17/18 01:00

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 14:10	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/25/18 14:10	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 14:10	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/25/18 14:10	1
1,1-Dichloroethane	ND		1.0		ug/L			10/25/18 14:10	1
1,1-Dichloroethene	ND		1.0		ug/L			10/25/18 14:10	1
1,1-Dichloropropene	ND		1.0		ug/L			10/25/18 14:10	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/25/18 14:10	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/25/18 14:10	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/25/18 14:10	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/25/18 14:10	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/25/18 14:10	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/25/18 14:10	1
1,2-Dichloroethane	ND		1.0		ug/L			10/25/18 14:10	1
1,2-Dichloropropane	ND		1.0		ug/L			10/25/18 14:10	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/25/18 14:10	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/25/18 14:10	1
1,3-Dichloropropane	ND		1.0		ug/L			10/25/18 14:10	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/25/18 14:10	1
2,2-Dichloropropane	ND		1.0		ug/L			10/25/18 14:10	1
2-Chlorotoluene	ND		1.0		ug/L			10/25/18 14:10	1

Client Sample ID: MW-3
Date Collected: 10/16/18 15:15
Date Received: 10/17/18 01:00

Lab Sample ID: 480-143539-3
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Hexanone	ND		5.0		ug/L			10/25/18 14:10	1
4-Chlorotoluene	ND		1.0		ug/L			10/25/18 14:10	1
4-Isopropyltoluene	ND		1.0		ug/L			10/25/18 14:10	1
Acetone	ND		10		ug/L			10/25/18 14:10	1
Benzene	ND		1.0		ug/L			10/25/18 14:10	1
Bromobenzene	ND		1.0		ug/L			10/25/18 14:10	1
Bromoform	ND		1.0		ug/L			10/25/18 14:10	1
Bromomethane	ND		1.0		ug/L			10/25/18 14:10	1
Carbon tetrachloride	ND		1.0		ug/L			10/25/18 14:10	1
Chlorobenzene	ND		1.0		ug/L			10/25/18 14:10	1
Bromochloromethane	ND		1.0		ug/L			10/25/18 14:10	1
Dibromochloromethane	ND		1.0		ug/L			10/25/18 14:10	1
Chloroethane	ND		1.0		ug/L			10/25/18 14:10	1
Chloroform	ND		1.0		ug/L			10/25/18 14:10	1
Chloromethane	ND		1.0		ug/L			10/25/18 14:10	1
cis-1,2-Dichloroethene	**1.8**		1.0		ug/L			10/25/18 14:10	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 14:10	1
Dibromomethane	ND		1.0		ug/L			10/25/18 14:10	1
Bromodichloromethane	ND		1.0		ug/L			10/25/18 14:10	1
Ethylbenzene	ND		1.0		ug/L			10/25/18 14:10	1
1,2-Dibromoethane	ND		1.0		ug/L			10/25/18 14:10	1
Hexachlorobutadiene	ND		1.0		ug/L			10/25/18 14:10	1
Isopropylbenzene	ND		1.0		ug/L			10/25/18 14:10	1
2-Butanone (MEK)	ND		10		ug/L			10/25/18 14:10	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/25/18 14:10	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/25/18 14:10	1
Methylene Chloride	ND		1.0		ug/L			10/25/18 14:10	1
m,p-Xylene	ND		2.0		ug/L			10/25/18 14:10	1
Naphthalene	ND		1.0		ug/L			10/25/18 14:10	1
n-Butylbenzene	ND		1.0		ug/L			10/25/18 14:10	1
N-Propylbenzene	ND		1.0		ug/L			10/25/18 14:10	1
o-Xylene	ND		1.0		ug/L			10/25/18 14:10	1
sec-Butylbenzene	ND		1.0		ug/L			10/25/18 14:10	1
Styrene	ND		1.0		ug/L			10/25/18 14:10	1
tert-Butylbenzene	ND		1.0		ug/L			10/25/18 14:10	1
Tetrachloroethene	ND		1.0		ug/L			10/25/18 14:10	1
Toluene	ND		1.0		ug/L			10/25/18 14:10	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/25/18 14:10	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 14:10	1
Trichloroethene	ND		1.0		ug/L			10/25/18 14:10	1
Trichlorofluoromethane	ND		1.0		ug/L			10/25/18 14:10	1
Vinyl chloride	ND		1.0		ug/L			10/25/18 14:10	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/25/18 14:10*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*77 - 120*		*10/25/18 14:10*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/25/18 14:10*	*1*
4-Bromofluorobenzene (Surr)	*102*		*73 - 120*		*10/25/18 14:10*	*1*

Client Sample ID: MW-3

Lab Sample ID: 480-143539-3

Date Collected: 10/16/18 15:15
Date Received: 10/17/18 01:00

Matrix: Water

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	97		75 - 123		10/25/18 14:10	1

Method: 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20		ug/L		10/23/18 14:15	10/24/18 13:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	82		46 - 130	10/23/18 14:15	10/24/18 13:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**10**		3.0		ug/L		10/18/18 15:22	10/19/18 17:23	1
Barium	**170**		5.0		ug/L		10/18/18 15:22	10/19/18 17:23	1
Cadmium	ND		0.50		ug/L		10/18/18 15:22	10/19/18 17:23	1
Calcium	**33000**		500		ug/L		10/18/18 15:22	10/19/18 17:23	1
Chromium	**28**		5.0		ug/L		10/18/18 15:22	10/19/18 17:23	1
Copper	**36**		5.0		ug/L		10/18/18 15:22	10/19/18 17:23	1
Iron	**28000**		100		ug/L		10/18/18 15:22	10/19/18 17:23	1
Lead	**30**		2.5		ug/L		10/18/18 15:22	10/19/18 17:23	1
Manganese	**540**		5.0		ug/L		10/18/18 15:22	10/19/18 17:23	1
Selenium	**3.0**		2.5		ug/L		10/18/18 15:22	10/19/18 17:23	1
Silver	ND		1.0		ug/L		10/18/18 15:22	10/19/18 17:23	1
Sodium	**13000**		500		ug/L		10/18/18 15:22	10/19/18 17:23	1
Zinc	**140**		20		ug/L		10/18/18 15:22	10/19/18 17:23	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		10/18/18 09:29	10/19/18 21:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**27**		1.0		mg/L			10/23/18 18:32	2
Sulfate	**20**		4.0		mg/L			10/23/18 18:32	2
Nitrate as N	ND		0.050		mg/L			10/17/18 17:37	1
Chemical Oxygen Demand	**18**		10		mg/L			10/17/18 18:30	1
Cyanide, Total	ND		0.010		mg/L		10/26/18 17:30	10/29/18 09:19	1
Alkalinity, Total	**71**		5.0		mg/L			10/18/18 14:17	1
Total Dissolved Solids	**160**		10		mg/L			10/22/18 23:37	1

Client Sample ID: MW-5D

Lab Sample ID: 480-143539-4

Date Collected: 10/16/18 14:50
Date Received: 10/17/18 01:00

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 12:08	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/25/18 12:08	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 12:08	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/25/18 12:08	1
1,1-Dichloroethane	ND		1.0		ug/L			10/25/18 12:08	1

Client Sample ID: MW-5D

Date Collected: 10/16/18 14:50
Date Received: 10/17/18 01:00

Lab Sample ID: 480-143539-4

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		1.0		ug/L			10/25/18 12:08	1
1,1-Dichloropropene	ND		1.0		ug/L			10/25/18 12:08	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/25/18 12:08	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/25/18 12:08	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/25/18 12:08	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/25/18 12:08	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/25/18 12:08	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/25/18 12:08	1
1,2-Dichloroethane	ND		1.0		ug/L			10/25/18 12:08	1
1,2-Dichloropropane	ND		1.0		ug/L			10/25/18 12:08	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/25/18 12:08	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/25/18 12:08	1
1,3-Dichloropropane	ND		1.0		ug/L			10/25/18 12:08	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/25/18 12:08	1
2,2-Dichloropropane	ND		1.0		ug/L			10/25/18 12:08	1
2-Chlorotoluene	ND		1.0		ug/L			10/25/18 12:08	1
2-Hexanone	ND		5.0		ug/L			10/25/18 12:08	1
4-Chlorotoluene	ND		1.0		ug/L			10/25/18 12:08	1
4-Isopropyltoluene	ND		1.0		ug/L			10/25/18 12:08	1
Acetone	ND		10		ug/L			10/25/18 12:08	1
Benzene	ND		1.0		ug/L			10/25/18 12:08	1
Bromobenzene	ND		1.0		ug/L			10/25/18 12:08	1
Bromoform	ND		1.0		ug/L			10/25/18 12:08	1
Bromomethane	ND		1.0		ug/L			10/25/18 12:08	1
Carbon tetrachloride	ND		1.0		ug/L			10/25/18 12:08	1
Chlorobenzene	**2.5**		1.0		ug/L			10/25/18 12:08	1
Bromochloromethane	ND		1.0		ug/L			10/25/18 12:08	1
Dibromochloromethane	ND		1.0		ug/L			10/25/18 12:08	1
Chloroethane	ND		1.0		ug/L			10/25/18 12:08	1
Chloroform	ND		1.0		ug/L			10/25/18 12:08	1
Chloromethane	ND		1.0		ug/L			10/25/18 12:08	1
cis-1,2-Dichloroethene	**2.1**		1.0		ug/L			10/25/18 12:08	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 12:08	1
Dibromomethane	ND		1.0		ug/L			10/25/18 12:08	1
Bromodichloromethane	ND		1.0		ug/L			10/25/18 12:08	1
Ethylbenzene	ND		1.0		ug/L			10/25/18 12:08	1
1,2-Dibromoethane	ND		1.0		ug/L			10/25/18 12:08	1
Hexachlorobutadiene	ND		1.0		ug/L			10/25/18 12:08	1
Isopropylbenzene	ND		1.0		ug/L			10/25/18 12:08	1
2-Butanone (MEK)	ND		10		ug/L			10/25/18 12:08	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/25/18 12:08	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/25/18 12:08	1
Methylene Chloride	ND		1.0		ug/L			10/25/18 12:08	1
m,p-Xylene	ND		2.0		ug/L			10/25/18 12:08	1
Naphthalene	ND		1.0		ug/L			10/25/18 12:08	1
n-Butylbenzene	ND		1.0		ug/L			10/25/18 12:08	1
N-Propylbenzene	ND		1.0		ug/L			10/25/18 12:08	1
o-Xylene	ND		1.0		ug/L			10/25/18 12:08	1
sec-Butylbenzene	ND		1.0		ug/L			10/25/18 12:08	1

Client Sample ID: MW-5D
Date Collected: 10/16/18 14:50
Date Received: 10/17/18 01:00

Lab Sample ID: 480-143539-4
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0		ug/L			10/25/18 12:08	1
tert-Butylbenzene	ND		1.0		ug/L			10/25/18 12:08	1
Tetrachloroethene	ND		1.0		ug/L			10/25/18 12:08	1
Toluene	ND		1.0		ug/L			10/25/18 12:08	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/25/18 12:08	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 12:08	1
Trichloroethene	ND		1.0		ug/L			10/25/18 12:08	1
Trichlorofluoromethane	ND		1.0		ug/L			10/25/18 12:08	1
Vinyl chloride	**3.8**		1.0		ug/L			10/25/18 12:08	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/25/18 12:08*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*118*		*77 - 120*		*10/25/18 12:08*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/25/18 12:08*	*1*
4-Bromofluorobenzene (Surr)	*100*		*73 - 120*		*10/25/18 12:08*	*1*
Dibromofluoromethane (Surr)	*109*		*75 - 123*		*10/25/18 12:08*	*1*

Method: 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**2.5**		0.20		ug/L		10/23/18 14:15	10/24/18 13:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*84*		*46 - 130*	*10/23/18 14:15*	*10/24/18 13:34*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**38**		3.0		ug/L		10/23/18 10:05	10/24/18 14:05	1
Barium	**28**		5.0		ug/L		10/23/18 10:05	10/24/18 14:05	1
Cadmium	ND		0.50		ug/L		10/23/18 10:05	10/24/18 14:05	1
Calcium	**52000**		500		ug/L		10/23/18 10:05	10/24/18 14:05	1
Chromium	ND		5.0		ug/L		10/23/18 10:05	10/24/18 14:05	1
Copper	ND		5.0		ug/L		10/23/18 10:05	10/24/18 14:05	1
Iron	**21000**		100		ug/L		10/23/18 10:05	10/24/18 14:05	1
Lead	ND		2.5		ug/L		10/23/18 10:05	10/24/18 14:05	1
Manganese	**7100**		5.0		ug/L		10/23/18 10:05	10/24/18 14:05	1
Selenium	ND		2.5		ug/L		10/23/18 10:05	10/24/18 14:05	1
Silver	ND		1.0		ug/L		10/23/18 10:05	10/24/18 14:05	1
Sodium	**36000**		500		ug/L		10/23/18 10:05	10/24/18 14:05	1
Zinc	ND		20		ug/L		10/23/18 10:05	10/24/18 14:05	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		10/25/18 12:21	10/26/18 13:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**66**		0.50		mg/L			10/23/18 18:46	1
Sulfate	**18**		2.0		mg/L			10/23/18 18:46	1
Nitrate as N	**0.089**		0.050		mg/L			10/17/18 20:19	1

Client Sample ID: MW-5D
Lab Sample ID: 480-143539-4
Date Collected: 10/16/18 14:50
Matrix: Water
Date Received: 10/17/18 01:00

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	**14**		10		mg/L			10/30/18 18:49	1
Cyanide, Total	**0.014**	* ^ B	0.010		mg/L		10/30/18 10:10	10/30/18 18:05	1
Cyanide, Total	ND	H	0.010		mg/L		11/06/18 17:29	11/07/18 12:30	1
Alkalinity, Total	**210**		5.0		mg/L			10/18/18 14:22	1
Total Dissolved Solids	**320**		10		mg/L			10/22/18 23:37	1

Client Sample ID: MW-5S
Lab Sample ID: 480-143539-5
Date Collected: 10/16/18 14:45
Matrix: Water
Date Received: 10/17/18 01:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 12:32	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/25/18 12:32	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 12:32	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/25/18 12:32	1
1,1-Dichloroethane	ND		1.0		ug/L			10/25/18 12:32	1
1,1-Dichloroethene	ND		1.0		ug/L			10/25/18 12:32	1
1,1-Dichloropropene	ND		1.0		ug/L			10/25/18 12:32	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/25/18 12:32	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/25/18 12:32	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/25/18 12:32	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/25/18 12:32	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/25/18 12:32	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/25/18 12:32	1
1,2-Dichloroethane	ND		1.0		ug/L			10/25/18 12:32	1
1,2-Dichloropropane	ND		1.0		ug/L			10/25/18 12:32	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/25/18 12:32	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/25/18 12:32	1
1,3-Dichloropropane	ND		1.0		ug/L			10/25/18 12:32	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/25/18 12:32	1
2,2-Dichloropropane	ND		1.0		ug/L			10/25/18 12:32	1
2-Chlorotoluene	ND		1.0		ug/L			10/25/18 12:32	1
2-Hexanone	ND		5.0		ug/L			10/25/18 12:32	1
4-Chlorotoluene	ND		1.0		ug/L			10/25/18 12:32	1
4-Isopropyltoluene	ND		1.0		ug/L			10/25/18 12:32	1
Acetone	ND		10		ug/L			10/25/18 12:32	1
Benzene	ND		1.0		ug/L			10/25/18 12:32	1
Bromobenzene	ND		1.0		ug/L			10/25/18 12:32	1
Bromoform	ND		1.0		ug/L			10/25/18 12:32	1
Bromomethane	ND		1.0		ug/L			10/25/18 12:32	1
Carbon tetrachloride	ND		1.0		ug/L			10/25/18 12:32	1
Chlorobenzene	ND		1.0		ug/L			10/25/18 12:32	1
Bromochloromethane	ND		1.0		ug/L			10/25/18 12:32	1
Dibromochloromethane	ND		1.0		ug/L			10/25/18 12:32	1
Chloroethane	ND		1.0		ug/L			10/25/18 12:32	1
Chloroform	ND		1.0		ug/L			10/25/18 12:32	1
Chloromethane	ND		1.0		ug/L			10/25/18 12:32	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/25/18 12:32	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 12:32	1

Client Sample ID: MW-5S
Date Collected: 10/16/18 14:45
Date Received: 10/17/18 01:00

Lab Sample ID: 480-143539-5
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromomethane	ND		1.0		ug/L			10/25/18 12:32	1
Bromodichloromethane	ND		1.0		ug/L			10/25/18 12:32	1
Ethylbenzene	ND		1.0		ug/L			10/25/18 12:32	1
1,2-Dibromoethane	ND		1.0		ug/L			10/25/18 12:32	1
Hexachlorobutadiene	ND		1.0		ug/L			10/25/18 12:32	1
Isopropylbenzene	ND		1.0		ug/L			10/25/18 12:32	1
2-Butanone (MEK)	ND		10		ug/L			10/25/18 12:32	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/25/18 12:32	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/25/18 12:32	1
Methylene Chloride	ND		1.0		ug/L			10/25/18 12:32	1
m,p-Xylene	ND		2.0		ug/L			10/25/18 12:32	1
Naphthalene	ND		1.0		ug/L			10/25/18 12:32	1
n-Butylbenzene	ND		1.0		ug/L			10/25/18 12:32	1
N-Propylbenzene	ND		1.0		ug/L			10/25/18 12:32	1
o-Xylene	ND		1.0		ug/L			10/25/18 12:32	1
sec-Butylbenzene	ND		1.0		ug/L			10/25/18 12:32	1
Styrene	ND		1.0		ug/L			10/25/18 12:32	1
tert-Butylbenzene	ND		1.0		ug/L			10/25/18 12:32	1
Tetrachloroethene	ND		1.0		ug/L			10/25/18 12:32	1
Toluene	ND		1.0		ug/L			10/25/18 12:32	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/25/18 12:32	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 12:32	1
Trichloroethene	ND		1.0		ug/L			10/25/18 12:32	1
Trichlorofluoromethane	ND		1.0		ug/L			10/25/18 12:32	1
Vinyl chloride	ND		1.0		ug/L			10/25/18 12:32	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/25/18 12:32*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*117*		*77 - 120*		*10/25/18 12:32*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*10/25/18 12:32*	*1*
4-Bromofluorobenzene (Surr)	*101*		*73 - 120*		*10/25/18 12:32*	*1*
Dibromofluoromethane (Surr)	*110*		*75 - 123*		*10/25/18 12:32*	*1*

Method: 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20		ug/L		10/23/18 14:15	10/24/18 13:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*66*		*46 - 130*	*10/23/18 14:15*	*10/24/18 13:48*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**8.3**		3.0		ug/L		10/18/18 15:22	10/19/18 17:45	1
Barium	**150**		5.0		ug/L		10/18/18 15:22	10/19/18 17:45	1
Cadmium	ND		0.50		ug/L		10/18/18 15:22	10/19/18 17:45	1
Calcium	**8500**		500		ug/L		10/18/18 15:22	10/19/18 17:45	1
Chromium	**16**		5.0		ug/L		10/18/18 15:22	10/19/18 17:45	1
Copper	**15**		5.0		ug/L		10/18/18 15:22	10/19/18 17:45	1
Iron	**18000**		100		ug/L		10/18/18 15:22	10/19/18 17:45	1

Client Sample ID: MW-5S

Lab Sample ID: 480-143539-5

Date Collected: 10/16/18 14:45
Date Received: 10/17/18 01:00
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**14**		2.5		ug/L		10/18/18 15:22	10/19/18 17:45	1
Manganese	**510**		5.0		ug/L		10/18/18 15:22	10/19/18 17:45	1
Selenium	ND		2.5		ug/L		10/18/18 15:22	10/19/18 17:45	1
Silver	ND		1.0		ug/L		10/18/18 15:22	10/19/18 17:45	1
Sodium	**5100**		500		ug/L		10/18/18 15:22	10/19/18 17:45	1
Zinc	**58**		20		ug/L		10/18/18 15:22	10/19/18 17:45	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		10/18/18 09:29	10/19/18 21:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.1**		0.50		mg/L			10/24/18 21:07	1
Sulfate	**5.0**		2.0		mg/L			10/24/18 21:07	1
Nitrate as N	**0.082**		0.050		mg/L			10/17/18 20:23	1
Chemical Oxygen Demand	ND		10		mg/L			10/17/18 18:30	1
Cyanide, Total	ND	* ^	0.010		mg/L		10/30/18 10:10	10/30/18 18:06	1
Cyanide, Total	ND	H	0.010		mg/L		11/06/18 17:29	11/07/18 12:33	1
Alkalinity, Total	**13**		5.0		mg/L			10/18/18 14:26	1
Total Dissolved Solids	**38**		10		mg/L			10/22/18 23:37	1

Client Sample ID: MW-6D

Lab Sample ID: 480-143539-6

Date Collected: 10/16/18 13:45
Date Received: 10/17/18 01:00
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 12:56	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/25/18 12:56	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 12:56	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/25/18 12:56	1
1,1-Dichloroethane	ND		1.0		ug/L			10/25/18 12:56	1
1,1-Dichloroethene	ND		1.0		ug/L			10/25/18 12:56	1
1,1-Dichloropropene	ND		1.0		ug/L			10/25/18 12:56	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/25/18 12:56	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/25/18 12:56	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/25/18 12:56	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/25/18 12:56	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/25/18 12:56	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/25/18 12:56	1
1,2-Dichloroethane	ND		1.0		ug/L			10/25/18 12:56	1
1,2-Dichloropropane	ND		1.0		ug/L			10/25/18 12:56	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/25/18 12:56	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/25/18 12:56	1
1,3-Dichloropropane	ND		1.0		ug/L			10/25/18 12:56	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/25/18 12:56	1
2,2-Dichloropropane	ND		1.0		ug/L			10/25/18 12:56	1
2-Chlorotoluene	ND		1.0		ug/L			10/25/18 12:56	1
2-Hexanone	ND		5.0		ug/L			10/25/18 12:56	1

Client: Weston & Sampson Engineers
Project/Site: Dighton Landfill

TestAmerica Job ID: 480-143539-1

Client Sample ID: MW-6D
Date Collected: 10/16/18 13:45
Date Received: 10/17/18 01:00

Lab Sample ID: 480-143539-6
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		1.0		ug/L			10/25/18 12:56	1
4-Isopropyltoluene	ND		1.0		ug/L			10/25/18 12:56	1
Acetone	ND		10		ug/L			10/25/18 12:56	1
Benzene	ND		1.0		ug/L			10/25/18 12:56	1
Bromobenzene	ND		1.0		ug/L			10/25/18 12:56	1
Bromoform	ND		1.0		ug/L			10/25/18 12:56	1
Bromomethane	ND		1.0		ug/L			10/25/18 12:56	1
Carbon tetrachloride	ND		1.0		ug/L			10/25/18 12:56	1
Chlorobenzene	ND		1.0		ug/L			10/25/18 12:56	1
Bromochloromethane	ND		1.0		ug/L			10/25/18 12:56	1
Dibromochloromethane	ND		1.0		ug/L			10/25/18 12:56	1
Chloroethane	ND		1.0		ug/L			10/25/18 12:56	1
Chloroform	ND		1.0		ug/L			10/25/18 12:56	1
Chloromethane	ND		1.0		ug/L			10/25/18 12:56	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/25/18 12:56	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 12:56	1
Dibromomethane	ND		1.0		ug/L			10/25/18 12:56	1
Bromodichloromethane	ND		1.0		ug/L			10/25/18 12:56	1
Ethylbenzene	ND		1.0		ug/L			10/25/18 12:56	1
1,2-Dibromoethane	ND		1.0		ug/L			10/25/18 12:56	1
Hexachlorobutadiene	ND		1.0		ug/L			10/25/18 12:56	1
Isopropylbenzene	ND		1.0		ug/L			10/25/18 12:56	1
2-Butanone (MEK)	ND		10		ug/L			10/25/18 12:56	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/25/18 12:56	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/25/18 12:56	1
Methylene Chloride	ND		1.0		ug/L			10/25/18 12:56	1
m,p-Xylene	ND		2.0		ug/L			10/25/18 12:56	1
Naphthalene	ND		1.0		ug/L			10/25/18 12:56	1
n-Butylbenzene	ND		1.0		ug/L			10/25/18 12:56	1
N-Propylbenzene	ND		1.0		ug/L			10/25/18 12:56	1
o-Xylene	ND		1.0		ug/L			10/25/18 12:56	1
sec-Butylbenzene	ND		1.0		ug/L			10/25/18 12:56	1
Styrene	ND		1.0		ug/L			10/25/18 12:56	1
tert-Butylbenzene	ND		1.0		ug/L			10/25/18 12:56	1
Tetrachloroethene	ND		1.0		ug/L			10/25/18 12:56	1
Toluene	ND		1.0		ug/L			10/25/18 12:56	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/25/18 12:56	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 12:56	1
Trichloroethene	ND		1.0		ug/L			10/25/18 12:56	1
Trichlorofluoromethane	ND		1.0		ug/L			10/25/18 12:56	1
Vinyl chloride	ND		1.0		ug/L			10/25/18 12:56	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/25/18 12:56*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*112*		*77 - 120*		*10/25/18 12:56*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/25/18 12:56*	*1*
4-Bromofluorobenzene (Surr)	*100*		*73 - 120*		*10/25/18 12:56*	*1*
Dibromofluoromethane (Surr)	*101*		*75 - 123*		*10/25/18 12:56*	*1*

Method: 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20		ug/L		10/23/18 14:15	10/24/18 14:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*83*		*46 - 130*	*10/23/18 14:15*	*10/24/18 14:02*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		3.0		ug/L		10/18/18 15:22	10/19/18 17:09	1
Barium	**21**		5.0		ug/L		10/18/18 15:22	10/19/18 17:09	1
Cadmium	ND		0.50		ug/L		10/18/18 15:22	10/19/18 17:09	1
Calcium	**25000**		500		ug/L		10/18/18 15:22	10/19/18 17:09	1
Chromium	ND		5.0		ug/L		10/18/18 15:22	10/19/18 17:09	1
Copper	ND		5.0		ug/L		10/18/18 15:22	10/19/18 17:09	1
Iron	**1300**		100		ug/L		10/18/18 15:22	10/19/18 17:09	1
Lead	ND		2.5		ug/L		10/18/18 15:22	10/19/18 17:09	1
Manganese	**1100**		5.0		ug/L		10/18/18 15:22	10/19/18 17:09	1
Selenium	ND		2.5		ug/L		10/18/18 15:22	10/19/18 17:09	1
Silver	ND		1.0		ug/L		10/18/18 15:22	10/19/18 17:09	1
Sodium	**12000**		500		ug/L		10/18/18 15:22	10/19/18 17:09	1
Zinc	ND		20		ug/L		10/18/18 15:22	10/19/18 17:09	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		10/18/18 09:29	10/19/18 21:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**13**		0.50		mg/L			10/23/18 19:15	1
Sulfate	**43**		2.0		mg/L			10/23/18 19:15	1
Nitrate as N	ND		0.050		mg/L			10/17/18 17:46	1
Chemical Oxygen Demand	ND		10		mg/L			10/17/18 18:30	1
Cyanide, Total	ND	* ^	0.010		mg/L		10/30/18 10:10	10/30/18 18:08	1
Cyanide, Total	ND	H	0.010		mg/L		11/06/18 17:29	11/07/18 12:36	1
Alkalinity, Total	**45**		5.0		mg/L			10/18/18 14:32	1
Total Dissolved Solids	**160**		10		mg/L			10/22/18 23:38	1

Client Sample ID: MW-6S

Lab Sample ID: 480-143539-7

Date Collected: 10/16/18 13:15
Matrix: Water
Date Received: 10/17/18 01:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 13:20	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/25/18 13:20	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 13:20	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/25/18 13:20	1
1,1-Dichloroethane	ND		1.0		ug/L			10/25/18 13:20	1
1,1-Dichloroethene	ND		1.0		ug/L			10/25/18 13:20	1
1,1-Dichloropropene	ND		1.0		ug/L			10/25/18 13:20	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/25/18 13:20	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/25/18 13:20	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/25/18 13:20	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/25/18 13:20	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/25/18 13:20	1

Client Sample ID: MW-6S
Date Collected: 10/16/18 13:15
Date Received: 10/17/18 01:00

Lab Sample ID: 480-143539-7
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		1.0		ug/L			10/25/18 13:20	1
1,2-Dichloroethane	ND		1.0		ug/L			10/25/18 13:20	1
1,2-Dichloropropane	ND		1.0		ug/L			10/25/18 13:20	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/25/18 13:20	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/25/18 13:20	1
1,3-Dichloropropane	ND		1.0		ug/L			10/25/18 13:20	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/25/18 13:20	1
2,2-Dichloropropane	ND		1.0		ug/L			10/25/18 13:20	1
2-Chlorotoluene	ND		1.0		ug/L			10/25/18 13:20	1
2-Hexanone	ND		5.0		ug/L			10/25/18 13:20	1
4-Chlorotoluene	ND		1.0		ug/L			10/25/18 13:20	1
4-Isopropyltoluene	ND		1.0		ug/L			10/25/18 13:20	1
Acetone	ND		10		ug/L			10/25/18 13:20	1
Benzene	ND		1.0		ug/L			10/25/18 13:20	1
Bromobenzene	ND		1.0		ug/L			10/25/18 13:20	1
Bromoform	ND		1.0		ug/L			10/25/18 13:20	1
Bromomethane	ND		1.0		ug/L			10/25/18 13:20	1
Carbon tetrachloride	ND		1.0		ug/L			10/25/18 13:20	1
Chlorobenzene	ND		1.0		ug/L			10/25/18 13:20	1
Bromochloromethane	ND		1.0		ug/L			10/25/18 13:20	1
Dibromochloromethane	ND		1.0		ug/L			10/25/18 13:20	1
Chloroethane	ND		1.0		ug/L			10/25/18 13:20	1
Chloroform	ND		1.0		ug/L			10/25/18 13:20	1
Chloromethane	ND		1.0		ug/L			10/25/18 13:20	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/25/18 13:20	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 13:20	1
Dibromomethane	ND		1.0		ug/L			10/25/18 13:20	1
Bromodichloromethane	ND		1.0		ug/L			10/25/18 13:20	1
Ethylbenzene	ND		1.0		ug/L			10/25/18 13:20	1
1,2-Dibromoethane	ND		1.0		ug/L			10/25/18 13:20	1
Hexachlorobutadiene	ND		1.0		ug/L			10/25/18 13:20	1
Isopropylbenzene	ND		1.0		ug/L			10/25/18 13:20	1
2-Butanone (MEK)	ND		10		ug/L			10/25/18 13:20	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/25/18 13:20	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/25/18 13:20	1
Methylene Chloride	ND		1.0		ug/L			10/25/18 13:20	1
m,p-Xylene	ND		2.0		ug/L			10/25/18 13:20	1
Naphthalene	ND		1.0		ug/L			10/25/18 13:20	1
n-Butylbenzene	ND		1.0		ug/L			10/25/18 13:20	1
N-Propylbenzene	ND		1.0		ug/L			10/25/18 13:20	1
o-Xylene	ND		1.0		ug/L			10/25/18 13:20	1
sec-Butylbenzene	ND		1.0		ug/L			10/25/18 13:20	1
Styrene	ND		1.0		ug/L			10/25/18 13:20	1
tert-Butylbenzene	ND		1.0		ug/L			10/25/18 13:20	1
Tetrachloroethene	ND		1.0		ug/L			10/25/18 13:20	1
Toluene	ND		1.0		ug/L			10/25/18 13:20	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/25/18 13:20	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 13:20	1
Trichloroethene	ND		1.0		ug/L			10/25/18 13:20	1

Client Sample ID: MW-6S **Lab Sample ID: 480-143539-7**
Date Collected: 10/16/18 13:15 **Matrix: Water**
Date Received: 10/17/18 01:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	ND		1.0		ug/L			10/25/18 13:20	1
Vinyl chloride	ND		1.0		ug/L			10/25/18 13:20	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/25/18 13:20*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*77 - 120*		*10/25/18 13:20*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/25/18 13:20*	*1*
4-Bromofluorobenzene (Surr)	*103*		*73 - 120*		*10/25/18 13:20*	*1*
Dibromofluoromethane (Surr)	*101*		*75 - 123*		*10/25/18 13:20*	*1*

Method: 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**1.9**		0.20		ug/L		10/23/18 14:15	10/24/18 14:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*74*		*46 - 130*	*10/23/18 14:15*	*10/24/18 14:17*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**4.9**		3.0		ug/L		10/18/18 15:22	10/19/18 17:13	1
Barium	**53**		5.0		ug/L		10/18/18 15:22	10/19/18 17:13	1
Cadmium	**3.9**		0.50		ug/L		10/18/18 15:22	10/19/18 17:13	1
Calcium	**8000**		500		ug/L		10/18/18 15:22	10/19/18 17:13	1
Chromium	**7.7**		5.0		ug/L		10/18/18 15:22	10/19/18 17:13	1
Copper	**13**		5.0		ug/L		10/18/18 15:22	10/19/18 17:13	1
Iron	**14000**		100		ug/L		10/18/18 15:22	10/19/18 17:13	1
Lead	**11**		2.5		ug/L		10/18/18 15:22	10/19/18 17:13	1
Manganese	**190**		5.0		ug/L		10/18/18 15:22	10/19/18 17:13	1
Selenium	ND		2.5		ug/L		10/18/18 15:22	10/19/18 17:13	1
Silver	ND		1.0		ug/L		10/18/18 15:22	10/19/18 17:13	1
Sodium	**7900**		500		ug/L		10/18/18 15:22	10/19/18 17:13	1
Zinc	**48**		20		ug/L		10/18/18 15:22	10/19/18 17:13	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		10/18/18 09:29	10/19/18 21:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**7.6**		0.50		mg/L			10/23/18 19:30	1
Sulfate	**8.7**		2.0		mg/L			10/23/18 19:30	1
Nitrate as N	ND		0.050		mg/L			10/17/18 17:47	1
Chemical Oxygen Demand	ND		10		mg/L			10/17/18 18:30	1
Cyanide, Total	ND	* ^	0.010		mg/L		10/30/18 10:10	10/30/18 18:11	1
Cyanide, Total	ND	H	0.010		mg/L		11/06/18 17:29	11/07/18 12:38	1
Alkalinity, Total	ND		5.0		mg/L			10/18/18 14:37	1
Total Dissolved Solids	**230**		10		mg/L			10/22/18 23:38	1

Client Sample ID: MW-7D

Date Collected: 10/16/18 10:45
Date Received: 10/17/18 01:00

Lab Sample ID: 480-143539-8

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 13:44	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/25/18 13:44	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 13:44	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/25/18 13:44	1
1,1-Dichloroethane	ND		1.0		ug/L			10/25/18 13:44	1
1,1-Dichloroethene	ND		1.0		ug/L			10/25/18 13:44	1
1,1-Dichloropropene	ND		1.0		ug/L			10/25/18 13:44	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/25/18 13:44	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/25/18 13:44	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/25/18 13:44	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/25/18 13:44	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/25/18 13:44	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/25/18 13:44	1
1,2-Dichloroethane	ND		1.0		ug/L			10/25/18 13:44	1
1,2-Dichloropropane	ND		1.0		ug/L			10/25/18 13:44	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/25/18 13:44	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/25/18 13:44	1
1,3-Dichloropropane	ND		1.0		ug/L			10/25/18 13:44	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/25/18 13:44	1
2,2-Dichloropropane	ND		1.0		ug/L			10/25/18 13:44	1
2-Chlorotoluene	ND		1.0		ug/L			10/25/18 13:44	1
2-Hexanone	ND		5.0		ug/L			10/25/18 13:44	1
4-Chlorotoluene	ND		1.0		ug/L			10/25/18 13:44	1
4-Isopropyltoluene	ND		1.0		ug/L			10/25/18 13:44	1
Acetone	ND		10		ug/L			10/25/18 13:44	1
Benzene	ND		1.0		ug/L			10/25/18 13:44	1
Bromobenzene	ND		1.0		ug/L			10/25/18 13:44	1
Bromoform	ND		1.0		ug/L			10/25/18 13:44	1
Bromomethane	ND		1.0		ug/L			10/25/18 13:44	1
Carbon tetrachloride	ND		1.0		ug/L			10/25/18 13:44	1
Chlorobenzene	ND		1.0		ug/L			10/25/18 13:44	1
Bromochloromethane	ND		1.0		ug/L			10/25/18 13:44	1
Dibromochloromethane	ND		1.0		ug/L			10/25/18 13:44	1
Chloroethane	ND		1.0		ug/L			10/25/18 13:44	1
Chloroform	ND		1.0		ug/L			10/25/18 13:44	1
Chloromethane	ND		1.0		ug/L			10/25/18 13:44	1
cis-1,2-Dichloroethene	**1.8**		1.0		ug/L			10/25/18 13:44	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 13:44	1
Dibromomethane	ND		1.0		ug/L			10/25/18 13:44	1
Bromodichloromethane	ND		1.0		ug/L			10/25/18 13:44	1
Ethylbenzene	ND		1.0		ug/L			10/25/18 13:44	1
1,2-Dibromoethane	ND		1.0		ug/L			10/25/18 13:44	1
Hexachlorobutadiene	ND		1.0		ug/L			10/25/18 13:44	1
Isopropylbenzene	ND		1.0		ug/L			10/25/18 13:44	1
2-Butanone (MEK)	ND		10		ug/L			10/25/18 13:44	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/25/18 13:44	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/25/18 13:44	1
Methylene Chloride	ND		1.0		ug/L			10/25/18 13:44	1
m,p-Xylene	ND		2.0		ug/L			10/25/18 13:44	1

Client Sample ID: MW-7D

Lab Sample ID: 480-143539-8

Date Collected: 10/16/18 10:45
Date Received: 10/17/18 01:00

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		1.0		ug/L			10/25/18 13:44	1
n-Butylbenzene	ND		1.0		ug/L			10/25/18 13:44	1
N-Propylbenzene	ND		1.0		ug/L			10/25/18 13:44	1
o-Xylene	ND		1.0		ug/L			10/25/18 13:44	1
sec-Butylbenzene	ND		1.0		ug/L			10/25/18 13:44	1
Styrene	ND		1.0		ug/L			10/25/18 13:44	1
tert-Butylbenzene	ND		1.0		ug/L			10/25/18 13:44	1
Tetrachloroethene	ND		1.0		ug/L			10/25/18 13:44	1
Toluene	ND		1.0		ug/L			10/25/18 13:44	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/25/18 13:44	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 13:44	1
Trichloroethene	ND		1.0		ug/L			10/25/18 13:44	1
Trichlorofluoromethane	ND		1.0		ug/L			10/25/18 13:44	1
Vinyl chloride	**1.0**		1.0		ug/L			10/25/18 13:44	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/25/18 13:44*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*113*		*77 - 120*		*10/25/18 13:44*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*10/25/18 13:44*	*1*
4-Bromofluorobenzene (Surr)	*100*		*73 - 120*		*10/25/18 13:44*	*1*
Dibromofluoromethane (Surr)	*105*		*75 - 123*		*10/25/18 13:44*	*1*

Method: 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**4.0**		0.20		ug/L		10/23/18 14:15	10/24/18 14:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*84*		*46 - 130*	*10/23/18 14:15*	*10/24/18 14:31*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**15**		3.0		ug/L		10/18/18 15:22	10/19/18 17:34	1
Barium	**24**		5.0		ug/L		10/18/18 15:22	10/19/18 17:34	1
Cadmium	ND		0.50		ug/L		10/18/18 15:22	10/19/18 17:34	1
Calcium	**50000**		500		ug/L		10/18/18 15:22	10/19/18 17:34	1
Chromium	ND		5.0		ug/L		10/18/18 15:22	10/19/18 17:34	1
Copper	ND		5.0		ug/L		10/18/18 15:22	10/19/18 17:34	1
Iron	**4500**		100		ug/L		10/18/18 15:22	10/19/18 17:34	1
Lead	ND		2.5		ug/L		10/18/18 15:22	10/19/18 17:34	1
Manganese	**4700**		5.0		ug/L		10/18/18 15:22	10/19/18 17:34	1
Selenium	ND		2.5		ug/L		10/18/18 15:22	10/19/18 17:34	1
Silver	ND		1.0		ug/L		10/18/18 15:22	10/19/18 17:34	1
Sodium	**28000**		500		ug/L		10/18/18 15:22	10/19/18 17:34	1
Zinc	ND		20		ug/L		10/18/18 15:22	10/19/18 17:34	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		10/18/18 08:28	10/19/18 14:27	1

Client Sample Results

Client: Weston & Sampson Engineers
Project/Site: Dighton Landfill

TestAmerica Job ID: 480-143539-1

Client Sample ID: MW-7D

Lab Sample ID: 480-143539-8
Date Collected: 10/16/18 10:45
Matrix: Water
Date Received: 10/17/18 01:00

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**44**		0.50		mg/L			10/23/18 20:43	1
Sulfate	**12**		2.0		mg/L			10/23/18 20:43	1
Nitrate as N	ND		0.050		mg/L			10/17/18 17:49	1
Chemical Oxygen Demand	**16**		10		mg/L			10/17/18 18:30	1
Cyanide, Total	ND	* ^	0.010		mg/L		10/30/18 10:10	10/30/18 18:12	1
Cyanide, Total	**0.013**	**H**	0.010		mg/L		11/06/18 17:29	11/07/18 12:39	1
Alkalinity, Total	**220**		5.0		mg/L			10/18/18 15:06	1
Total Dissolved Solids	**310**		10		mg/L			10/22/18 23:38	1

Client Sample ID: MW-7S

Lab Sample ID: 480-143539-9
Date Collected: 10/16/18 10:30
Matrix: Water
Date Received: 10/17/18 01:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 14:07	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/25/18 14:07	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 14:07	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/25/18 14:07	1
1,1-Dichloroethane	ND		1.0		ug/L			10/25/18 14:07	1
1,1-Dichloroethene	ND		1.0		ug/L			10/25/18 14:07	1
1,1-Dichloropropene	ND		1.0		ug/L			10/25/18 14:07	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/25/18 14:07	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/25/18 14:07	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/25/18 14:07	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/25/18 14:07	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/25/18 14:07	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/25/18 14:07	1
1,2-Dichloroethane	ND		1.0		ug/L			10/25/18 14:07	1
1,2-Dichloropropane	ND		1.0		ug/L			10/25/18 14:07	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/25/18 14:07	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/25/18 14:07	1
1,3-Dichloropropane	ND		1.0		ug/L			10/25/18 14:07	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/25/18 14:07	1
2,2-Dichloropropane	ND		1.0		ug/L			10/25/18 14:07	1
2-Chlorotoluene	ND		1.0		ug/L			10/25/18 14:07	1
2-Hexanone	ND		5.0		ug/L			10/25/18 14:07	1
4-Chlorotoluene	ND		1.0		ug/L			10/25/18 14:07	1
4-Isopropyltoluene	ND		1.0		ug/L			10/25/18 14:07	1
Acetone	ND		10		ug/L			10/25/18 14:07	1
Benzene	ND		1.0		ug/L			10/25/18 14:07	1
Bromobenzene	ND		1.0		ug/L			10/25/18 14:07	1
Bromoform	ND		1.0		ug/L			10/25/18 14:07	1
Bromomethane	ND		1.0		ug/L			10/25/18 14:07	1
Carbon tetrachloride	ND		1.0		ug/L			10/25/18 14:07	1
Chlorobenzene	**1.8**		1.0		ug/L			10/25/18 14:07	1
Bromochloromethane	ND		1.0		ug/L			10/25/18 14:07	1
Dibromochloromethane	ND		1.0		ug/L			10/25/18 14:07	1
Chloroethane	ND		1.0		ug/L			10/25/18 14:07	1
Chloroform	ND		1.0		ug/L			10/25/18 14:07	1

Client Sample ID: MW-7S
Date Collected: 10/16/18 10:30
Date Received: 10/17/18 01:00

Lab Sample ID: 480-143539-9
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	ND		1.0		ug/L			10/25/18 14:07	1
cis-1,2-Dichloroethene	**1.1**		1.0		ug/L			10/25/18 14:07	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 14:07	1
Dibromomethane	ND		1.0		ug/L			10/25/18 14:07	1
Bromodichloromethane	ND		1.0		ug/L			10/25/18 14:07	1
Ethylbenzene	ND		1.0		ug/L			10/25/18 14:07	1
1,2-Dibromoethane	ND		1.0		ug/L			10/25/18 14:07	1
Hexachlorobutadiene	ND		1.0		ug/L			10/25/18 14:07	1
Isopropylbenzene	ND		1.0		ug/L			10/25/18 14:07	1
2-Butanone (MEK)	ND		10		ug/L			10/25/18 14:07	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/25/18 14:07	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/25/18 14:07	1
Methylene Chloride	ND		1.0		ug/L			10/25/18 14:07	1
m,p-Xylene	ND		2.0		ug/L			10/25/18 14:07	1
Naphthalene	ND		1.0		ug/L			10/25/18 14:07	1
n-Butylbenzene	ND		1.0		ug/L			10/25/18 14:07	1
N-Propylbenzene	ND		1.0		ug/L			10/25/18 14:07	1
o-Xylene	ND		1.0		ug/L			10/25/18 14:07	1
sec-Butylbenzene	ND		1.0		ug/L			10/25/18 14:07	1
Styrene	ND		1.0		ug/L			10/25/18 14:07	1
tert-Butylbenzene	ND		1.0		ug/L			10/25/18 14:07	1
Tetrachloroethene	ND		1.0		ug/L			10/25/18 14:07	1
Toluene	ND		1.0		ug/L			10/25/18 14:07	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/25/18 14:07	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 14:07	1
Trichloroethene	ND		1.0		ug/L			10/25/18 14:07	1
Trichlorofluoromethane	ND		1.0		ug/L			10/25/18 14:07	1
Vinyl chloride	ND		1.0		ug/L			10/25/18 14:07	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/25/18 14:07*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*112*		*77 - 120*		*10/25/18 14:07*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*10/25/18 14:07*	*1*
4-Bromofluorobenzene (Surr)	*98*		*73 - 120*		*10/25/18 14:07*	*1*
Dibromofluoromethane (Surr)	*102*		*75 - 123*		*10/25/18 14:07*	*1*

Method: 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**4.5**		0.20		ug/L		10/23/18 14:15	10/24/18 14:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*84*		*46 - 130*	*10/23/18 14:15*	*10/24/18 14:45*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**89**		3.0		ug/L		10/18/18 15:22	10/19/18 17:27	1
Barium	**260**		5.0		ug/L		10/18/18 15:22	10/19/18 17:27	1
Cadmium	**1.1**		0.50		ug/L		10/18/18 15:22	10/19/18 17:27	1
Calcium	**66000**		500		ug/L		10/18/18 15:22	10/19/18 17:27	1

Client Sample ID: MW-7S

Lab Sample ID: 480-143539-9

Date Collected: 10/16/18 10:30

Matrix: Water

Date Received: 10/17/18 01:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	**30**		5.0		ug/L		10/18/18 15:22	10/19/18 17:27	1
Copper	**71**		5.0		ug/L		10/18/18 15:22	10/19/18 17:27	1
Iron	**58000**		100		ug/L		10/18/18 15:22	10/19/18 17:27	1
Lead	**43**		2.5		ug/L		10/18/18 15:22	10/19/18 17:27	1
Manganese	**8000**		5.0		ug/L		10/18/18 15:22	10/19/18 17:27	1
Selenium	**4.5**		2.5		ug/L		10/18/18 15:22	10/19/18 17:27	1
Silver	ND		1.0		ug/L		10/18/18 15:22	10/19/18 17:27	1
Sodium	**30000**		500		ug/L		10/18/18 15:22	10/19/18 17:27	1
Zinc	**91**		20		ug/L		10/18/18 15:22	10/19/18 17:27	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		10/18/18 09:29	10/19/18 21:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**44**		0.50		mg/L			10/23/18 20:57	1
Sulfate	**4.8**		2.0		mg/L			10/23/18 20:57	1
Nitrate as N	**0.076**		0.050		mg/L			10/17/18 20:24	1
Chemical Oxygen Demand	**15**		10		mg/L			10/17/18 18:30	1
Cyanide, Total	ND	* ^	0.010		mg/L		10/30/18 10:10	10/30/18 18:16	1
Cyanide, Total	ND	H	0.010		mg/L		11/06/18 17:29	11/07/18 12:43	1
Alkalinity, Total	**220**		5.0		mg/L			10/18/18 15:18	1
Total Dissolved Solids	**290**		10		mg/L			10/22/18 23:38	1

Client Sample ID: MW-8D

Lab Sample ID: 480-143539-10

Date Collected: 10/16/18 12:15

Matrix: Water

Date Received: 10/17/18 01:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 14:31	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/25/18 14:31	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 14:31	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/25/18 14:31	1
1,1-Dichloroethane	ND		1.0		ug/L			10/25/18 14:31	1
1,1-Dichloroethene	ND		1.0		ug/L			10/25/18 14:31	1
1,1-Dichloropropene	ND		1.0		ug/L			10/25/18 14:31	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/25/18 14:31	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/25/18 14:31	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/25/18 14:31	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/25/18 14:31	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/25/18 14:31	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/25/18 14:31	1
1,2-Dichloroethane	ND		1.0		ug/L			10/25/18 14:31	1
1,2-Dichloropropane	ND		1.0		ug/L			10/25/18 14:31	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/25/18 14:31	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/25/18 14:31	1
1,3-Dichloropropane	ND		1.0		ug/L			10/25/18 14:31	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/25/18 14:31	1

Client Sample ID: MW-8D
Date Collected: 10/16/18 12:15
Date Received: 10/17/18 01:00

Lab Sample ID: 480-143539-10
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,2-Dichloropropane	ND		1.0		ug/L			10/25/18 14:31	1
2-Chlorotoluene	ND		1.0		ug/L			10/25/18 14:31	1
2-Hexanone	ND		5.0		ug/L			10/25/18 14:31	1
4-Chlorotoluene	ND		1.0		ug/L			10/25/18 14:31	1
4-Isopropyltoluene	ND		1.0		ug/L			10/25/18 14:31	1
Acetone	ND		10		ug/L			10/25/18 14:31	1
Benzene	ND		1.0		ug/L			10/25/18 14:31	1
Bromobenzene	ND		1.0		ug/L			10/25/18 14:31	1
Bromoform	ND		1.0		ug/L			10/25/18 14:31	1
Bromomethane	ND		1.0		ug/L			10/25/18 14:31	1
Carbon tetrachloride	ND		1.0		ug/L			10/25/18 14:31	1
Chlorobenzene	ND		1.0		ug/L			10/25/18 14:31	1
Bromochloromethane	ND		1.0		ug/L			10/25/18 14:31	1
Dibromochloromethane	ND		1.0		ug/L			10/25/18 14:31	1
Chloroethane	ND		1.0		ug/L			10/25/18 14:31	1
Chloroform	ND		1.0		ug/L			10/25/18 14:31	1
Chloromethane	ND		1.0		ug/L			10/25/18 14:31	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/25/18 14:31	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 14:31	1
Dibromomethane	ND		1.0		ug/L			10/25/18 14:31	1
Bromodichloromethane	ND		1.0		ug/L			10/25/18 14:31	1
Ethylbenzene	ND		1.0		ug/L			10/25/18 14:31	1
1,2-Dibromoethane	ND		1.0		ug/L			10/25/18 14:31	1
Hexachlorobutadiene	ND		1.0		ug/L			10/25/18 14:31	1
Isopropylbenzene	ND		1.0		ug/L			10/25/18 14:31	1
2-Butanone (MEK)	ND		10		ug/L			10/25/18 14:31	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/25/18 14:31	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/25/18 14:31	1
Methylene Chloride	ND		1.0		ug/L			10/25/18 14:31	1
m,p-Xylene	ND		2.0		ug/L			10/25/18 14:31	1
Naphthalene	ND		1.0		ug/L			10/25/18 14:31	1
n-Butylbenzene	ND		1.0		ug/L			10/25/18 14:31	1
N-Propylbenzene	ND		1.0		ug/L			10/25/18 14:31	1
o-Xylene	ND		1.0		ug/L			10/25/18 14:31	1
sec-Butylbenzene	ND		1.0		ug/L			10/25/18 14:31	1
Styrene	ND		1.0		ug/L			10/25/18 14:31	1
tert-Butylbenzene	ND		1.0		ug/L			10/25/18 14:31	1
Tetrachloroethene	ND		1.0		ug/L			10/25/18 14:31	1
Toluene	ND		1.0		ug/L			10/25/18 14:31	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/25/18 14:31	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 14:31	1
Trichloroethene	ND		1.0		ug/L			10/25/18 14:31	1
Trichlorofluoromethane	ND		1.0		ug/L			10/25/18 14:31	1
Vinyl chloride	ND		1.0		ug/L			10/25/18 14:31	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/25/18 14:31*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*77 - 120*		*10/25/18 14:31*	*1*

Client Sample ID: MW-8D
Date Collected: 10/16/18 12:15
Date Received: 10/17/18 01:00

Lab Sample ID: 480-143539-10
Matrix: Water

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		10/25/18 14:31	1
4-Bromofluorobenzene (Surr)	105		73 - 120		10/25/18 14:31	1
Dibromofluoromethane (Surr)	103		75 - 123		10/25/18 14:31	1

Method: 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**2.6**		0.20		ug/L		10/23/18 14:15	10/24/18 14:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	83		46 - 130	10/23/18 14:15	10/24/18 14:59	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	**0.030**		0.0020		mg/L		10/18/18 13:34	10/20/18 19:18	1
Cadmium	ND		0.0020		mg/L		10/18/18 13:34	10/20/18 19:18	1
Calcium	**19**		0.50		mg/L		10/18/18 13:34	10/20/18 19:18	1
Chromium	ND		0.0040		mg/L		10/18/18 13:34	10/20/18 19:18	1
Copper	ND		0.010		mg/L		10/18/18 13:34	10/20/18 19:18	1
Iron	**6.3**		0.050		mg/L		10/18/18 13:34	10/20/18 19:18	1
Manganese	**0.60**		0.0030		mg/L		10/18/18 13:34	10/20/18 19:18	1
Selenium	ND		0.025		mg/L		10/18/18 13:34	10/20/18 19:18	1
Silver	ND		0.0060		mg/L		10/18/18 13:34	10/20/18 19:18	1
Sodium	**12**		1.0		mg/L		10/18/18 13:34	10/20/18 19:18	1
Zinc	ND		0.010		mg/L		10/18/18 13:34	10/20/18 19:18	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0		ug/L		10/19/18 14:57	11/14/18 03:29	1
Lead	ND		1.0		ug/L		10/19/18 14:57	11/14/18 03:29	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020		mg/L		10/23/18 11:20	10/23/18 14:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**25**		0.50		mg/L			10/23/18 21:12	1
Sulfate	**23**		2.0		mg/L			10/23/18 21:12	1
Nitrate as N	ND		0.050		mg/L			10/17/18 17:51	1
Chemical Oxygen Demand	ND		10		mg/L			10/17/18 18:30	1
Cyanide, Total	ND	* ^	0.010		mg/L		10/30/18 10:10	10/30/18 18:18	1
Cyanide, Total	ND	H	0.010		mg/L		11/06/18 17:29	11/07/18 12:45	1
Alkalinity, Total	**57**		5.0		mg/L			10/18/18 15:29	1
Total Dissolved Solids	**150**		10		mg/L			10/22/18 23:38	1

Client Sample ID: MW-8S

Date Collected: 10/16/18 12:00
Date Received: 10/17/18 01:00

Lab Sample ID: 480-143539-11

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 14:54	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/25/18 14:54	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 14:54	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/25/18 14:54	1
1,1-Dichloroethane	ND		1.0		ug/L			10/25/18 14:54	1
1,1-Dichloroethene	ND		1.0		ug/L			10/25/18 14:54	1
1,1-Dichloropropene	ND		1.0		ug/L			10/25/18 14:54	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/25/18 14:54	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/25/18 14:54	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/25/18 14:54	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/25/18 14:54	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/25/18 14:54	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/25/18 14:54	1
1,2-Dichloroethane	ND		1.0		ug/L			10/25/18 14:54	1
1,2-Dichloropropane	ND		1.0		ug/L			10/25/18 14:54	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/25/18 14:54	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/25/18 14:54	1
1,3-Dichloropropane	ND		1.0		ug/L			10/25/18 14:54	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/25/18 14:54	1
2,2-Dichloropropane	ND		1.0		ug/L			10/25/18 14:54	1
2-Chlorotoluene	ND		1.0		ug/L			10/25/18 14:54	1
2-Hexanone	ND		5.0		ug/L			10/25/18 14:54	1
4-Chlorotoluene	ND		1.0		ug/L			10/25/18 14:54	1
4-Isopropyltoluene	ND		1.0		ug/L			10/25/18 14:54	1
Acetone	ND		10		ug/L			10/25/18 14:54	1
Benzene	ND		1.0		ug/L			10/25/18 14:54	1
Bromobenzene	ND		1.0		ug/L			10/25/18 14:54	1
Bromoform	ND		1.0		ug/L			10/25/18 14:54	1
Bromomethane	ND		1.0		ug/L			10/25/18 14:54	1
Carbon tetrachloride	ND		1.0		ug/L			10/25/18 14:54	1
Chlorobenzene	ND		1.0		ug/L			10/25/18 14:54	1
Bromochloromethane	ND		1.0		ug/L			10/25/18 14:54	1
Dibromochloromethane	ND		1.0		ug/L			10/25/18 14:54	1
Chloroethane	ND		1.0		ug/L			10/25/18 14:54	1
Chloroform	ND		1.0		ug/L			10/25/18 14:54	1
Chloromethane	ND		1.0		ug/L			10/25/18 14:54	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/25/18 14:54	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 14:54	1
Dibromomethane	ND		1.0		ug/L			10/25/18 14:54	1
Bromodichloromethane	ND		1.0		ug/L			10/25/18 14:54	1
Ethylbenzene	ND		1.0		ug/L			10/25/18 14:54	1
1,2-Dibromoethane	ND		1.0		ug/L			10/25/18 14:54	1
Hexachlorobutadiene	ND		1.0		ug/L			10/25/18 14:54	1
Isopropylbenzene	ND		1.0		ug/L			10/25/18 14:54	1
2-Butanone (MEK)	ND		10		ug/L			10/25/18 14:54	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/25/18 14:54	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/25/18 14:54	1
Methylene Chloride	ND		1.0		ug/L			10/25/18 14:54	1
m,p-Xylene	ND		2.0		ug/L			10/25/18 14:54	1

Client Sample ID: MW-8S
Date Collected: 10/16/18 12:00
Date Received: 10/17/18 01:00

Lab Sample ID: 480-143539-11
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		1.0		ug/L			10/25/18 14:54	1
n-Butylbenzene	ND		1.0		ug/L			10/25/18 14:54	1
N-Propylbenzene	ND		1.0		ug/L			10/25/18 14:54	1
o-Xylene	ND		1.0		ug/L			10/25/18 14:54	1
sec-Butylbenzene	ND		1.0		ug/L			10/25/18 14:54	1
Styrene	ND		1.0		ug/L			10/25/18 14:54	1
tert-Butylbenzene	ND		1.0		ug/L			10/25/18 14:54	1
Tetrachloroethene	ND		1.0		ug/L			10/25/18 14:54	1
Toluene	ND		1.0		ug/L			10/25/18 14:54	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/25/18 14:54	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 14:54	1
Trichloroethene	ND		1.0		ug/L			10/25/18 14:54	1
Trichlorofluoromethane	ND		1.0		ug/L			10/25/18 14:54	1
Vinyl chloride	ND		1.0		ug/L			10/25/18 14:54	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*4.2*	*T J*	*ug/L*		*8.62*			*10/25/18 14:54*	*1*
Unknown	*3.5*	*T J*	*ug/L*		*9.58*			*10/25/18 14:54*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*115*		*77 - 120*		*10/25/18 14:54*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*10/25/18 14:54*	*1*
4-Bromofluorobenzene (Surr)	*105*		*73 - 120*		*10/25/18 14:54*	*1*
Dibromofluoromethane (Surr)	*99*		*75 - 123*		*10/25/18 14:54*	*1*

Method: 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**4.0**		0.20		ug/L		10/23/18 14:15	10/24/18 15:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*84*		*46 - 130*	*10/23/18 14:15*	*10/24/18 15:28*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		3.0		ug/L		10/18/18 15:22	10/19/18 17:38	1
Barium	**100**		5.0		ug/L		10/18/18 15:22	10/19/18 17:38	1
Cadmium	ND		0.50		ug/L		10/18/18 15:22	10/19/18 17:38	1
Calcium	**44000**		500		ug/L		10/18/18 15:22	10/19/18 17:38	1
Chromium	ND		5.0		ug/L		10/18/18 15:22	10/19/18 17:38	1
Copper	ND		5.0		ug/L		10/18/18 15:22	10/19/18 17:38	1
Iron	**12000**		100		ug/L		10/18/18 15:22	10/19/18 17:38	1
Lead	ND		2.5		ug/L		10/18/18 15:22	10/19/18 17:38	1
Manganese	**1500**		5.0		ug/L		10/18/18 15:22	10/19/18 17:38	1
Selenium	ND		2.5		ug/L		10/18/18 15:22	10/19/18 17:38	1
Silver	ND		1.0		ug/L		10/18/18 15:22	10/19/18 17:38	1
Sodium	**34000**		500		ug/L		10/18/18 15:22	10/19/18 17:38	1
Zinc	ND		20		ug/L		10/18/18 15:22	10/19/18 17:38	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		10/18/18 08:28	10/19/18 14:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**31**		0.50		mg/L			10/23/18 21:27	1
Sulfate	**17**		2.0		mg/L			10/23/18 21:27	1
Nitrate as N	ND		0.050		mg/L			10/17/18 17:57	1
Chemical Oxygen Demand	**27**	**F1**	10		mg/L			10/17/18 18:30	1
Cyanide, Total	ND	* ^	0.010		mg/L		10/30/18 10:10	10/30/18 18:19	1
Cyanide, Total	ND	H	0.010		mg/L		11/06/18 17:29	11/07/18 12:46	1
Alkalinity, Total	**170**		5.0		mg/L			10/18/18 15:33	1
Total Dissolved Solids	**240**		10		mg/L			10/22/18 23:38	1

Client Sample ID: PZ-1

Lab Sample ID: 480-143539-12

Date Collected: 10/16/18 11:00

Matrix: Water

Date Received: 10/17/18 01:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 15:18	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/25/18 15:18	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 15:18	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/25/18 15:18	1
1,1-Dichloroethane	ND		1.0		ug/L			10/25/18 15:18	1
1,1-Dichloroethene	ND		1.0		ug/L			10/25/18 15:18	1
1,1-Dichloropropene	ND		1.0		ug/L			10/25/18 15:18	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/25/18 15:18	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/25/18 15:18	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/25/18 15:18	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/25/18 15:18	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/25/18 15:18	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/25/18 15:18	1
1,2-Dichloroethane	ND		1.0		ug/L			10/25/18 15:18	1
1,2-Dichloropropane	ND		1.0		ug/L			10/25/18 15:18	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/25/18 15:18	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/25/18 15:18	1
1,3-Dichloropropane	ND		1.0		ug/L			10/25/18 15:18	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/25/18 15:18	1
2,2-Dichloropropane	ND		1.0		ug/L			10/25/18 15:18	1
2-Chlorotoluene	ND		1.0		ug/L			10/25/18 15:18	1
2-Hexanone	ND		5.0		ug/L			10/25/18 15:18	1
4-Chlorotoluene	ND		1.0		ug/L			10/25/18 15:18	1
4-Isopropyltoluene	ND		1.0		ug/L			10/25/18 15:18	1
Acetone	ND		10		ug/L			10/25/18 15:18	1
Benzene	ND		1.0		ug/L			10/25/18 15:18	1
Bromobenzene	ND		1.0		ug/L			10/25/18 15:18	1
Bromoform	ND		1.0		ug/L			10/25/18 15:18	1
Bromomethane	ND		1.0		ug/L			10/25/18 15:18	1
Carbon tetrachloride	ND		1.0		ug/L			10/25/18 15:18	1
Chlorobenzene	ND		1.0		ug/L			10/25/18 15:18	1
Bromochloromethane	ND		1.0		ug/L			10/25/18 15:18	1
Dibromochloromethane	ND		1.0		ug/L			10/25/18 15:18	1
Chloroethane	ND		1.0		ug/L			10/25/18 15:18	1
Chloroform	ND		1.0		ug/L			10/25/18 15:18	1
Chloromethane	ND		1.0		ug/L			10/25/18 15:18	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/25/18 15:18	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 15:18	1

Client Sample ID: PZ-1
Date Collected: 10/16/18 11:00
Date Received: 10/17/18 01:00

Lab Sample ID: 480-143539-12
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromomethane	ND		1.0		ug/L			10/25/18 15:18	1
Bromodichloromethane	ND		1.0		ug/L			10/25/18 15:18	1
Ethylbenzene	ND		1.0		ug/L			10/25/18 15:18	1
1,2-Dibromoethane	ND		1.0		ug/L			10/25/18 15:18	1
Hexachlorobutadiene	ND		1.0		ug/L			10/25/18 15:18	1
Isopropylbenzene	ND		1.0		ug/L			10/25/18 15:18	1
2-Butanone (MEK)	ND		10		ug/L			10/25/18 15:18	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/25/18 15:18	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/25/18 15:18	1
Methylene Chloride	ND		1.0		ug/L			10/25/18 15:18	1
m,p-Xylene	ND		2.0		ug/L			10/25/18 15:18	1
Naphthalene	ND		1.0		ug/L			10/25/18 15:18	1
n-Butylbenzene	ND		1.0		ug/L			10/25/18 15:18	1
N-Propylbenzene	ND		1.0		ug/L			10/25/18 15:18	1
o-Xylene	ND		1.0		ug/L			10/25/18 15:18	1
sec-Butylbenzene	ND		1.0		ug/L			10/25/18 15:18	1
Styrene	ND		1.0		ug/L			10/25/18 15:18	1
tert-Butylbenzene	ND		1.0		ug/L			10/25/18 15:18	1
Tetrachloroethene	ND		1.0		ug/L			10/25/18 15:18	1
Toluene	ND		1.0		ug/L			10/25/18 15:18	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/25/18 15:18	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 15:18	1
Trichloroethene	ND		1.0		ug/L			10/25/18 15:18	1
Trichlorofluoromethane	ND		1.0		ug/L			10/25/18 15:18	1
Vinyl chloride	ND		1.0		ug/L			10/25/18 15:18	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/25/18 15:18*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*77 - 120*		*10/25/18 15:18*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*10/25/18 15:18*	*1*
4-Bromofluorobenzene (Surr)	*104*		*73 - 120*		*10/25/18 15:18*	*1*
Dibromofluoromethane (Surr)	*104*		*75 - 123*		*10/25/18 15:18*	*1*

Method: 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20		ug/L		10/23/18 14:15	10/24/18 15:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*79*		*46 - 130*	*10/23/18 14:15*	*10/24/18 15:42*	*1*

Method: 2340B-2011 - Total Hardness (as $CaCO_3$) by calculation

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	**52**		3.3		mg/L			10/26/18 15:19	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		3.0		ug/L		10/18/18 15:22	10/19/18 17:41	1
Barium	**0.012**		0.0050		mg/L		10/18/18 15:22	10/19/18 17:41	1
Cadmium	ND		0.50		ug/L		10/18/18 15:22	10/19/18 17:41	1

Client Sample ID: PZ-1
Lab Sample ID: 480-143539-12

Date Collected: 10/16/18 11:00
Matrix: Water
Date Received: 10/17/18 01:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**15**		0.50		mg/L		10/18/18 15:22	10/19/18 17:41	1
Chromium	ND		0.0050		mg/L		10/18/18 15:22	10/19/18 17:41	1
Copper	ND		5.0		ug/L		10/18/18 15:22	10/19/18 17:41	1
Iron	**0.61**		0.10		mg/L		10/18/18 15:22	10/19/18 17:41	1
Lead	ND		2.5		ug/L		10/18/18 15:22	10/19/18 17:41	1
Manganese	**0.29**		0.0050		mg/L		10/18/18 15:22	10/19/18 17:41	1
Selenium	ND		2.5		ug/L		10/18/18 15:22	10/19/18 17:41	1
Silver	ND		1.0		ug/L		10/18/18 15:22	10/19/18 17:41	1
Sodium	**19**		0.50		mg/L		10/18/18 15:22	10/19/18 17:41	1
Zinc	ND		0.020		mg/L		10/18/18 15:22	10/19/18 17:41	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		10/18/18 09:29	10/19/18 21:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**43**		0.50		mg/L			10/23/18 21:41	1
Sulfate	**6.6**		2.0		mg/L			10/23/18 21:41	1
Nitrate as N	**0.32**		0.050		mg/L			10/17/18 20:25	1
Chemical Oxygen Demand	**38**		10		mg/L			10/17/18 18:30	1
Cyanide, Total	ND		0.0050		mg/L		10/26/18 10:47	10/26/18 15:48	1
Alkalinity, Total	**37**		5.0		mg/L			10/18/18 15:39	1
Total Dissolved Solids	**150**		10		mg/L			10/22/18 23:38	1

Client Sample ID: TRIP BLANK
Lab Sample ID: 480-143539-13

Date Collected: 10/16/18 00:00
Matrix: Water
Date Received: 10/17/18 01:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 15:41	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/25/18 15:41	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 15:41	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/25/18 15:41	1
1,1-Dichloroethane	ND		1.0		ug/L			10/25/18 15:41	1
1,1-Dichloroethene	ND		1.0		ug/L			10/25/18 15:41	1
1,1-Dichloropropene	ND		1.0		ug/L			10/25/18 15:41	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/25/18 15:41	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/25/18 15:41	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/25/18 15:41	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/25/18 15:41	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/25/18 15:41	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/25/18 15:41	1
1,2-Dichloroethane	ND		1.0		ug/L			10/25/18 15:41	1
1,2-Dichloropropane	ND		1.0		ug/L			10/25/18 15:41	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/25/18 15:41	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/25/18 15:41	1
1,3-Dichloropropane	ND		1.0		ug/L			10/25/18 15:41	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/25/18 15:41	1

Client Sample ID: TRIP BLANK

Date Collected: 10/16/18 00:00
Date Received: 10/17/18 01:00

Lab Sample ID: 480-143539-13

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,2-Dichloropropane	ND		1.0		ug/L			10/25/18 15:41	1
2-Chlorotoluene	ND		1.0		ug/L			10/25/18 15:41	1
2-Hexanone	ND		5.0		ug/L			10/25/18 15:41	1
4-Chlorotoluene	ND		1.0		ug/L			10/25/18 15:41	1
4-Isopropyltoluene	ND		1.0		ug/L			10/25/18 15:41	1
Acetone	ND		10		ug/L			10/25/18 15:41	1
Benzene	ND		1.0		ug/L			10/25/18 15:41	1
Bromobenzene	ND		1.0		ug/L			10/25/18 15:41	1
Bromoform	ND		1.0		ug/L			10/25/18 15:41	1
Bromomethane	ND		1.0		ug/L			10/25/18 15:41	1
Carbon tetrachloride	ND		1.0		ug/L			10/25/18 15:41	1
Chlorobenzene	ND		1.0		ug/L			10/25/18 15:41	1
Bromochloromethane	ND		1.0		ug/L			10/25/18 15:41	1
Dibromochloromethane	ND		1.0		ug/L			10/25/18 15:41	1
Chloroethane	ND		1.0		ug/L			10/25/18 15:41	1
Chloroform	ND		1.0		ug/L			10/25/18 15:41	1
Chloromethane	ND		1.0		ug/L			10/25/18 15:41	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/25/18 15:41	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 15:41	1
Dibromomethane	ND		1.0		ug/L			10/25/18 15:41	1
Bromodichloromethane	ND		1.0		ug/L			10/25/18 15:41	1
Ethylbenzene	ND		1.0		ug/L			10/25/18 15:41	1
1,2-Dibromoethane	ND		1.0		ug/L			10/25/18 15:41	1
Hexachlorobutadiene	ND		1.0		ug/L			10/25/18 15:41	1
Isopropylbenzene	ND		1.0		ug/L			10/25/18 15:41	1
2-Butanone (MEK)	ND		10		ug/L			10/25/18 15:41	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/25/18 15:41	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/25/18 15:41	1
Methylene Chloride	ND		1.0		ug/L			10/25/18 15:41	1
m,p-Xylene	ND		2.0		ug/L			10/25/18 15:41	1
Naphthalene	ND		1.0		ug/L			10/25/18 15:41	1
n-Butylbenzene	ND		1.0		ug/L			10/25/18 15:41	1
N-Propylbenzene	ND		1.0		ug/L			10/25/18 15:41	1
o-Xylene	ND		1.0		ug/L			10/25/18 15:41	1
sec-Butylbenzene	ND		1.0		ug/L			10/25/18 15:41	1
Styrene	ND		1.0		ug/L			10/25/18 15:41	1
tert-Butylbenzene	ND		1.0		ug/L			10/25/18 15:41	1
Tetrachloroethene	ND		1.0		ug/L			10/25/18 15:41	1
Toluene	ND		1.0		ug/L			10/25/18 15:41	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/25/18 15:41	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 15:41	1
Trichloroethene	ND		1.0		ug/L			10/25/18 15:41	1
Trichlorofluoromethane	ND		1.0		ug/L			10/25/18 15:41	1
Vinyl chloride	ND		1.0		ug/L			10/25/18 15:41	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/25/18 15:41*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*120*		*77 - 120*		*10/25/18 15:41*	*1*

Client Sample ID: TRIP BLANK
Date Collected: 10/16/18 00:00
Date Received: 10/17/18 01:00

Lab Sample ID: 480-143539-13
Matrix: Water

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120		10/25/18 15:41	1
4-Bromofluorobenzene (Surr)	105		73 - 120		10/25/18 15:41	1
Dibromofluoromethane (Surr)	107		75 - 123		10/25/18 15:41	1

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

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	DCA (77-120)	TOL (80-120)	BFB (73-120)	DBFM (75-123)
480-143539-1	DUP-1	97	98	101	99
480-143539-2	MW-1	102	97	105	99
480-143539-3	MW-3	98	98	102	97
480-143539-4	MW-5D	118	96	100	109
480-143539-5	MW-5S	117	102	101	110
480-143539-6	MW-6D	112	97	100	101
480-143539-7	MW-6S	107	99	103	101
480-143539-8	MW-7D	113	100	100	105
480-143539-9	MW-7S	112	102	98	102
480-143539-10	MW-8D	111	100	105	103
480-143539-11	MW-8S	115	103	105	99
480-143539-12	PZ-1	110	102	104	104
480-143539-13	TRIP BLANK	120	101	105	107
LCS 480-441604/28	Lab Control Sample	100	96	100	100
LCS 480-441610/9	Lab Control Sample	115	100	107	110
MB 480-441604/7	Method Blank	101	97	97	106
MB 480-441610/7	Method Blank	118	98	101	109

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 522 - 1,4 Dioxane (GC/MS SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DXE (46-130)
480-143539-1	DUP-1	79
480-143539-2	MW-1	78
480-143539-3	MW-3	82
480-143539-4	MW-5D	84
480-143539-5	MW-5S	66
480-143539-6	MW-6D	83
480-143539-7	MW-6S	74
480-143539-8	MW-7D	84
480-143539-9	MW-7S	84
480-143539-10	MW-8D	83
480-143539-11	MW-8S	84
480-143539-12	PZ-1	79
LCS 200-135662/2-A	Lab Control Sample	78
MB 200-135662/1-A	Method Blank	77

Surrogate Legend

DXE = 1,4-Dioxane-d8 (Surr)

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

Lab Sample ID: MB 480-441604/7
Matrix: Water
Analysis Batch: 441604

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 12:16	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/25/18 12:16	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 12:16	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/25/18 12:16	1
1,1-Dichloroethane	ND		1.0		ug/L			10/25/18 12:16	1
1,1-Dichloroethene	ND		1.0		ug/L			10/25/18 12:16	1
1,1-Dichloropropene	ND		1.0		ug/L			10/25/18 12:16	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/25/18 12:16	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/25/18 12:16	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/25/18 12:16	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/25/18 12:16	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/25/18 12:16	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/25/18 12:16	1
1,2-Dichloroethane	ND		1.0		ug/L			10/25/18 12:16	1
1,2-Dichloropropane	ND		1.0		ug/L			10/25/18 12:16	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/25/18 12:16	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/25/18 12:16	1
1,3-Dichloropropane	ND		1.0		ug/L			10/25/18 12:16	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/25/18 12:16	1
2,2-Dichloropropane	ND		1.0		ug/L			10/25/18 12:16	1
2-Chlorotoluene	ND		1.0		ug/L			10/25/18 12:16	1
2-Hexanone	ND		5.0		ug/L			10/25/18 12:16	1
4-Chlorotoluene	ND		1.0		ug/L			10/25/18 12:16	1
4-Isopropyltoluene	ND		1.0		ug/L			10/25/18 12:16	1
Acetone	ND		10		ug/L			10/25/18 12:16	1
Benzene	ND		1.0		ug/L			10/25/18 12:16	1
Bromobenzene	ND		1.0		ug/L			10/25/18 12:16	1
Bromoform	ND		1.0		ug/L			10/25/18 12:16	1
Bromomethane	ND		1.0		ug/L			10/25/18 12:16	1
Carbon tetrachloride	ND		1.0		ug/L			10/25/18 12:16	1
Chlorobenzene	ND		1.0		ug/L			10/25/18 12:16	1
Bromochloromethane	ND		1.0		ug/L			10/25/18 12:16	1
Dibromochloromethane	ND		1.0		ug/L			10/25/18 12:16	1
Chloroethane	ND		1.0		ug/L			10/25/18 12:16	1
Chloroform	ND		1.0		ug/L			10/25/18 12:16	1
Chloromethane	ND		1.0		ug/L			10/25/18 12:16	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/25/18 12:16	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 12:16	1
Dibromomethane	ND		1.0		ug/L			10/25/18 12:16	1
Bromodichloromethane	ND		1.0		ug/L			10/25/18 12:16	1
Ethylbenzene	ND		1.0		ug/L			10/25/18 12:16	1
1,2-Dibromoethane	ND		1.0		ug/L			10/25/18 12:16	1
Hexachlorobutadiene	ND		1.0		ug/L			10/25/18 12:16	1
Isopropylbenzene	ND		1.0		ug/L			10/25/18 12:16	1
2-Butanone (MEK)	ND		10		ug/L			10/25/18 12:16	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/25/18 12:16	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/25/18 12:16	1
Methylene Chloride	ND		1.0		ug/L			10/25/18 12:16	1

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

Lab Sample ID: MB 480-441604/7 **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 441604

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m,p-Xylene	ND		2.0		ug/L			10/25/18 12:16	1
Naphthalene	ND		1.0		ug/L			10/25/18 12:16	1
n-Butylbenzene	ND		1.0		ug/L			10/25/18 12:16	1
N-Propylbenzene	ND		1.0		ug/L			10/25/18 12:16	1
o-Xylene	ND		1.0		ug/L			10/25/18 12:16	1
sec-Butylbenzene	ND		1.0		ug/L			10/25/18 12:16	1
Styrene	ND		1.0		ug/L			10/25/18 12:16	1
tert-Butylbenzene	ND		1.0		ug/L			10/25/18 12:16	1
Tetrachloroethene	ND		1.0		ug/L			10/25/18 12:16	1
Toluene	ND		1.0		ug/L			10/25/18 12:16	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/25/18 12:16	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 12:16	1
Trichloroethene	ND		1.0		ug/L			10/25/18 12:16	1
Trichlorofluoromethane	ND		1.0		ug/L			10/25/18 12:16	1
Vinyl chloride	ND		1.0		ug/L			10/25/18 12:16	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/25/18 12:16*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*77 - 120*		*10/25/18 12:16*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/25/18 12:16*	*1*
4-Bromofluorobenzene (Surr)	*97*		*73 - 120*		*10/25/18 12:16*	*1*
Dibromofluoromethane (Surr)	*106*		*75 - 123*		*10/25/18 12:16*	*1*

Lab Sample ID: LCS 480-441604/28 **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 441604

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	25.0	24.4		ug/L		98	80 - 120
1,1,1-Trichloroethane	25.0	26.1		ug/L		105	73 - 126
1,1,2,2-Tetrachloroethane	25.0	23.2		ug/L		93	76 - 120
1,1,2-Trichloroethane	25.0	24.6		ug/L		98	76 - 122
1,1-Dichloroethane	25.0	26.3		ug/L		105	77 - 120
1,1-Dichloroethene	25.0	25.0		ug/L		100	66 - 127
1,1-Dichloropropene	25.0	28.5		ug/L		114	72 - 122
1,2,3-Trichlorobenzene	25.0	25.0		ug/L		100	75 - 123
1,2,3-Trichloropropane	25.0	23.7		ug/L		95	68 - 122
1,2,4-Trichlorobenzene	25.0	25.1		ug/L		100	79 - 122
1,2,4-Trimethylbenzene	25.0	27.4		ug/L		110	76 - 121
1,2-Dibromo-3-Chloropropane	25.0	20.6		ug/L		82	56 - 134
1,2-Dichlorobenzene	25.0	24.5		ug/L		98	80 - 124
1,2-Dichloroethane	25.0	24.5		ug/L		98	75 - 120
1,2-Dichloropropane	25.0	27.9		ug/L		111	76 - 120
1,3,5-Trimethylbenzene	25.0	27.1		ug/L		108	77 - 121
1,3-Dichlorobenzene	25.0	26.1		ug/L		105	77 - 120

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

Lab Sample ID: LCS 480-441604/28 **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 441604

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichloropropane	25.0	25.6		ug/L		102	75 - 120
1,4-Dichlorobenzene	25.0	25.7		ug/L		103	80 - 120
2,2-Dichloropropane	25.0	27.8		ug/L		111	63 - 136
2-Chlorotoluene	25.0	25.8		ug/L		103	76 - 121
2-Hexanone	125	135		ug/L		108	65 - 127
4-Chlorotoluene	25.0	26.0		ug/L		104	77 - 121
4-Isopropyltoluene	25.0	28.0		ug/L		112	73 - 120
Acetone	125	142		ug/L		114	56 - 142
Benzene	25.0	27.5		ug/L		110	71 - 124
Bromobenzene	25.0	25.8		ug/L		103	78 - 120
Bromoform	25.0	22.5		ug/L		90	61 - 132
Bromomethane	25.0	24.6		ug/L		98	55 - 144
Carbon tetrachloride	25.0	27.1		ug/L		108	72 - 134
Chlorobenzene	25.0	25.2		ug/L		101	80 - 120
Bromochloromethane	25.0	25.5		ug/L		102	72 - 130
Dibromochloromethane	25.0	24.5		ug/L		98	75 - 125
Chloroethane	25.0	24.2		ug/L		97	69 - 136
Chloroform	25.0	24.8		ug/L		99	73 - 127
Chloromethane	25.0	21.3		ug/L		85	68 - 124
cis-1,2-Dichloroethene	25.0	25.4		ug/L		102	74 - 124
cis-1,3-Dichloropropene	25.0	31.0		ug/L		124	74 - 124
Dibromomethane	25.0	26.9		ug/L		107	76 - 127
Bromodichloromethane	25.0	27.7		ug/L		111	80 - 122
Ethylbenzene	25.0	25.2		ug/L		101	77 - 123
1,2-Dibromoethane	25.0	24.8		ug/L		99	77 - 120
Hexachlorobutadiene	25.0	26.7		ug/L		107	68 - 131
Isopropylbenzene	25.0	27.5		ug/L		110	77 - 122
2-Butanone (MEK)	125	147		ug/L		117	57 - 140
4-Methyl-2-pentanone (MIBK)	125	119		ug/L		95	71 - 125
Methyl tert-butyl ether	25.0	26.1		ug/L		104	77 - 120
Methylene Chloride	25.0	23.0		ug/L		92	75 - 124
m,p-Xylene	25.0	25.9		ug/L		104	76 - 122
Naphthalene	25.0	24.1		ug/L		96	66 - 125
n-Butylbenzene	25.0	27.0		ug/L		108	71 - 128
N-Propylbenzene	25.0	26.2		ug/L		105	75 - 127
o-Xylene	25.0	25.5		ug/L		102	76 - 122
sec-Butylbenzene	25.0	26.5		ug/L		106	74 - 127
Styrene	25.0	26.0		ug/L		104	80 - 120
tert-Butylbenzene	25.0	28.0		ug/L		112	75 - 123
Tetrachloroethene	25.0	26.1		ug/L		104	74 - 122
Toluene	25.0	25.2		ug/L		101	80 - 122
trans-1,2-Dichloroethene	25.0	23.7		ug/L		95	73 - 127
trans-1,3-Dichloropropene	25.0	26.5		ug/L		106	80 - 120
Trichloroethene	25.0	27.2		ug/L		109	74 - 123
Trichlorofluoromethane	25.0	27.2		ug/L		109	62 - 150
Vinyl chloride	25.0	25.7		ug/L		103	65 - 133

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

Lab Sample ID: LCS 480-441604/28
Matrix: Water
Analysis Batch: 441604

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

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*77 - 120*
Toluene-d8 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*73 - 120*
Dibromofluoromethane (Surr)	*100*		*75 - 123*

Lab Sample ID: MB 480-441610/7
Matrix: Water
Analysis Batch: 441610

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 11:36	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/25/18 11:36	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/25/18 11:36	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/25/18 11:36	1
1,1-Dichloroethane	ND		1.0		ug/L			10/25/18 11:36	1
1,1-Dichloroethene	ND		1.0		ug/L			10/25/18 11:36	1
1,1-Dichloropropene	ND		1.0		ug/L			10/25/18 11:36	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/25/18 11:36	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/25/18 11:36	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/25/18 11:36	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/25/18 11:36	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/25/18 11:36	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/25/18 11:36	1
1,2-Dichloroethane	ND		1.0		ug/L			10/25/18 11:36	1
1,2-Dichloropropane	ND		1.0		ug/L			10/25/18 11:36	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/25/18 11:36	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/25/18 11:36	1
1,3-Dichloropropane	ND		1.0		ug/L			10/25/18 11:36	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/25/18 11:36	1
2,2-Dichloropropane	ND		1.0		ug/L			10/25/18 11:36	1
2-Chlorotoluene	ND		1.0		ug/L			10/25/18 11:36	1
2-Hexanone	ND		5.0		ug/L			10/25/18 11:36	1
4-Chlorotoluene	ND		1.0		ug/L			10/25/18 11:36	1
4-Isopropyltoluene	ND		1.0		ug/L			10/25/18 11:36	1
Acetone	ND		10		ug/L			10/25/18 11:36	1
Benzene	ND		1.0		ug/L			10/25/18 11:36	1
Bromobenzene	ND		1.0		ug/L			10/25/18 11:36	1
Bromoform	ND		1.0		ug/L			10/25/18 11:36	1
Bromomethane	ND		1.0		ug/L			10/25/18 11:36	1
Carbon tetrachloride	ND		1.0		ug/L			10/25/18 11:36	1
Chlorobenzene	ND		1.0		ug/L			10/25/18 11:36	1
Bromochloromethane	ND		1.0		ug/L			10/25/18 11:36	1
Dibromochloromethane	ND		1.0		ug/L			10/25/18 11:36	1
Chloroethane	ND		1.0		ug/L			10/25/18 11:36	1
Chloroform	ND		1.0		ug/L			10/25/18 11:36	1
Chloromethane	ND		1.0		ug/L			10/25/18 11:36	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/25/18 11:36	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 11:36	1

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

Lab Sample ID: MB 480-441610/7 **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 441610

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromomethane	ND		1.0		ug/L			10/25/18 11:36	1
Bromodichloromethane	ND		1.0		ug/L			10/25/18 11:36	1
Ethylbenzene	ND		1.0		ug/L			10/25/18 11:36	1
1,2-Dibromoethane	ND		1.0		ug/L			10/25/18 11:36	1
Hexachlorobutadiene	ND		1.0		ug/L			10/25/18 11:36	1
Isopropylbenzene	ND		1.0		ug/L			10/25/18 11:36	1
2-Butanone (MEK)	ND		10		ug/L			10/25/18 11:36	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/25/18 11:36	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/25/18 11:36	1
Methylene Chloride	ND		1.0		ug/L			10/25/18 11:36	1
m,p-Xylene	ND		2.0		ug/L			10/25/18 11:36	1
Naphthalene	ND		1.0		ug/L			10/25/18 11:36	1
n-Butylbenzene	ND		1.0		ug/L			10/25/18 11:36	1
N-Propylbenzene	ND		1.0		ug/L			10/25/18 11:36	1
o-Xylene	ND		1.0		ug/L			10/25/18 11:36	1
sec-Butylbenzene	ND		1.0		ug/L			10/25/18 11:36	1
Styrene	ND		1.0		ug/L			10/25/18 11:36	1
tert-Butylbenzene	ND		1.0		ug/L			10/25/18 11:36	1
Tetrachloroethene	ND		1.0		ug/L			10/25/18 11:36	1
Toluene	ND		1.0		ug/L			10/25/18 11:36	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/25/18 11:36	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/25/18 11:36	1
Trichloroethene	ND		1.0		ug/L			10/25/18 11:36	1
Trichlorofluoromethane	ND		1.0		ug/L			10/25/18 11:36	1
Vinyl chloride	ND		1.0		ug/L			10/25/18 11:36	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/25/18 11:36*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*118*		*77 - 120*		*10/25/18 11:36*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/25/18 11:36*	*1*
4-Bromofluorobenzene (Surr)	*101*		*73 - 120*		*10/25/18 11:36*	*1*
Dibromofluoromethane (Surr)	*109*		*75 - 123*		*10/25/18 11:36*	*1*

Lab Sample ID: LCS 480-441610/9 **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 441610

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	25.0	27.2		ug/L		109	80 - 120
1,1,1-Trichloroethane	25.0	30.4		ug/L		122	73 - 126
1,1,2,2-Tetrachloroethane	25.0	24.7		ug/L		99	76 - 120
1,1,2-Trichloroethane	25.0	23.9		ug/L		96	76 - 122
1,1-Dichloroethane	25.0	26.1		ug/L		105	77 - 120
1,1-Dichloroethene	25.0	24.7		ug/L		99	66 - 127
1,1-Dichloropropene	25.0	26.1		ug/L		104	72 - 122

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

Lab Sample ID: LCS 480-441610/9
Matrix: Water
Analysis Batch: 441610

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3-Trichlorobenzene	25.0	25.6		ug/L		103	75 - 123
1,2,3-Trichloropropane	25.0	26.1		ug/L		104	68 - 122
1,2,4-Trichlorobenzene	25.0	26.5		ug/L		106	79 - 122
1,2,4-Trimethylbenzene	25.0	26.3		ug/L		105	76 - 121
1,2-Dibromo-3-Chloropropane	25.0	27.0		ug/L		108	56 - 134
1,2-Dichlorobenzene	25.0	26.1		ug/L		104	80 - 124
1,2-Dichloroethane	25.0	29.0		ug/L		116	75 - 120
1,2-Dichloropropane	25.0	25.0		ug/L		100	76 - 120
1,3,5-Trimethylbenzene	25.0	27.0		ug/L		108	77 - 121
1,3-Dichlorobenzene	25.0	26.0		ug/L		104	77 - 120
1,3-Dichloropropane	25.0	25.5		ug/L		102	75 - 120
1,4-Dichlorobenzene	25.0	25.7		ug/L		103	80 - 120
2,2-Dichloropropane	25.0	29.5		ug/L		118	63 - 136
2-Chlorotoluene	25.0	25.3		ug/L		101	76 - 121
2-Hexanone	125	155		ug/L		124	65 - 127
4-Chlorotoluene	25.0	25.6		ug/L		102	77 - 121
4-Isopropyltoluene	25.0	26.6		ug/L		107	73 - 120
Acetone	125	172		ug/L		138	56 - 142
Benzene	25.0	24.7		ug/L		99	71 - 124
Bromobenzene	25.0	23.7		ug/L		95	78 - 120
Bromoform	25.0	28.1		ug/L		113	61 - 132
Bromomethane	25.0	25.0		ug/L		100	55 - 144
Carbon tetrachloride	25.0	30.1		ug/L		121	72 - 134
Chlorobenzene	25.0	26.4		ug/L		105	80 - 120
Bromochloromethane	25.0	23.4		ug/L		93	72 - 130
Dibromochloromethane	25.0	27.4		ug/L		110	75 - 125
Chloroethane	25.0	22.2		ug/L		89	69 - 136
Chloroform	25.0	26.2		ug/L		105	73 - 127
Chloromethane	25.0	24.0		ug/L		96	68 - 124
cis-1,2-Dichloroethene	25.0	24.3		ug/L		97	74 - 124
cis-1,3-Dichloropropene	25.0	24.8		ug/L		99	74 - 124
Dibromomethane	25.0	26.8		ug/L		107	76 - 127
Bromodichloromethane	25.0	27.1		ug/L		108	80 - 122
Ethylbenzene	25.0	26.6		ug/L		106	77 - 123
1,2-Dibromoethane	25.0	26.4		ug/L		106	77 - 120
Hexachlorobutadiene	25.0	26.4		ug/L		106	68 - 131
Isopropylbenzene	25.0	26.4		ug/L		106	77 - 122
2-Butanone (MEK)	125	152		ug/L		121	57 - 140
4-Methyl-2-pentanone (MIBK)	125	147		ug/L		118	71 - 125
Methyl tert-butyl ether	25.0	24.3		ug/L		97	77 - 120
Methylene Chloride	25.0	22.9		ug/L		91	75 - 124
m,p-Xylene	25.0	25.6		ug/L		102	76 - 122
Naphthalene	25.0	24.1		ug/L		96	66 - 125
n-Butylbenzene	25.0	26.6		ug/L		107	71 - 128
N-Propylbenzene	25.0	26.6		ug/L		106	75 - 127
o-Xylene	25.0	24.3		ug/L		97	76 - 122
sec-Butylbenzene	25.0	27.5		ug/L		110	74 - 127
Styrene	25.0	26.8		ug/L		107	80 - 120

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

Lab Sample ID: LCS 480-441610/9
Matrix: Water
Analysis Batch: 441610

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
tert-Butylbenzene	25.0	25.6		ug/L		102	75 - 123
Tetrachloroethene	25.0	28.4		ug/L		114	74 - 122
Toluene	25.0	24.8		ug/L		99	80 - 122
trans-1,2-Dichloroethene	25.0	24.7		ug/L		99	73 - 127
trans-1,3-Dichloropropene	25.0	27.0		ug/L		108	80 - 120
Trichloroethene	25.0	27.0		ug/L		108	74 - 123
Trichlorofluoromethane	25.0	32.3		ug/L		129	62 - 150
Vinyl chloride	25.0	21.4		ug/L		86	65 - 133

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*115*		*77 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*107*		*73 - 120*
Dibromofluoromethane (Surr)	*110*		*75 - 123*

Method: 522 - 1,4 Dioxane (GC/MS SIM)

Lab Sample ID: MB 200-135662/1-A
Matrix: Water
Analysis Batch: 135736

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 135662

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20		ug/L		10/23/18 14:15	10/24/18 12:37	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*77*		*46 - 130*	*10/23/18 14:15*	*10/24/18 12:37*	*1*

Lab Sample ID: LCS 200-135662/2-A
Matrix: Water
Analysis Batch: 135736

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 135662

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	2.00	1.83		ug/L		92	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,4-Dioxane-d8 (Surr)	*78*		*46 - 130*

Method: 2340B-2011 - Total Hardness (as CaCO3) by calculation

Lab Sample ID: MB 680-545130/1
Matrix: Water
Analysis Batch: 545130

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

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	ND		3.3		mg/L			10/26/18 15:19	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 480-440213/1-A
Matrix: Water
Analysis Batch: 440784

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 440213

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		10/18/18 13:34	10/20/18 18:59	1
Cadmium	ND		0.0020		mg/L		10/18/18 13:34	10/20/18 18:59	1
Calcium	ND		0.50		mg/L		10/18/18 13:34	10/20/18 18:59	1
Chromium	ND		0.0040		mg/L		10/18/18 13:34	10/20/18 18:59	1
Copper	ND		0.010		mg/L		10/18/18 13:34	10/20/18 18:59	1
Iron	ND		0.050		mg/L		10/18/18 13:34	10/20/18 18:59	1
Manganese	ND		0.0030		mg/L		10/18/18 13:34	10/20/18 18:59	1
Selenium	ND		0.025		mg/L		10/18/18 13:34	10/20/18 18:59	1
Silver	ND		0.0060		mg/L		10/18/18 13:34	10/20/18 18:59	1
Sodium	ND		1.0		mg/L		10/18/18 13:34	10/20/18 18:59	1
Zinc	ND		0.010		mg/L		10/18/18 13:34	10/20/18 18:59	1

Lab Sample ID: LCS 480-440213/2-A
Matrix: Water
Analysis Batch: 440784

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 440213

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	0.200	0.200		mg/L		100	80 - 120
Cadmium	0.200	0.198		mg/L		99	80 - 120
Calcium	10.0	9.62		mg/L		96	80 - 120
Chromium	0.200	0.199		mg/L		99	80 - 120
Copper	0.200	0.188		mg/L		94	80 - 120
Iron	10.0	9.84		mg/L		98	80 - 120
Manganese	0.200	0.194		mg/L		97	80 - 120
Selenium	0.200	0.192		mg/L		96	80 - 120
Silver	0.0500	0.0480		mg/L		96	80 - 120
Sodium	10.0	9.53		mg/L		95	80 - 120
Zinc	0.200	0.200		mg/L		100	80 - 120

Lab Sample ID: 480-143539-10 MS
Matrix: Water
Analysis Batch: 440784

Client Sample ID: MW-8D
Prep Type: Dissolved
Prep Batch: 440213

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	0.030		0.200	0.227		mg/L		99	75 - 125
Cadmium	ND		0.200	0.203		mg/L		102	75 - 125
Calcium	19		10.0	28.9		mg/L		98	75 - 125
Chromium	ND		0.200	0.201		mg/L		100	75 - 125
Copper	ND		0.200	0.194		mg/L		97	75 - 125
Iron	6.3		10.0	16.3		mg/L		100	75 - 125
Manganese	0.60		0.200	0.797		mg/L		97	75 - 125
Selenium	ND		0.200	0.198		mg/L		99	75 - 125
Silver	ND		0.0500	0.0489		mg/L		98	75 - 125
Sodium	12		10.0	21.9		mg/L		97	75 - 125
Zinc	ND		0.200	0.208		mg/L		102	75 - 125

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 480-143539-10 MSD
Matrix: Water
Analysis Batch: 440784

Client Sample ID: MW-8D
Prep Type: Dissolved
Prep Batch: 440213

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Barium	0.030		0.200	0.227		mg/L		99	75 - 125	0	20
Cadmium	ND		0.200	0.199		mg/L		100	75 - 125	2	20
Calcium	19		10.0	28.3		mg/L		92	75 - 125	2	20
Chromium	ND		0.200	0.198		mg/L		99	75 - 125	2	20
Copper	ND		0.200	0.190		mg/L		95	75 - 125	2	20
Iron	6.3		10.0	15.9		mg/L		96	75 - 125	2	20
Manganese	0.60		0.200	0.783		mg/L		90	75 - 125	2	20
Selenium	ND		0.200	0.194		mg/L		97	75 - 125	2	20
Silver	ND		0.0500	0.0485		mg/L		97	75 - 125	1	20
Sodium	12		10.0	21.6		mg/L		94	75 - 125	2	20
Zinc	ND		0.200	0.207		mg/L		102	75 - 125	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 480-440528/1-A
Matrix: Water
Analysis Batch: 445426

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 440528

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0		ug/L		10/19/18 14:57	11/14/18 02:17	1
Lead	ND		1.0		ug/L		10/19/18 14:57	11/14/18 02:17	1

Lab Sample ID: LCS 480-440528/2-A
Matrix: Water
Analysis Batch: 445426

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 440528

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	20.0	19.6		ug/L		98	80 - 120
Lead	20.0	21.2		ug/L		106	80 - 120

Lab Sample ID: MB 680-543947/1-A
Matrix: Water
Analysis Batch: 544279

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 543947

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		3.0		ug/L		10/18/18 15:22	10/19/18 16:41	1
Barium	ND		5.0		ug/L		10/18/18 15:22	10/19/18 16:41	1
Cadmium	ND		0.50		ug/L		10/18/18 15:22	10/19/18 16:41	1
Calcium	ND		500		ug/L		10/18/18 15:22	10/19/18 16:41	1
Chromium	ND		5.0		ug/L		10/18/18 15:22	10/19/18 16:41	1
Copper	ND		5.0		ug/L		10/18/18 15:22	10/19/18 16:41	1
Iron	ND		100		ug/L		10/18/18 15:22	10/19/18 16:41	1
Lead	ND		2.5		ug/L		10/18/18 15:22	10/19/18 16:41	1
Manganese	ND		5.0		ug/L		10/18/18 15:22	10/19/18 16:41	1
Selenium	ND		2.5		ug/L		10/18/18 15:22	10/19/18 16:41	1
Silver	ND		1.0		ug/L		10/18/18 15:22	10/19/18 16:41	1
Sodium	ND		500		ug/L		10/18/18 15:22	10/19/18 16:41	1
Zinc	ND		20		ug/L		10/18/18 15:22	10/19/18 16:41	1

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

Lab Sample ID: LCS 680-543947/2-A
Matrix: Water
Analysis Batch: 544279

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 543947

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	97.0		ug/L		97	80 - 120
Barium	100	106		ug/L		106	80 - 120
Cadmium	50.0	48.4		ug/L		97	80 - 120
Calcium	5000	5400		ug/L		108	80 - 120
Chromium	100	93.5		ug/L		93	80 - 120
Copper	100	99.7		ug/L		100	80 - 120
Iron	5000	4870		ug/L		97	80 - 120
Lead	500	504		ug/L		101	80 - 120
Manganese	500	514		ug/L		103	80 - 120
Selenium	100	104		ug/L		104	80 - 120
Silver	50.0	50.6		ug/L		101	80 - 120
Sodium	5000	4810		ug/L		96	80 - 120
Zinc	100	104		ug/L		104	80 - 120

Lab Sample ID: MB 680-544498/1-A
Matrix: Water
Analysis Batch: 544756

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 544498

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		3.0		ug/L		10/23/18 10:05	10/24/18 13:57	1
Barium	ND		5.0		ug/L		10/23/18 10:05	10/24/18 13:57	1
Cadmium	ND		0.50		ug/L		10/23/18 10:05	10/24/18 13:57	1
Calcium	ND		500		ug/L		10/23/18 10:05	10/24/18 13:57	1
Chromium	ND		5.0		ug/L		10/23/18 10:05	10/24/18 13:57	1
Copper	ND		5.0		ug/L		10/23/18 10:05	10/24/18 13:57	1
Iron	ND		100		ug/L		10/23/18 10:05	10/24/18 13:57	1
Lead	ND		2.5		ug/L		10/23/18 10:05	10/24/18 13:57	1
Manganese	ND		5.0		ug/L		10/23/18 10:05	10/24/18 13:57	1
Selenium	ND		2.5		ug/L		10/23/18 10:05	10/24/18 13:57	1
Silver	ND		1.0		ug/L		10/23/18 10:05	10/24/18 13:57	1
Sodium	ND		500		ug/L		10/23/18 10:05	10/24/18 13:57	1
Zinc	ND		20		ug/L		10/23/18 10:05	10/24/18 13:57	1

Lab Sample ID: LCS 680-544498/2-A
Matrix: Water
Analysis Batch: 544756

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 544498

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	102		ug/L		102	80 - 120
Barium	100	99.5		ug/L		99	80 - 120
Cadmium	50.0	49.1		ug/L		98	80 - 120
Calcium	5000	5160		ug/L		103	80 - 120
Chromium	100	102		ug/L		102	80 - 120
Copper	100	103		ug/L		103	80 - 120
Iron	5000	5260		ug/L		105	80 - 120
Lead	500	516		ug/L		103	80 - 120
Manganese	500	529		ug/L		106	80 - 120
Selenium	100	100		ug/L		100	80 - 120

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

Lab Sample ID: LCS 680-544498/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 544756 **Prep Batch: 544498**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Silver	50.0	52.2		ug/L		104	80 - 120
Sodium	5000	5100		ug/L		102	80 - 120
Zinc	100	105		ug/L		105	80 - 120

Lab Sample ID: 480-143539-4 MS **Client Sample ID: MW-5D**
Matrix: Water **Prep Type: Dissolved**
Analysis Batch: 544756 **Prep Batch: 544498**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	38		100	121		ug/L		83	75 - 125
Barium	28		100	113		ug/L		85	75 - 125
Cadmium	ND		50.0	43.0		ug/L		86	75 - 125
Calcium	52000		5000	47600	4	ug/L		-96	75 - 125
Chromium	ND		100	89.4		ug/L		89	75 - 125
Copper	ND		100	88.9		ug/L		89	75 - 125
Iron	21000		5000	22100	4	ug/L		17	75 - 125
Lead	ND		500	448		ug/L		90	75 - 125
Manganese	7100		500	6310	4	ug/L		-151	75 - 125
Selenium	ND		100	89.3		ug/L		89	75 - 125
Silver	ND		50.0	48.4		ug/L		97	75 - 125
Sodium	36000		5000	34700	4	ug/L		-36	75 - 125
Zinc	ND		100	95.6		ug/L		96	75 - 125

Lab Sample ID: 480-143539-4 MSD **Client Sample ID: MW-5D**
Matrix: Water **Prep Type: Dissolved**
Analysis Batch: 544756 **Prep Batch: 544498**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	38		100	126		ug/L		88	75 - 125	4	20
Barium	28		100	118		ug/L		90	75 - 125	5	20
Cadmium	ND		50.0	44.7		ug/L		89	75 - 125	4	20
Calcium	52000		5000	51600	4	ug/L		-16	75 - 125	8	20
Chromium	ND		100	92.0		ug/L		92	75 - 125	3	20
Copper	ND		100	91.5		ug/L		91	75 - 125	3	20
Iron	21000		5000	23600	4	ug/L		47	75 - 125	7	20
Lead	ND		500	466		ug/L		93	75 - 125	4	20
Manganese	7100		500	6800	4	ug/L		-54	75 - 125	7	20
Selenium	ND		100	90.1		ug/L		90	75 - 125	1	20
Silver	ND		50.0	49.5		ug/L		99	75 - 125	2	20
Sodium	36000		5000	37600	4	ug/L		24	75 - 125	8	20
Zinc	ND		100	93.8		ug/L		94	75 - 125	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 480-440976/1-A
Matrix: Water
Analysis Batch: 441417

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 440976

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020		mg/L		10/23/18 11:20	10/23/18 14:18	1

Lab Sample ID: LCS 480-440976/2-A
Matrix: Water
Analysis Batch: 441417

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 440976

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00667	0.00672		mg/L		101	80 - 120

Lab Sample ID: MB 680-543845/13-A
Matrix: Water
Analysis Batch: 544179

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 543845

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		10/18/18 08:28	10/19/18 13:18	1

Lab Sample ID: LCS 680-543845/14-A
Matrix: Water
Analysis Batch: 544179

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 543845

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	2.50	2.44		ug/L		98	80 - 120

Lab Sample ID: MB 680-543861/1-A
Matrix: Water
Analysis Batch: 544179

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 543861

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		10/18/18 09:29	10/19/18 20:49	1

Lab Sample ID: LCS 680-543861/2-A
Matrix: Water
Analysis Batch: 544179

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 543861

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	2.50	2.58		ug/L		103	80 - 120

Lab Sample ID: MB 680-544942/1-A
Matrix: Water
Analysis Batch: 545120

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 544942

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		10/25/18 12:21	10/26/18 12:54	1

Lab Sample ID: LCS 680-544942/2-A
Matrix: Water
Analysis Batch: 545120

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 544942

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	2.50	2.44		ug/L		97	80 - 120

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 480-440950/28
Matrix: Water
Analysis Batch: 440950

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			10/23/18 18:02	1
Sulfate	ND		2.0		mg/L			10/23/18 18:02	1

Lab Sample ID: LCS 480-440950/27
Matrix: Water
Analysis Batch: 440950

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	49.5		mg/L		99	90 - 110
Sulfate	50.0	47.7		mg/L		95	90 - 110

Lab Sample ID: 480-143539-7 MS
Matrix: Water
Analysis Batch: 440950

Client Sample ID: MW-6S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	7.6		50.0	54.7		mg/L		94	81 - 120
Sulfate	8.7		50.0	53.6		mg/L		90	80 - 120

Lab Sample ID: 480-143539-7 MSD
Matrix: Water
Analysis Batch: 440950

Client Sample ID: MW-6S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	7.6		50.0	54.8		mg/L		94	81 - 120	0	20
Sulfate	8.7		50.0	53.6		mg/L		90	80 - 120	0	20

Lab Sample ID: MB 480-441470/4
Matrix: Water
Analysis Batch: 441470

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			10/24/18 19:21	1
Sulfate	ND		2.0		mg/L			10/24/18 19:21	1

Lab Sample ID: LCS 480-441470/3
Matrix: Water
Analysis Batch: 441470

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	52.9		mg/L		106	90 - 110
Sulfate	50.0	52.9		mg/L		106	90 - 110

Lab Sample ID: MB 480-441923/28
Matrix: Water
Analysis Batch: 441923

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			10/26/18 19:05	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 480-441923/28
Matrix: Water
Analysis Batch: 441923

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		2.0		mg/L			10/26/18 19:05	1

Lab Sample ID: LCS 480-441923/27
Matrix: Water
Analysis Batch: 441923

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	49.2		mg/L		98	90 - 110
Sulfate	50.0	47.9		mg/L		96	90 - 110

Method: 410.4 - COD

Lab Sample ID: MB 480-440084/27
Matrix: Water
Analysis Batch: 440084

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		10		mg/L			10/17/18 18:30	1

Lab Sample ID: MB 480-440084/51
Matrix: Water
Analysis Batch: 440084

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		10		mg/L			10/17/18 18:30	1

Lab Sample ID: LCS 480-440084/28
Matrix: Water
Analysis Batch: 440084

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	25.0	26.6		mg/L		107	90 - 110

Lab Sample ID: LCS 480-440084/52
Matrix: Water
Analysis Batch: 440084

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	25.0	27.3		mg/L		109	90 - 110

Lab Sample ID: 480-143539-1 MS
Matrix: Water
Analysis Batch: 440084

Client Sample ID: DUP-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	13		50.0	66.1		mg/L		105	75 - 125

Method: 410.4 - COD (Continued)

Lab Sample ID: 480-143539-6 MS
Matrix: Water
Analysis Batch: 440084

Client Sample ID: MW-6D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	ND		50.0	52.0		mg/L		104	75 - 125

Lab Sample ID: 480-143539-11 MS
Matrix: Water
Analysis Batch: 440084

Client Sample ID: MW-8S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	27	F1	50.0	62.2	F1	mg/L		70	75 - 125

Lab Sample ID: MB 480-442647/27
Matrix: Water
Analysis Batch: 442647

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		10		mg/L			10/30/18 18:49	1

Lab Sample ID: MB 480-442647/3
Matrix: Water
Analysis Batch: 442647

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		10		mg/L			10/30/18 18:49	1

Lab Sample ID: MB 480-442647/51
Matrix: Water
Analysis Batch: 442647

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		10		mg/L			10/30/18 18:49	1

Lab Sample ID: LCS 480-442647/28
Matrix: Water
Analysis Batch: 442647

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	25.0	24.7		mg/L		99	90 - 110

Lab Sample ID: LCS 480-442647/4
Matrix: Water
Analysis Batch: 442647

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	25.0	25.0		mg/L		100	90 - 110

Lab Sample ID: LCS 480-442647/52
Matrix: Water
Analysis Batch: 442647

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	25.0	25.0		mg/L		100	90 - 110

Client: Weston & Sampson Engineers
Project/Site: Dighton Landfill

TestAmerica Job ID: 480-143539-1

Method: 9012A - Cyanide, Total and/or Amenable

Lab Sample ID: MB 400-417148/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 417146 — **Prep Batch: 417148**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.0050		mg/L		10/26/18 10:47	10/26/18 15:42	1

Lab Sample ID: LCS 400-417148/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 417146 — **Prep Batch: 417148**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.274	0.339		mg/L		124	75 - 125

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 480-442057/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 442265 — **Prep Batch: 442057**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.010		mg/L		10/26/18 17:30	10/29/18 08:43	1

Lab Sample ID: LCS 480-442057/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 442265 — **Prep Batch: 442057**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.250	0.272		mg/L		109	90 - 110

Lab Sample ID: MB 480-442514/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 442636 — **Prep Batch: 442514**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.271	^	0.010		mg/L		10/30/18 10:10	10/30/18 17:59	1

Lab Sample ID: LCS 480-442514/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 442636 — **Prep Batch: 442514**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.250	0.295	* ^	mg/L		118	90 - 110

Lab Sample ID: MB 480-444000/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 444184 — **Prep Batch: 444000**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.010		mg/L		11/06/18 17:29	11/07/18 12:26	1

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

Lab Sample ID: LCS 480-444000/2-A
Matrix: Water
Analysis Batch: 444184

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 444000

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.250	0.268		mg/L		107	90 - 110

Lab Sample ID: 480-143539-5 MS
Matrix: Water
Analysis Batch: 444184

Client Sample ID: MW-5S
Prep Type: Total/NA
Prep Batch: 444000

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	ND	H	0.100	0.110		mg/L		110	90 - 110

Lab Sample ID: 480-143539-4 DU
Matrix: Water
Analysis Batch: 444184

Client Sample ID: MW-5D
Prep Type: Total/NA
Prep Batch: 444000

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cyanide, Total	ND	H	ND		mg/L		NC	15

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 480-440324/30
Matrix: Water
Analysis Batch: 440324

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	ND		5.0		mg/L			10/18/18 12:38	1

Lab Sample ID: MB 480-440324/54
Matrix: Water
Analysis Batch: 440324

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	ND		5.0		mg/L			10/18/18 14:54	1

Lab Sample ID: LCS 480-440324/31
Matrix: Water
Analysis Batch: 440324

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Total	100	97.3		mg/L		97	90 - 110

Lab Sample ID: LCS 480-440324/55
Matrix: Water
Analysis Batch: 440324

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Total	100	97.2		mg/L		97	90 - 110

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: 480-143539-8 MS
Matrix: Water
Analysis Batch: 440324

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Total	220		100	293		mg/L		72	60 - 140

Lab Sample ID: 480-143539-9 DU
Matrix: Water
Analysis Batch: 440324

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

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity, Total	220		223		mg/L		0.6	20

Lab Sample ID: MB 480-440912/7
Matrix: Water
Analysis Batch: 440912

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	ND		5.0		mg/L			10/21/18 15:51	1

Lab Sample ID: LCS 480-440912/8
Matrix: Water
Analysis Batch: 440912

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Total	100	98.6		mg/L		99	90 - 110

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

Lab Sample ID: MB 480-441013/1
Matrix: Water
Analysis Batch: 441013

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10		mg/L			10/22/18 23:37	1

Lab Sample ID: LCS 480-441013/2
Matrix: Water
Analysis Batch: 441013

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	500	508		mg/L		102	85 - 115

Lab Sample ID: MB 480-441014/1
Matrix: Water
Analysis Batch: 441014

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10		mg/L			10/22/18 23:38	1

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

Lab Sample ID: LCS 480-441014/2
Matrix: Water
Analysis Batch: 441014

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	500	491		mg/L		98	85 - 115

Lab Sample ID: MB 480-441805/1
Matrix: Water
Analysis Batch: 441805

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10		mg/L			10/25/18 20:13	1

Lab Sample ID: LCS 480-441805/2
Matrix: Water
Analysis Batch: 441805

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	500	495		mg/L		99	85 - 115

Lab Sample ID: 480-143539-1 DU
Matrix: Water
Analysis Batch: 441805

Client Sample ID: DUP-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	300	H	306		mg/L		1	10

GC/MS VOA

Analysis Batch: 441604

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-1	DUP-1	Total/NA	Water	8260C	
480-143539-2	MW-1	Total/NA	Water	8260C	
480-143539-3	MW-3	Total/NA	Water	8260C	
MB 480-441604/7	Method Blank	Total/NA	Water	8260C	
LCS 480-441604/28	Lab Control Sample	Total/NA	Water	8260C	

Analysis Batch: 441610

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-4	MW-5D	Total/NA	Water	8260C	
480-143539-5	MW-5S	Total/NA	Water	8260C	
480-143539-6	MW-6D	Total/NA	Water	8260C	
480-143539-7	MW-6S	Total/NA	Water	8260C	
480-143539-8	MW-7D	Total/NA	Water	8260C	
480-143539-9	MW-7S	Total/NA	Water	8260C	
480-143539-10	MW-8D	Total/NA	Water	8260C	
480-143539-11	MW-8S	Total/NA	Water	8260C	
480-143539-12	PZ-1	Total/NA	Water	8260C	
480-143539-13	TRIP BLANK	Total/NA	Water	8260C	
MB 480-441610/7	Method Blank	Total/NA	Water	8260C	
LCS 480-441610/9	Lab Control Sample	Total/NA	Water	8260C	

GC/MS Semi VOA

Prep Batch: 135662

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-1	DUP-1	Total/NA	Water	3535A	
480-143539-2	MW-1	Total/NA	Water	3535A	
480-143539-3	MW-3	Total/NA	Water	3535A	
480-143539-4	MW-5D	Total/NA	Water	3535A	
480-143539-5	MW-5S	Total/NA	Water	3535A	
480-143539-6	MW-6D	Total/NA	Water	3535A	
480-143539-7	MW-6S	Total/NA	Water	3535A	
480-143539-8	MW-7D	Total/NA	Water	3535A	
480-143539-9	MW-7S	Total/NA	Water	3535A	
480-143539-10	MW-8D	Total/NA	Water	3535A	
480-143539-11	MW-8S	Total/NA	Water	3535A	
480-143539-12	PZ-1	Total/NA	Water	3535A	
MB 200-135662/1-A	Method Blank	Total/NA	Water	3535A	
LCS 200-135662/2-A	Lab Control Sample	Total/NA	Water	3535A	

Analysis Batch: 135736

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-1	DUP-1	Total/NA	Water	522	135662
480-143539-2	MW-1	Total/NA	Water	522	135662
480-143539-3	MW-3	Total/NA	Water	522	135662
480-143539-4	MW-5D	Total/NA	Water	522	135662
480-143539-5	MW-5S	Total/NA	Water	522	135662
480-143539-6	MW-6D	Total/NA	Water	522	135662
480-143539-7	MW-6S	Total/NA	Water	522	135662
480-143539-8	MW-7D	Total/NA	Water	522	135662

GC/MS Semi VOA (Continued)

Analysis Batch: 135736 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-9	MW-7S	Total/NA	Water	522	135662
480-143539-10	MW-8D	Total/NA	Water	522	135662
480-143539-11	MW-8S	Total/NA	Water	522	135662
480-143539-12	PZ-1	Total/NA	Water	522	135662
MB 200-135662/1-A	Method Blank	Total/NA	Water	522	135662
LCS 200-135662/2-A	Lab Control Sample	Total/NA	Water	522	135662

Metals

Prep Batch: 440213

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-10	MW-8D	Dissolved	Water	3005A	
MB 480-440213/1-A	Method Blank	Total/NA	Water	3005A	
LCS 480-440213/2-A	Lab Control Sample	Total/NA	Water	3005A	
480-143539-10 MS	MW-8D	Dissolved	Water	3005A	
480-143539-10 MSD	MW-8D	Dissolved	Water	3005A	

Prep Batch: 440528

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-10	MW-8D	Dissolved	Water	3020A	
MB 480-440528/1-A	Method Blank	Total/NA	Water	3020A	
LCS 480-440528/2-A	Lab Control Sample	Total/NA	Water	3020A	

Analysis Batch: 440784

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-10	MW-8D	Dissolved	Water	6010C	440213
MB 480-440213/1-A	Method Blank	Total/NA	Water	6010C	440213
LCS 480-440213/2-A	Lab Control Sample	Total/NA	Water	6010C	440213
480-143539-10 MS	MW-8D	Dissolved	Water	6010C	440213
480-143539-10 MSD	MW-8D	Dissolved	Water	6010C	440213

Prep Batch: 440976

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-10	MW-8D	Dissolved	Water	7470A	
MB 480-440976/1-A	Method Blank	Total/NA	Water	7470A	
LCS 480-440976/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 441417

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-10	MW-8D	Dissolved	Water	7470A	440976
MB 480-440976/1-A	Method Blank	Total/NA	Water	7470A	440976
LCS 480-440976/2-A	Lab Control Sample	Total/NA	Water	7470A	440976

Analysis Batch: 445426

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-10	MW-8D	Dissolved	Water	6020A	440528
MB 480-440528/1-A	Method Blank	Total/NA	Water	6020A	440528
LCS 480-440528/2-A	Lab Control Sample	Total/NA	Water	6020A	440528

Metals (Continued)

Prep Batch: 543845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-8	MW-7D	Dissolved	Water	7470A	
480-143539-11	MW-8S	Dissolved	Water	7470A	
MB 680-543845/13-A	Method Blank	Total/NA	Water	7470A	
LCS 680-543845/14-A	Lab Control Sample	Total/NA	Water	7470A	

Prep Batch: 543861

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-1	DUP-1	Dissolved	Water	7470A	
480-143539-2	MW-1	Dissolved	Water	7470A	
480-143539-3	MW-3	Dissolved	Water	7470A	
480-143539-5	MW-5S	Dissolved	Water	7470A	
480-143539-6	MW-6D	Dissolved	Water	7470A	
480-143539-7	MW-6S	Dissolved	Water	7470A	
480-143539-9	MW-7S	Dissolved	Water	7470A	
480-143539-12	PZ-1	Total/NA	Water	7470A	
MB 680-543861/1-A	Method Blank	Total/NA	Water	7470A	
LCS 680-543861/2-A	Lab Control Sample	Total/NA	Water	7470A	

Prep Batch: 543947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-1	DUP-1	Dissolved	Water	3010A	
480-143539-2	MW-1	Dissolved	Water	3010A	
480-143539-3	MW-3	Dissolved	Water	3010A	
480-143539-5	MW-5S	Dissolved	Water	3010A	
480-143539-6	MW-6D	Dissolved	Water	3010A	
480-143539-7	MW-6S	Dissolved	Water	3010A	
480-143539-8	MW-7D	Dissolved	Water	3010A	
480-143539-9	MW-7S	Dissolved	Water	3010A	
480-143539-11	MW-8S	Dissolved	Water	3010A	
480-143539-12	PZ-1	Total/NA	Water	3010A	
MB 680-543947/1-A	Method Blank	Total/NA	Water	3010A	
LCS 680-543947/2-A	Lab Control Sample	Total/NA	Water	3010A	

Analysis Batch: 544179

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-1	DUP-1	Dissolved	Water	7470A	543861
480-143539-2	MW-1	Dissolved	Water	7470A	543861
480-143539-3	MW-3	Dissolved	Water	7470A	543861
480-143539-5	MW-5S	Dissolved	Water	7470A	543861
480-143539-6	MW-6D	Dissolved	Water	7470A	543861
480-143539-7	MW-6S	Dissolved	Water	7470A	543861
480-143539-8	MW-7D	Dissolved	Water	7470A	543845
480-143539-9	MW-7S	Dissolved	Water	7470A	543861
480-143539-11	MW-8S	Dissolved	Water	7470A	543845
480-143539-12	PZ-1	Total/NA	Water	7470A	543861
MB 680-543845/13-A	Method Blank	Total/NA	Water	7470A	543845
MB 680-543861/1-A	Method Blank	Total/NA	Water	7470A	543861
LCS 680-543845/14-A	Lab Control Sample	Total/NA	Water	7470A	543845
LCS 680-543861/2-A	Lab Control Sample	Total/NA	Water	7470A	543861

Metals (Continued)

Analysis Batch: 544279

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-1	DUP-1	Dissolved	Water	6020A	543947
480-143539-2	MW-1	Dissolved	Water	6020A	543947
480-143539-3	MW-3	Dissolved	Water	6020A	543947
480-143539-5	MW-5S	Dissolved	Water	6020A	543947
480-143539-6	MW-6D	Dissolved	Water	6020A	543947
480-143539-7	MW-6S	Dissolved	Water	6020A	543947
480-143539-8	MW-7D	Dissolved	Water	6020A	543947
480-143539-9	MW-7S	Dissolved	Water	6020A	543947
480-143539-11	MW-8S	Dissolved	Water	6020A	543947
480-143539-12	PZ-1	Total/NA	Water	6020A	543947
MB 680-543947/1-A	Method Blank	Total/NA	Water	6020A	543947
LCS 680-543947/2-A	Lab Control Sample	Total/NA	Water	6020A	543947

Prep Batch: 544498

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-4	MW-5D	Dissolved	Water	3010A	
MB 680-544498/1-A	Method Blank	Total/NA	Water	3010A	
LCS 680-544498/2-A	Lab Control Sample	Total/NA	Water	3010A	
480-143539-4 MS	MW-5D	Dissolved	Water	3010A	
480-143539-4 MSD	MW-5D	Dissolved	Water	3010A	

Analysis Batch: 544756

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-4	MW-5D	Dissolved	Water	6020A	544498
MB 680-544498/1-A	Method Blank	Total/NA	Water	6020A	544498
LCS 680-544498/2-A	Lab Control Sample	Total/NA	Water	6020A	544498
480-143539-4 MS	MW-5D	Dissolved	Water	6020A	544498
480-143539-4 MSD	MW-5D	Dissolved	Water	6020A	544498

Prep Batch: 544942

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-4	MW-5D	Dissolved	Water	7470A	
MB 680-544942/1-A	Method Blank	Total/NA	Water	7470A	
LCS 680-544942/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 545120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-4	MW-5D	Dissolved	Water	7470A	544942
MB 680-544942/1-A	Method Blank	Total/NA	Water	7470A	544942
LCS 680-544942/2-A	Lab Control Sample	Total/NA	Water	7470A	544942

Analysis Batch: 545130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-12	PZ-1	Total/NA	Water	2340B-2011	
MB 680-545130/1	Method Blank	Total/NA	Water	2340B-2011	

General Chemistry

Analysis Batch: 417146

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-12	PZ-1	Total/NA	Water	9012A	417148
MB 400-417148/1-A	Method Blank	Total/NA	Water	9012A	417148
LCS 400-417148/3-A	Lab Control Sample	Total/NA	Water	9012A	417148

Prep Batch: 417148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-12	PZ-1	Total/NA	Water	9012A	
MB 400-417148/1-A	Method Blank	Total/NA	Water	9012A	
LCS 400-417148/3-A	Lab Control Sample	Total/NA	Water	9012A	

Analysis Batch: 440084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-1	DUP-1	Total/NA	Water	410.4	
480-143539-2	MW-1	Total/NA	Water	410.4	
480-143539-3	MW-3	Total/NA	Water	410.4	
480-143539-5	MW-5S	Total/NA	Water	410.4	
480-143539-6	MW-6D	Total/NA	Water	410.4	
480-143539-7	MW-6S	Total/NA	Water	410.4	
480-143539-8	MW-7D	Total/NA	Water	410.4	
480-143539-9	MW-7S	Total/NA	Water	410.4	
480-143539-10	MW-8D	Total/NA	Water	410.4	
480-143539-11	MW-8S	Total/NA	Water	410.4	
480-143539-12	PZ-1	Total/NA	Water	410.4	
MB 480-440084/27	Method Blank	Total/NA	Water	410.4	
MB 480-440084/51	Method Blank	Total/NA	Water	410.4	
LCS 480-440084/28	Lab Control Sample	Total/NA	Water	410.4	
LCS 480-440084/52	Lab Control Sample	Total/NA	Water	410.4	
480-143539-1 MS	DUP-1	Total/NA	Water	410.4	
480-143539-6 MS	MW-6D	Total/NA	Water	410.4	
480-143539-11 MS	MW-8S	Total/NA	Water	410.4	

Analysis Batch: 440110

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-1	DUP-1	Total/NA	Water	353.2	
480-143539-2	MW-1	Total/NA	Water	353.2	
480-143539-3	MW-3	Total/NA	Water	353.2	
480-143539-4	MW-5D	Total/NA	Water	353.2	
480-143539-5	MW-5S	Total/NA	Water	353.2	
480-143539-6	MW-6D	Total/NA	Water	353.2	
480-143539-7	MW-6S	Total/NA	Water	353.2	
480-143539-8	MW-7D	Total/NA	Water	353.2	
480-143539-9	MW-7S	Total/NA	Water	353.2	
480-143539-10	MW-8D	Total/NA	Water	353.2	
480-143539-11	MW-8S	Total/NA	Water	353.2	
480-143539-12	PZ-1	Total/NA	Water	353.2	

Analysis Batch: 440324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-1	DUP-1	Total/NA	Water	SM 2320B	
480-143539-3	MW-3	Total/NA	Water	SM 2320B	
480-143539-4	MW-5D	Total/NA	Water	SM 2320B	

General Chemistry (Continued)

Analysis Batch: 440324 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-5	MW-5S	Total/NA	Water	SM 2320B	
480-143539-6	MW-6D	Total/NA	Water	SM 2320B	
480-143539-7	MW-6S	Total/NA	Water	SM 2320B	
480-143539-8	MW-7D	Total/NA	Water	SM 2320B	
480-143539-9	MW-7S	Total/NA	Water	SM 2320B	
480-143539-10	MW-8D	Total/NA	Water	SM 2320B	
480-143539-11	MW-8S	Total/NA	Water	SM 2320B	
480-143539-12	PZ-1	Total/NA	Water	SM 2320B	
MB 480-440324/30	Method Blank	Total/NA	Water	SM 2320B	
MB 480-440324/54	Method Blank	Total/NA	Water	SM 2320B	
LCS 480-440324/31	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 480-440324/55	Lab Control Sample	Total/NA	Water	SM 2320B	
480-143539-8 MS	MW-7D	Total/NA	Water	SM 2320B	
480-143539-9 DU	MW-7S	Total/NA	Water	SM 2320B	

Analysis Batch: 440912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-2	MW-1	Total/NA	Water	SM 2320B	
MB 480-440912/7	Method Blank	Total/NA	Water	SM 2320B	
LCS 480-440912/8	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 440950

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-1	DUP-1	Total/NA	Water	300.0	
480-143539-3	MW-3	Total/NA	Water	300.0	
480-143539-4	MW-5D	Total/NA	Water	300.0	
480-143539-6	MW-6D	Total/NA	Water	300.0	
480-143539-7	MW-6S	Total/NA	Water	300.0	
480-143539-8	MW-7D	Total/NA	Water	300.0	
480-143539-9	MW-7S	Total/NA	Water	300.0	
480-143539-10	MW-8D	Total/NA	Water	300.0	
480-143539-11	MW-8S	Total/NA	Water	300.0	
480-143539-12	PZ-1	Total/NA	Water	300.0	
MB 480-440950/28	Method Blank	Total/NA	Water	300.0	
LCS 480-440950/27	Lab Control Sample	Total/NA	Water	300.0	
480-143539-7 MS	MW-6S	Total/NA	Water	300.0	
480-143539-7 MSD	MW-6S	Total/NA	Water	300.0	

Analysis Batch: 441013

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-2	MW-1	Total/NA	Water	SM 2540C	
480-143539-3	MW-3	Total/NA	Water	SM 2540C	
480-143539-4	MW-5D	Total/NA	Water	SM 2540C	
480-143539-5	MW-5S	Total/NA	Water	SM 2540C	
MB 480-441013/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-441013/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 441014

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-6	MW-6D	Total/NA	Water	SM 2540C	
480-143539-7	MW-6S	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 441014 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-8	MW-7D	Total/NA	Water	SM 2540C	
480-143539-9	MW-7S	Total/NA	Water	SM 2540C	
480-143539-10	MW-8D	Total/NA	Water	SM 2540C	
480-143539-11	MW-8S	Total/NA	Water	SM 2540C	
480-143539-12	PZ-1	Total/NA	Water	SM 2540C	
MB 480-441014/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-441014/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 441470

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-5	MW-5S	Total/NA	Water	300.0	
MB 480-441470/4	Method Blank	Total/NA	Water	300.0	
LCS 480-441470/3	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 441805

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-1	DUP-1	Total/NA	Water	SM 2540C	
MB 480-441805/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-441805/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-143539-1 DU	DUP-1	Total/NA	Water	SM 2540C	

Analysis Batch: 441923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-2	MW-1	Total/NA	Water	300.0	
MB 480-441923/28	Method Blank	Total/NA	Water	300.0	
LCS 480-441923/27	Lab Control Sample	Total/NA	Water	300.0	

Prep Batch: 442057

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-1	DUP-1	Total/NA	Water	9012B	
480-143539-2	MW-1	Total/NA	Water	9012B	
480-143539-3	MW-3	Total/NA	Water	9012B	
MB 480-442057/1-A	Method Blank	Total/NA	Water	9012B	
LCS 480-442057/2-A	Lab Control Sample	Total/NA	Water	9012B	

Analysis Batch: 442265

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-1	DUP-1	Total/NA	Water	9012B	442057
480-143539-2	MW-1	Total/NA	Water	9012B	442057
480-143539-3	MW-3	Total/NA	Water	9012B	442057
MB 480-442057/1-A	Method Blank	Total/NA	Water	9012B	442057
LCS 480-442057/2-A	Lab Control Sample	Total/NA	Water	9012B	442057

Prep Batch: 442514

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-4	MW-5D	Total/NA	Water	9012B	
480-143539-5	MW-5S	Total/NA	Water	9012B	
480-143539-6	MW-6D	Total/NA	Water	9012B	
480-143539-7	MW-6S	Total/NA	Water	9012B	
480-143539-8	MW-7D	Total/NA	Water	9012B	
480-143539-9	MW-7S	Total/NA	Water	9012B	

General Chemistry (Continued)

Prep Batch: 442514 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-10	MW-8D	Total/NA	Water	9012B	
480-143539-11	MW-8S	Total/NA	Water	9012B	
MB 480-442514/1-A	Method Blank	Total/NA	Water	9012B	
LCS 480-442514/3-A	Lab Control Sample	Total/NA	Water	9012B	

Analysis Batch: 442636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-4	MW-5D	Total/NA	Water	9012B	442514
480-143539-5	MW-5S	Total/NA	Water	9012B	442514
480-143539-6	MW-6D	Total/NA	Water	9012B	442514
480-143539-7	MW-6S	Total/NA	Water	9012B	442514
480-143539-8	MW-7D	Total/NA	Water	9012B	442514
480-143539-9	MW-7S	Total/NA	Water	9012B	442514
480-143539-10	MW-8D	Total/NA	Water	9012B	442514
480-143539-11	MW-8S	Total/NA	Water	9012B	442514
MB 480-442514/1-A	Method Blank	Total/NA	Water	9012B	442514
LCS 480-442514/3-A	Lab Control Sample	Total/NA	Water	9012B	442514

Analysis Batch: 442647

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-4	MW-5D	Total/NA	Water	410.4	
MB 480-442647/27	Method Blank	Total/NA	Water	410.4	
MB 480-442647/3	Method Blank	Total/NA	Water	410.4	
MB 480-442647/51	Method Blank	Total/NA	Water	410.4	
LCS 480-442647/28	Lab Control Sample	Total/NA	Water	410.4	
LCS 480-442647/4	Lab Control Sample	Total/NA	Water	410.4	
LCS 480-442647/52	Lab Control Sample	Total/NA	Water	410.4	

Prep Batch: 444000

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-4	MW-5D	Total/NA	Water	9012B	
480-143539-5	MW-5S	Total/NA	Water	9012B	
480-143539-6	MW-6D	Total/NA	Water	9012B	
480-143539-7	MW-6S	Total/NA	Water	9012B	
480-143539-8	MW-7D	Total/NA	Water	9012B	
480-143539-9	MW-7S	Total/NA	Water	9012B	
480-143539-10	MW-8D	Total/NA	Water	9012B	
480-143539-11	MW-8S	Total/NA	Water	9012B	
MB 480-444000/1-A	Method Blank	Total/NA	Water	9012B	
LCS 480-444000/2-A	Lab Control Sample	Total/NA	Water	9012B	
480-143539-5 MS	MW-5S	Total/NA	Water	9012B	
480-143539-4 DU	MW-5D	Total/NA	Water	9012B	

Analysis Batch: 444184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-4	MW-5D	Total/NA	Water	9012B	444000
480-143539-5	MW-5S	Total/NA	Water	9012B	444000
480-143539-6	MW-6D	Total/NA	Water	9012B	444000
480-143539-7	MW-6S	Total/NA	Water	9012B	444000
480-143539-8	MW-7D	Total/NA	Water	9012B	444000
480-143539-9	MW-7S	Total/NA	Water	9012B	444000

General Chemistry (Continued)

Analysis Batch: 444184 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143539-10	MW-8D	Total/NA	Water	9012B	444000
480-143539-11	MW-8S	Total/NA	Water	9012B	444000
MB 480-444000/1-A	Method Blank	Total/NA	Water	9012B	444000
LCS 480-444000/2-A	Lab Control Sample	Total/NA	Water	9012B	444000
480-143539-5 MS	MW-5S	Total/NA	Water	9012B	444000
480-143539-4 DU	MW-5D	Total/NA	Water	9012B	444000

Client Sample ID: DUP-1 **Lab Sample ID: 480-143539-1**
Date Collected: 10/16/18 00:00 **Matrix: Water**
Date Received: 10/17/18 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	441604	10/25/18 13:16	NMC	TAL BUF
Total/NA	Prep	3535A			135662	10/23/18 14:15	MJW	TAL BUR
Total/NA	Analysis	522		1	135736	10/24/18 12:51	K1P	TAL BUR
Dissolved	Prep	3010A			543947	10/18/18 15:22	AJR	TAL SAV
Dissolved	Analysis	6020A		1	544279	10/19/18 17:30	BWR	TAL SAV
Dissolved	Prep	7470A			543861	10/18/18 09:29	PEP	TAL SAV
Dissolved	Analysis	7470A		1	544179	10/19/18 21:22	BCB	TAL SAV
Total/NA	Analysis	300.0		5	440950	10/23/18 18:17	DMR	TAL BUF
Total/NA	Analysis	353.2		1	440110	10/17/18 17:35	DCB	TAL BUF
Total/NA	Analysis	410.4		1	440084	10/17/18 18:30	JMC	TAL BUF
Total/NA	Prep	9012B			442057	10/26/18 17:30	AED	TAL BUF
Total/NA	Analysis	9012B		1	442265	10/29/18 09:13	CLT	TAL BUF
Total/NA	Analysis	SM 2320B		1	440324	10/18/18 14:08	KEB	TAL BUF
Total/NA	Analysis	SM 2540C		1	441805	10/25/18 20:13	KTP	TAL BUF

Client Sample ID: MW-1 **Lab Sample ID: 480-143539-2**
Date Collected: 10/16/18 09:30 **Matrix: Water**
Date Received: 10/17/18 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	441604	10/25/18 13:43	NMC	TAL BUF
Total/NA	Prep	3535A			135662	10/23/18 14:15	MJW	TAL BUR
Total/NA	Analysis	522		1	135736	10/24/18 13:05	K1P	TAL BUR
Dissolved	Prep	3010A			543947	10/18/18 15:22	AJR	TAL SAV
Dissolved	Analysis	6020A		1	544279	10/19/18 17:06	BWR	TAL SAV
Dissolved	Prep	7470A			543861	10/18/18 09:29	PEP	TAL SAV
Dissolved	Analysis	7470A		1	544179	10/19/18 21:48	BCB	TAL SAV
Total/NA	Analysis	300.0		5	441923	10/26/18 20:59	DMR	TAL BUF
Total/NA	Analysis	353.2		1	440110	10/17/18 17:36	DCB	TAL BUF
Total/NA	Analysis	410.4		1	440084	10/17/18 18:30	JMC	TAL BUF
Total/NA	Prep	9012B			442057	10/26/18 17:30	AED	TAL BUF
Total/NA	Analysis	9012B		1	442265	10/29/18 09:18	CLT	TAL BUF
Total/NA	Analysis	SM 2320B		1	440912	10/21/18 16:29	KEB	TAL BUF
Total/NA	Analysis	SM 2540C		1	441013	10/22/18 23:37	MLS	TAL BUF

Client Sample ID: MW-3 **Lab Sample ID: 480-143539-3**
Date Collected: 10/16/18 15:15 **Matrix: Water**
Date Received: 10/17/18 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	441604	10/25/18 14:10	NMC	TAL BUF
Total/NA	Prep	3535A			135662	10/23/18 14:15	MJW	TAL BUR

Lab Chronicle

Client: Weston & Sampson Engineers
TestAmerica Job ID: 480-143539-1
Project/Site: Dighton Landfill

Client Sample ID: MW-3
Lab Sample ID: 480-143539-3

Date Collected: 10/16/18 15:15
Matrix: Water
Date Received: 10/17/18 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	522		1	135736	10/24/18 13:19	K1P	TAL BUR
Dissolved	Prep	3010A			543947	10/18/18 15:22	AJR	TAL SAV
Dissolved	Analysis	6020A		1	544279	10/19/18 17:23	BWR	TAL SAV
Dissolved	Prep	7470A			543861	10/18/18 09:29	PEP	TAL SAV
Dissolved	Analysis	7470A		1	544179	10/19/18 21:32	BCB	TAL SAV
Total/NA	Analysis	300.0		2	440950	10/23/18 18:32	DMR	TAL BUF
Total/NA	Analysis	353.2		1	440110	10/17/18 17:37	DCB	TAL BUF
Total/NA	Analysis	410.4		1	440084	10/17/18 18:30	JMC	TAL BUF
Total/NA	Prep	9012B			442057	10/26/18 17:30	AED	TAL BUF
Total/NA	Analysis	9012B		1	442265	10/29/18 09:19	CLT	TAL BUF
Total/NA	Analysis	SM 2320B		1	440324	10/18/18 14:17	KEB	TAL BUF
Total/NA	Analysis	SM 2540C		1	441013	10/22/18 23:37	MLS	TAL BUF

Client Sample ID: MW-5D
Lab Sample ID: 480-143539-4

Date Collected: 10/16/18 14:50
Matrix: Water
Date Received: 10/17/18 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	441610	10/25/18 12:08	AEM	TAL BUF
Total/NA	Prep	3535A			135662	10/23/18 14:15	MJW	TAL BUR
Total/NA	Analysis	522		1	135736	10/24/18 13:34	K1P	TAL BUR
Dissolved	Prep	3010A			544498	10/23/18 10:05	AJR	TAL SAV
Dissolved	Analysis	6020A		1	544756	10/24/18 14:05	BJB	TAL SAV
Dissolved	Prep	7470A			544942	10/25/18 12:21	PEP	TAL SAV
Dissolved	Analysis	7470A		1	545120	10/26/18 13:00	BCB	TAL SAV
Total/NA	Analysis	300.0		1	440950	10/23/18 18:46	DMR	TAL BUF
Total/NA	Analysis	353.2		1	440110	10/17/18 20:19	DCB	TAL BUF
Total/NA	Analysis	410.4		1	442647	10/30/18 18:49	JMC	TAL BUF
Total/NA	Prep	9012B			442514	10/30/18 10:10	AED	TAL BUF
Total/NA	Analysis	9012B		1	442636	10/30/18 18:05	CLT	TAL BUF
Total/NA	Prep	9012B			444000	11/06/18 17:29	LAW	TAL BUF
Total/NA	Analysis	9012B		1	444184	11/07/18 12:30	CLT	TAL BUF
Total/NA	Analysis	SM 2320B		1	440324	10/18/18 14:22	KEB	TAL BUF
Total/NA	Analysis	SM 2540C		1	441013	10/22/18 23:37	MLS	TAL BUF

Client Sample ID: MW-5S
Lab Sample ID: 480-143539-5

Date Collected: 10/16/18 14:45
Matrix: Water
Date Received: 10/17/18 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	441610	10/25/18 12:32	AEM	TAL BUF
Total/NA	Prep	3535A			135662	10/23/18 14:15	MJW	TAL BUR

Client Sample ID: MW-5S

Lab Sample ID: 480-143539-5

Date Collected: 10/16/18 14:45
Date Received: 10/17/18 01:00

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	522		1	135736	10/24/18 13:48	K1P	TAL BUR
Dissolved	Prep	3010A			543947	10/18/18 15:22	AJR	TAL SAV
Dissolved	Analysis	6020A		1	544279	10/19/18 17:45	BWR	TAL SAV
Dissolved	Prep	7470A			543861	10/18/18 09:29	PEP	TAL SAV
Dissolved	Analysis	7470A		1	544179	10/19/18 21:55	BCB	TAL SAV
Total/NA	Analysis	300.0		1	441470	10/24/18 21:07	DMR	TAL BUF
Total/NA	Analysis	353.2		1	440110	10/17/18 20:23	DCB	TAL BUF
Total/NA	Analysis	410.4		1	440084	10/17/18 18:30	JMC	TAL BUF
Total/NA	Prep	9012B			442514	10/30/18 10:10	AED	TAL BUF
Total/NA	Analysis	9012B		1	442636	10/30/18 18:06	CLT	TAL BUF
Total/NA	Prep	9012B			444000	11/06/18 17:29	LAW	TAL BUF
Total/NA	Analysis	9012B		1	444184	11/07/18 12:33	CLT	TAL BUF
Total/NA	Analysis	SM 2320B		1	440324	10/18/18 14:26	KEB	TAL BUF
Total/NA	Analysis	SM 2540C		1	441013	10/22/18 23:37	MLS	TAL BUF

Client Sample ID: MW-6D

Lab Sample ID: 480-143539-6

Date Collected: 10/16/18 13:45
Date Received: 10/17/18 01:00

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	441610	10/25/18 12:56	AEM	TAL BUF
Total/NA	Prep	3535A			135662	10/23/18 14:15	MJW	TAL BUR
Total/NA	Analysis	522		1	135736	10/24/18 14:02	K1P	TAL BUR
Dissolved	Prep	3010A			543947	10/18/18 15:22	AJR	TAL SAV
Dissolved	Analysis	6020A		1	544279	10/19/18 17:09	BWR	TAL SAV
Dissolved	Prep	7470A			543861	10/18/18 09:29	PEP	TAL SAV
Dissolved	Analysis	7470A		1	544179	10/19/18 21:42	BCB	TAL SAV
Total/NA	Analysis	300.0		1	440950	10/23/18 19:15	DMR	TAL BUF
Total/NA	Analysis	353.2		1	440110	10/17/18 17:46	DCB	TAL BUF
Total/NA	Analysis	410.4		1	440084	10/17/18 18:30	JMC	TAL BUF
Total/NA	Prep	9012B			442514	10/30/18 10:10	AED	TAL BUF
Total/NA	Analysis	9012B		1	442636	10/30/18 18:08	CLT	TAL BUF
Total/NA	Prep	9012B			444000	11/06/18 17:29	LAW	TAL BUF
Total/NA	Analysis	9012B		1	444184	11/07/18 12:36	CLT	TAL BUF
Total/NA	Analysis	SM 2320B		1	440324	10/18/18 14:32	KEB	TAL BUF
Total/NA	Analysis	SM 2540C		1	441014	10/22/18 23:38	MLS	TAL BUF

Client: Weston & Sampson Engineers | TestAmerica Job ID: 480-143539-1
Project/Site: Dighton Landfill

Client Sample ID: MW-6S — Lab Sample ID: 480-143539-7

Date Collected: 10/16/18 13:15 — **Matrix: Water**
Date Received: 10/17/18 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	441610	10/25/18 13:20	AEM	TAL BUF
Total/NA	Prep	3535A			135662	10/23/18 14:15	MJW	TAL BUR
Total/NA	Analysis	522		1	135736	10/24/18 14:17	K1P	TAL BUR
Dissolved	Prep	3010A			543947	10/18/18 15:22	AJR	TAL SAV
Dissolved	Analysis	6020A		1	544279	10/19/18 17:13	BWR	TAL SAV
Dissolved	Prep	7470A			543861	10/18/18 09:29	PEP	TAL SAV
Dissolved	Analysis	7470A		1	544179	10/19/18 21:58	BCB	TAL SAV
Total/NA	Analysis	300.0		1	440950	10/23/18 19:30	DMR	TAL BUF
Total/NA	Analysis	353.2		1	440110	10/17/18 17:47	DCB	TAL BUF
Total/NA	Analysis	410.4		1	440084	10/17/18 18:30	JMC	TAL BUF
Total/NA	Prep	9012B			442514	10/30/18 10:10	AED	TAL BUF
Total/NA	Analysis	9012B		1	442636	10/30/18 18:11	CLT	TAL BUF
Total/NA	Prep	9012B			444000	11/06/18 17:29	LAW	TAL BUF
Total/NA	Analysis	9012B		1	444184	11/07/18 12:38	CLT	TAL BUF
Total/NA	Analysis	SM 2320B		1	440324	10/18/18 14:37	KEB	TAL BUF
Total/NA	Analysis	SM 2540C		1	441014	10/22/18 23:38	MLS	TAL BUF

Client Sample ID: MW-7D — Lab Sample ID: 480-143539-8

Date Collected: 10/16/18 10:45 — **Matrix: Water**
Date Received: 10/17/18 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	441610	10/25/18 13:44	AEM	TAL BUF
Total/NA	Prep	3535A			135662	10/23/18 14:15	MJW	TAL BUR
Total/NA	Analysis	522		1	135736	10/24/18 14:31	K1P	TAL BUR
Dissolved	Prep	3010A			543947	10/18/18 15:22	AJR	TAL SAV
Dissolved	Analysis	6020A		1	544279	10/19/18 17:34	BWR	TAL SAV
Dissolved	Prep	7470A			543845	10/18/18 08:28	PEP	TAL SAV
Dissolved	Analysis	7470A		1	544179	10/19/18 14:27	BCB	TAL SAV
Total/NA	Analysis	300.0		1	440950	10/23/18 20:43	DMR	TAL BUF
Total/NA	Analysis	353.2		1	440110	10/17/18 17:49	DCB	TAL BUF
Total/NA	Analysis	410.4		1	440084	10/17/18 18:30	JMC	TAL BUF
Total/NA	Prep	9012B			442514	10/30/18 10:10	AED	TAL BUF
Total/NA	Analysis	9012B		1	442636	10/30/18 18:12	CLT	TAL BUF
Total/NA	Prep	9012B			444000	11/06/18 17:29	LAW	TAL BUF
Total/NA	Analysis	9012B		1	444184	11/07/18 12:39	CLT	TAL BUF
Total/NA	Analysis	SM 2320B		1	440324	10/18/18 15:06	KEB	TAL BUF
Total/NA	Analysis	SM 2540C		1	441014	10/22/18 23:38	MLS	TAL BUF

Client: Weston & Sampson Engineers
Project/Site: Dighton Landfill

TestAmerica Job ID: 480-143539-1

Client Sample ID: MW-7S
Date Collected: 10/16/18 10:30
Date Received: 10/17/18 01:00

Lab Sample ID: 480-143539-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	441610	10/25/18 14:07	AEM	TAL BUF
Total/NA	Prep	3535A			135662	10/23/18 14:15	MJW	TAL BUR
Total/NA	Analysis	522		1	135736	10/24/18 14:45	K1P	TAL BUR
Dissolved	Prep	3010A			543947	10/18/18 15:22	AJR	TAL SAV
Dissolved	Analysis	6020A		1	544279	10/19/18 17:27	BWR	TAL SAV
Dissolved	Prep	7470A			543861	10/18/18 09:29	PEP	TAL SAV
Dissolved	Analysis	7470A		1	544179	10/19/18 21:19	BCB	TAL SAV
Total/NA	Analysis	300.0		1	440950	10/23/18 20:57	DMR	TAL BUF
Total/NA	Analysis	353.2		1	440110	10/17/18 20:24	DCB	TAL BUF
Total/NA	Analysis	410.4		1	440084	10/17/18 18:30	JMC	TAL BUF
Total/NA	Prep	9012B			442514	10/30/18 10:10	AED	TAL BUF
Total/NA	Analysis	9012B		1	442636	10/30/18 18:16	CLT	TAL BUF
Total/NA	Prep	9012B			444000	11/06/18 17:29	LAW	TAL BUF
Total/NA	Analysis	9012B		1	444184	11/07/18 12:43	CLT	TAL BUF
Total/NA	Analysis	SM 2320B		1	440324	10/18/18 15:18	KEB	TAL BUF
Total/NA	Analysis	SM 2540C		1	441014	10/22/18 23:38	MLS	TAL BUF

Client Sample ID: MW-8D
Date Collected: 10/16/18 12:15
Date Received: 10/17/18 01:00

Lab Sample ID: 480-143539-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	441610	10/25/18 14:31	AEM	TAL BUF
Total/NA	Prep	3535A			135662	10/23/18 14:15	MJW	TAL BUR
Total/NA	Analysis	522		1	135736	10/24/18 14:59	K1P	TAL BUR
Dissolved	Prep	3005A			440213	10/18/18 13:34	VEG	TAL BUF
Dissolved	Analysis	6010C		1	440784	10/20/18 19:18	LMH	TAL BUF
Dissolved	Prep	3020A			440528	10/19/18 14:57	VEG	TAL BUF
Dissolved	Analysis	6020A		1	445426	11/14/18 03:29	AMH	TAL BUF
Dissolved	Prep	7470A			440976	10/23/18 11:20	BMB	TAL BUF
Dissolved	Analysis	7470A		1	441417	10/23/18 14:22	BMB	TAL BUF
Total/NA	Analysis	300.0		1	440950	10/23/18 21:12	DMR	TAL BUF
Total/NA	Analysis	353.2		1	440110	10/17/18 17:51	DCB	TAL BUF
Total/NA	Analysis	410.4		1	440084	10/17/18 18:30	JMC	TAL BUF
Total/NA	Prep	9012B			442514	10/30/18 10:10	AED	TAL BUF
Total/NA	Analysis	9012B		1	442636	10/30/18 18:18	CLT	TAL BUF
Total/NA	Prep	9012B			444000	11/06/18 17:29	LAW	TAL BUF
Total/NA	Analysis	9012B		1	444184	11/07/18 12:45	CLT	TAL BUF
Total/NA	Analysis	SM 2320B		1	440324	10/18/18 15:29	KEB	TAL BUF
Total/NA	Analysis	SM 2540C		1	441014	10/22/18 23:38	MLS	TAL BUF

Client Sample ID: MW-8S — Lab Sample ID: 480-143539-11

Date Collected: 10/16/18 12:00 — **Matrix: Water**

Date Received: 10/17/18 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	441610	10/25/18 14:54	AEM	TAL BUF
Total/NA	Prep	3535A			135662	10/23/18 14:15	MJW	TAL BUR
Total/NA	Analysis	522		1	135736	10/24/18 15:28	K1P	TAL BUR
Dissolved	Prep	3010A			543947	10/18/18 15:22	AJR	TAL SAV
Dissolved	Analysis	6020A		1	544279	10/19/18 17:38	BWR	TAL SAV
Dissolved	Prep	7470A			543845	10/18/18 08:28	PEP	TAL SAV
Dissolved	Analysis	7470A		1	544179	10/19/18 14:23	BCB	TAL SAV
Total/NA	Analysis	300.0		1	440950	10/23/18 21:27	DMR	TAL BUF
Total/NA	Analysis	353.2		1	440110	10/17/18 17:57	DCB	TAL BUF
Total/NA	Analysis	410.4		1	440084	10/17/18 18:30	JMC	TAL BUF
Total/NA	Prep	9012B			442514	10/30/18 10:10	AED	TAL BUF
Total/NA	Analysis	9012B		1	442636	10/30/18 18:19	CLT	TAL BUF
Total/NA	Prep	9012B			444000	11/06/18 17:29	LAW	TAL BUF
Total/NA	Analysis	9012B		1	444184	11/07/18 12:46	CLT	TAL BUF
Total/NA	Analysis	SM 2320B		1	440324	10/18/18 15:33	KEB	TAL BUF
Total/NA	Analysis	SM 2540C		1	441014	10/22/18 23:38	MLS	TAL BUF

Client Sample ID: PZ-1 — Lab Sample ID: 480-143539-12

Date Collected: 10/16/18 11:00 — **Matrix: Water**

Date Received: 10/17/18 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	441610	10/25/18 15:18	AEM	TAL BUF
Total/NA	Prep	3535A			135662	10/23/18 14:15	MJW	TAL BUR
Total/NA	Analysis	522		1	135736	10/24/18 15:42	K1P	TAL BUR
Total/NA	Analysis	2340B-2011		1	545130	10/26/18 15:19	BCB	TAL SAV
Total/NA	Prep	3010A			543947	10/18/18 15:22	AJR	TAL SAV
Total/NA	Analysis	6020A		1	544279	10/19/18 17:41	BWR	TAL SAV
Total/NA	Prep	7470A			543861	10/18/18 09:29	PEP	TAL SAV
Total/NA	Analysis	7470A		1	544179	10/19/18 21:15	BCB	TAL SAV
Total/NA	Analysis	300.0		1	440950	10/23/18 21:41	DMR	TAL BUF
Total/NA	Analysis	353.2		1	440110	10/17/18 20:25	DCB	TAL BUF
Total/NA	Analysis	410.4		1	440084	10/17/18 18:30	JMC	TAL BUF
Total/NA	Prep	9012A			417148	10/26/18 10:47	BAB	TAL PEN
Total/NA	Analysis	9012A		1	417146	10/26/18 15:48	BAB	TAL PEN
Total/NA	Analysis	SM 2320B		1	440324	10/18/18 15:39	KEB	TAL BUF
Total/NA	Analysis	SM 2540C		1	441014	10/22/18 23:38	MLS	TAL BUF

Client Sample ID: TRIP BLANK

Lab Sample ID: 480-143539-13

Date Collected: 10/16/18 00:00
Matrix: Water
Date Received: 10/17/18 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	441610	10/25/18 15:41	AEM	TAL BUF

Laboratory References:

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

TAL BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

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

Accreditation/Certification Summary

Client: Weston & Sampson Engineers | TestAmerica Job ID: 480-143539-1
Project/Site: Dighton Landfill

Laboratory: TestAmerica Buffalo

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Massachusetts	State Program	1	M-NY044	06-30-19

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

Analysis Method	Prep Method	Matrix	Analyte
6010C	3005A	Water	Barium
6010C	3005A	Water	Cadmium
6010C	3005A	Water	Calcium
6010C	3005A	Water	Chromium
6010C	3005A	Water	Copper
6010C	3005A	Water	Iron
6010C	3005A	Water	Manganese
6010C	3005A	Water	Selenium
6010C	3005A	Water	Silver
6010C	3005A	Water	Sodium
6010C	3005A	Water	Zinc
6020A	3020A	Water	Arsenic
6020A	3020A	Water	Lead
7470A	7470A	Water	Mercury
8260C		Water	1,1,1,2-Tetrachloroethane
8260C		Water	1,1,1-Trichloroethane
8260C		Water	1,1,2,2-Tetrachloroethane
8260C		Water	1,1,2-Trichloroethane
8260C		Water	1,1-Dichloroethane
8260C		Water	1,1-Dichloroethene
8260C		Water	1,1-Dichloropropene
8260C		Water	1,2,3-Trichlorobenzene
8260C		Water	1,2,3-Trichloropropane
8260C		Water	1,2,4-Trichlorobenzene
8260C		Water	1,2,4-Trimethylbenzene
8260C		Water	1,2-Dibromo-3-Chloropropane
8260C		Water	1,2-Dibromoethane
8260C		Water	1,2-Dichlorobenzene
8260C		Water	1,2-Dichloroethane
8260C		Water	1,2-Dichloropropane
8260C		Water	1,3,5-Trimethylbenzene
8260C		Water	1,3-Dichlorobenzene
8260C		Water	1,3-Dichloropropane
8260C		Water	1,4-Dichlorobenzene
8260C		Water	2,2-Dichloropropane
8260C		Water	2-Butanone (MEK)
8260C		Water	2-Chlorotoluene
8260C		Water	2-Hexanone
8260C		Water	4-Chlorotoluene
8260C		Water	4-Isopropyltoluene
8260C		Water	4-Methyl-2-pentanone (MIBK)
8260C		Water	Acetone
8260C		Water	Benzene
8260C		Water	Bromobenzene
8260C		Water	Bromochloromethane

Laboratory: TestAmerica Buffalo (Continued)

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

Authority	Program		EPA Region	Identification Number	Expiration Date
Massachusetts	State Program		1	M-NY044	06-30-19
8260C		Water		Bromodichloromethane	
8260C		Water		Bromoform	
8260C		Water		Bromomethane	
8260C		Water		Carbon tetrachloride	
8260C		Water		Chlorobenzene	
8260C		Water		Chloroethane	
8260C		Water		Chloroform	
8260C		Water		Chloromethane	
8260C		Water		cis-1,2-Dichloroethene	
8260C		Water		cis-1,3-Dichloropropene	
8260C		Water		Dibromochloromethane	
8260C		Water		Dibromomethane	
8260C		Water		Ethylbenzene	
8260C		Water		Hexachlorobutadiene	
8260C		Water		Isopropylbenzene	
8260C		Water		m,p-Xylene	
8260C		Water		Methyl tert-butyl ether	
8260C		Water		Methylene Chloride	
8260C		Water		Naphthalene	
8260C		Water		n-Butylbenzene	
8260C		Water		N-Propylbenzene	
8260C		Water		o-Xylene	
8260C		Water		sec-Butylbenzene	
8260C		Water		Styrene	
8260C		Water		tert-Butylbenzene	
8260C		Water		Tetrachloroethene	
8260C		Water		Toluene	
8260C		Water		trans-1,2-Dichloroethene	
8260C		Water		trans-1,3-Dichloropropene	
8260C		Water		Trichloroethene	
8260C		Water		Trichlorofluoromethane	
8260C		Water		Vinyl chloride	
9012B	9012B	Water		Cyanide, Total	

Laboratory: TestAmerica Burlington

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

Authority	Program	EPA Region	Identification Number	Expiration Date
ANAB	DoD ELAP		L2336	02-25-20
Connecticut	State Program	1	PH-0751	09-30-19
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	NA	02-01-19
Florida	NELAP	4	E87467	06-30-19
Maine	State Program	1	VT00008	04-17-19
Minnesota	NELAP	5	050-999-436	12-31-18
New Hampshire	NELAP	1	2006	12-18-18 *
New Jersey	NELAP	2	VT972	06-30-19
New York	NELAP	2	10391	04-01-19
Pennsylvania	NELAP	3	68-00489	04-30-19
Rhode Island	State Program	1	LAO00298	12-30-18

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

Laboratory: TestAmerica Burlington (Continued)

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

Authority	Program	EPA Region	Identification Number	Expiration Date
US Fish & Wildlife	Federal		LE-058448-0	07-31-19
USDA	Federal		P330-11-00093	07-24-20
Vermont	State Program	1	VT-4000	12-31-18
Virginia	NELAP	3	460209	12-14-18 *

Laboratory: TestAmerica Pensacola

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alabama	State Program	4	40150	06-30-19
ANAB	ISO/IEC 17025		L2471	02-22-20
Arizona	State Program	9	AZ0710	01-12-19
Arkansas DEQ	State Program	6	88-0689	09-01-19
California	State Program	9	2510	06-30-19
Florida	NELAP	4	E81010	06-30-19
Georgia	State Program	4	E81010 (FL)	06-30-19
Illinois	NELAP	5	200041	10-09-19
Iowa	State Program	7	367	08-01-20
Kansas	NELAP	7	E-10253	10-31-18 *
Kentucky (UST)	State Program	4	53	06-30-19
Kentucky (WW)	State Program	4	98030	12-31-18
Louisiana	NELAP	6	30976	06-30-19
Louisiana (DW)	NELAP	6	LA180023	12-31-18
Maryland	State Program	3	233	09-30-19
Massachusetts	State Program	1	M-FL094	06-30-19
Michigan	State Program	5	9912	06-30-19
New Jersey	NELAP	2	FL006	06-30-19
North Carolina (WW/SW)	State Program	4	314	12-31-18
Oklahoma	State Program	6	9810	08-31-19
Pennsylvania	NELAP	3	68-00467	01-31-19
Rhode Island	State Program	1	LAO00307	12-30-18
South Carolina	State Program	4	96026	06-30-19
Tennessee	State Program	4	TN02907	06-30-19
Texas	NELAP	6	T104704286-18-16	09-30-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-18-00148	05-17-21
Virginia	NELAP	3	460166	06-14-19
Washington	State Program	10	C915	05-15-19
West Virginia DEP	State Program	3	136	06-30-19

Laboratory: TestAmerica Savannah

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

Authority	Program	EPA Region	Identification Number	Expiration Date
	AFCEE		SAVLAB	
Alabama	State Program	4	41450	06-30-19
Alaska	State Program	10		06-30-19
Alaska (UST)	State Program	10	UST-104	09-22-19
ANAB	DoD ELAP		L2463	09-22-19
ANAB	ISO/IEC 17025		L2463.01	09-22-19
Arizona	State Program	9	AZ0808	12-14-18

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

Laboratory: TestAmerica Savannah (Continued)

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Arkansas DEQ	State Program	6	88-0692	02-01-19
California	State Program	9	2939	06-30-19
Colorado	State Program	8	N/A	12-31-18
Connecticut	State Program	1	PH-0161	03-31-19
Florida	NELAP	4	E87052	06-30-19
GA Dept. of Agriculture	State Program	4	N/A	06-12-19
Georgia	State Program	4	N/A	06-30-19
Guam	State Program	9	15-005r	04-17-19
Hawaii	State Program	9	N/A	06-30-19
Illinois	NELAP	5	200022	11-30-18
Indiana	State Program	5	N/A	06-30-19
Iowa	State Program	7	353	06-30-19
Kentucky (DW)	State Program	4	90084	12-31-18
Kentucky (UST)	State Program	4	18	06-30-19
Kentucky (WW)	State Program	4	90084	12-31-18 *
Louisiana	NELAP	6	30690	06-30-19
Louisiana (DW)	NELAP	6	LA160019	12-31-18
Maine	State Program	1	GA00006	09-25-20
Maryland	State Program	3	250	12-31-18
Massachusetts	State Program	1	M-GA006	06-30-19
Michigan	State Program	5	9925	03-05-19
Mississippi	State Program	4	N/A	06-30-19
Nebraska	State Program	7	TestAmerica-Savannah	06-30-19
New Jersey	NELAP	2	GA769	06-30-19
New Mexico	State Program	6	N/A	06-30-19
New York	NELAP	2	10842	03-31-19
North Carolina (DW)	State Program	4	13701	07-31-19
North Carolina (WW/SW)	State Program	4	269	12-31-18
Oklahoma	State Program	6	9984	08-31-19
Pennsylvania	NELAP	3	68-00474	06-30-19
Puerto Rico	State Program	2	GA00006	12-31-18
South Carolina	State Program	4	98001	06-30-18 *
Tennessee	State Program	4	TN02961	06-30-19
Texas	NELAP	6	T104704185-16-9	11-30-18
Texas (DW)	State Program	1	T104704185	06-30-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
Virginia	NELAP	3	460161	06-14-19
Washington	State Program	10	C805	06-10-19
West Virginia (DW)	State Program	3	9950C	12-31-18
West Virginia DEP	State Program	3	094	06-30-19
Wisconsin	State Program	5	999819810	08-31-19
Wyoming	State Program	8	8TMS-L	06-30-16 *

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

Method Summary

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL BUF
522	1,4 Dioxane (GC/MS SIM)	EPA	TAL BUR
2340B-2011	Total Hardness (as CaCO3) by calculation	SM	TAL SAV
6010C	Metals (ICP)	SW846	TAL BUF
6020A	Metals (ICP/MS)	SW846	TAL BUF
6020A	Metals (ICP/MS)	SW846	TAL SAV
7470A	Mercury (CVAA)	SW846	TAL BUF
7470A	Mercury (CVAA)	SW846	TAL SAV
300.0	Anions, Ion Chromatography	MCAWW	TAL BUF
353.2	Nitrate	EPA	TAL BUF
410.4	COD	MCAWW	TAL BUF
9012A	Cyanide, Total and/or Amenable	SW846	TAL PEN
9012B	Cyanide, Total andor Amenable	SW846	TAL BUF
SM 2320B	Alkalinity	SM	TAL BUF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL BUF
3005A	Preparation, Total Metals	SW846	TAL BUF
3010A	Preparation, Total Metals	SW846	TAL SAV
3020A	Preparation, Total Metals	SW846	TAL BUF
3535A	Solid Phase Extraction (SPE)	SW846	TAL BUR
5030C	Purge and Trap	SW846	TAL BUF
7470A	Preparation, Mercury	SW846	TAL BUF
7470A	Preparation, Mercury	SW846	TAL SAV
9012A	Cyanide, Total and/or Amenable, Distillation	SW846	TAL PEN
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	TAL BUF

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

Laboratory References:

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

TAL BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

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

Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-143539-1	DUP-1	Water	10/16/18 00:00	10/17/18 01:00
480-143539-2	MW-1	Water	10/16/18 09:30	10/17/18 01:00
480-143539-3	MW-3	Water	10/16/18 15:15	10/17/18 01:00
480-143539-4	MW-5D	Water	10/16/18 14:50	10/17/18 01:00
480-143539-5	MW-5S	Water	10/16/18 14:45	10/17/18 01:00
480-143539-6	MW-6D	Water	10/16/18 13:45	10/17/18 01:00
480-143539-7	MW-6S	Water	10/16/18 13:15	10/17/18 01:00
480-143539-8	MW-7D	Water	10/16/18 10:45	10/17/18 01:00
480-143539-9	MW-7S	Water	10/16/18 10:30	10/17/18 01:00
480-143539-10	MW-8D	Water	10/16/18 12:15	10/17/18 01:00
480-143539-11	MW-8S	Water	10/16/18 12:00	10/17/18 01:00
480-143539-12	PZ-1	Water	10/16/18 11:00	10/17/18 01:00
480-143539-13	TRIP BLANK	Water	10/16/18 00:00	10/17/18 01:00

TestAmerica Westfield
501 Southampton Road, Unit C
Westfield, MA 01085
Phone (413) 572-4000 Fax (413) 572-3707

Chain of Custody Record

360025-Boston

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

480-143539 COC

Client Information	Sampler:	Lab PM: Steve Hartmann	Carrier Tracking No(s):	COC No:
Client Contact: Loren McGrath	Phone:	E-Mail: steve.hartmann@testamericainc.com		Page: Page 1 of 2
Company: Weston & Sampson Engineers				Job #:
Address: 5 Centennial Drive	Due Date Requested:			
City: Peabody	TAT Requested (days): 7 days			
State, Zip: MA, 01960				
Phone: 978-532-1900	PO #: Purchase order not required			
Email: mcgrathl@wseinc.com	WO #:			
Project Name: MA Landfills	Project #: 48006597			
Site: Dighton Landfill	SSOW#:			

Analysis Requested

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

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	410.4 - Chemical Oxygen Demand	Alkalinity/Chloride/Nitrate/Sulfate/TDS	9012B - Cyanide, Total	GW metals (As/Ba/Cd/Ca/Cr/Cu/Fe/Pb/Mn/Hg/Se/Ag/Na/Zn)	SW metals (As/Ba/Cd/Ca/Cr/Cu/Fe/Pb/Mn/Hg/Se/Ag/Na/Zn)	8260C - with TICS	1,4 Dioxane @ 0.3ug/L - EPA522	Hardness	9012A Cyanide for SW	Total Number of containers	Special Instructions/Note:
				Preservation Code:			S	N	B	D	D	A	A	D			
MW-1	10/16	9:30	G	GW			X	X	X	X		X	X				groundwater metals are dissolved-field filtered
~~MW-2~~				~~GW~~			~~X~~	~~X~~	~~X~~	~~X~~		~~X~~	~~X~~				surfacewater metals are total
MW-3		1515		GW			X	X	X	X		X	X				
MW-5S		1445		GW			X	X	X	X		X	X				
MW-5D		1450		GW			X	X	X	X		X	X				
MW-6S		1315		GW			X	X	X	X		X	X				
MW-6D		1345		GW			X	X	X	X		X	X				
MW-7S		1030		GW			X	X	X	X		X	X				
MW-7D		1045		GW			X	X	X	X		X	X				
MW-8S		1200		GW			X	X	X	X		X	X				
MW-8D		1215		GW			X	X	X	X		X	X				

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

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 10/16	Company	Received by:	Date/Time: 10/16/18 15:40	Company TA
Relinquished by:	Date/Time: 10/16/18 1750	Company TA	Received by:	Date/Time: 10/17/18 0100	Company TAS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.4, 1.1°C #3

Page 83 of 93

11/14/2018

TestAmerica Westfield
501 Southampton Road, Unit C
Westfield, MA 01085
Phone (413) 572-4000 Fax (413) 572-3707

Chain of Custody Record

380325-Boston

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler:	Lab PM: Steve Hartmann	Carrier Tracking No(s):	COC No:
Client Contact: Loren McGrath	Phone:	E-Mail: steve.hartmann@testamericainc.com		Page: Page 2 of 2
Company: Weston & Sampson Engineers				Job #:
Address: 5 Centennial Drive	Due Date Requested:			
City: Peabody	TAT Requested (days): 7 days			
State, Zip: MA, 01960				
Phone: 978-532-1900	PO #: Purchase order not required			
Email: mcgrathl@wseinc.com	WO #:			
Project Name: MA Landfills	Project #: 48006597			
Site: Dighton Landfill	SSOW#:			

Analysis Requested

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

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	410.4 - Chemical Oxygen Demand	Alkalinity/Chloride/Nitrate/Sulfate/TDS	9012B - Cyanide, Total	GW metals (As/Ba/Cd/Ca/Cr/Cu/Fe/Pb/Mn/Hg/Se/Ag/Na/Zn)	SW metals (As/Ba/Cd/Ca/Cr/Cu/Fe/Pb/Mn/Hg/Se/Ag/Na/Zn)	8260C - with TICS	1,4 Dioxane @ 0.3ug/L - EPA522	Hardness	9012A Cyanide for SW	Total Number of containers	Special Instructions/Note:
				Preservation Code:			S	N	B	D	D	A	A	D			
DUP-1	10/16	—	G	GW			X	X	X	X		X	X				groundwater metals are dissolved-field filtered
PZ-1		11:00		SW			X	X			X	X	X	X	X		surfacewater metals are total
Trip Blank		—		Water								X					

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	10/16		[signature]	10/16 15:40	TA
[signature]	10/16/18 1700	TA	[signature]	10/17/18 0100	TAB

Custody Seals Intact: Δ Yes Δ No

Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 1.4 1.1°C #3

TestAmerica Westfield
501 Southampton Road, Unit C
Westfield, MA 01085
Phone (413) 572-4000 Fax (413) 572-3707

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler:	Lab PM: Steve Hartmann	Carrier Tracking No(s):	COC No:
Client Contact: Loren McGrath	Phone:	E-Mail: steve.hartmann@testamericainc.com		Page: Page 2 of 2
Company: Weston & Sampson Engineers				Job #:

Address: 5 Centennial Drive	Due Date Requested:
City: Peabody	TAT Requested (days): 7 days
State, Zip: MA, 01960	
Phone: 978-532-1900	PO #: Purchase order not required
Email: mcgrathl@wseinc.com	WO #:
Project Name: MA Landfills	Project #: 48006597
Site: Dighton Landfill	SSOW#:

Analysis Requested

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	410.4 - Chemical Oxygen Demand	Alkalinity/Chloride/Nitrate/Sulfate/TDS	9012B - Cyanide, Total	GW metals (As/Ba/Cd/Ca/Cr/Cu/Fe/Pb/Mn/Hg/Se/Ag/Na/Zn)	SW metals (As/Ba/Cd/Ca/Cr/Cu/Fe/Pb/Mn/Hg/Se/Ag/Na/Zn)	8260C - with TICS	1,4 Dioxane @ 0.3ug/L - EPA522	Hardness	9012A Cyanide for SW	Special Instructions/Note:
DUP-1	10/16	—	G	GW	X	X	X	X		X	X			groundwater metals are dissolved-field filtered
PZ-1		11:00		SW	X	X			X	X	X	X	X	surfacewater metals are total
Trip Blank		—		Water						X				

480-143539 Chain of Custody

Nitric to Savannah
+
522-1-4 Dioxane
To Burlington

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

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 10/16	Company	Received by:	Date/Time: 10/16 15:40	Company TA
Relinquished by:	Date/Time: 10/16/18 17:00	Company TA	Received by:	Date/Time: 10/17/18 1036	Company TA Burl
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

TestAmerica Westfield
501 Southampton Road, Unit C
Westfield, MA 01085
Phone (413) 572-4000 Fax (413) 572-3707

Chain of Custody Record

360325-Boston

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler:	Lab PM: Steve Hartmann	Carrier Tracking No(s):	COC No:
Client Contact: Loren McGrath	Phone:	E-Mail: steve.hartmann@testamericainc.com		Page: Page 1 of 2
Company: Weston & Sampson Engineers				Job #:
Address: 5 Centennial Drive	Due Date Requested:			
City: Peabody	TAT Requested (days): 7 days			
State, Zip: MA, 01960				
Phone: 978-532-1900	PO #: Purchase order not required			
Email: mcgrathl@wseinc.com	WO #:			
Project Name: MA Landfills	Project #: 48006597			
Site: Dighton Landfill	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	410.4 - Chemical Oxygen Demand	Alkalinity/Chloride/Nitrate/Sulfate/TDS	9012B - Cyanide, Total	GW metals (As/Ba/Cd/Ca/Cr/Cu/Fe/Pb/Mn/Hg/Se/Ag/Na/Zn)	SW metals (As/Ba/Cd/Ca/Cr/Cu/Fe/Pb/Mn/Hg/Se/Ag/Na/Zn)	8260C - with TICS	1,4 Dioxane @ 0.3ug/L - EPA522	Hardness	9012A Cyanide for SW	Special Instructions/Note:
MW-1	10/16	9:30	G	GW	X	X	X	X		X	X			groundwater metals are dissolved-field filtered
~~MW-2~~				~~GW~~	~~X~~	~~X~~	~~X~~	~~X~~		~~X~~	~~X~~			surfacewater metals are total
MW-3		1515		GW	X	X	X	X		X	X			
MW-5S		1445		GW	X	X	X	X		X	X			
MW-5D		1450		GW	X	X	X	X		X	X			
MW-6S		1315		GW	X	X	X	X		X	X			
MW-6D		1345		GW	X	X	X	X		X	X			
MW-7S		1030		GW	X	X	X	X		X	X			
MW-7D		1045		GW	X	X	X	X		X	X			
MW-8S		1200		GW	X	X	X	X		X	X			
MW-8D		1215		GW	X	X	X	X		X	X			

NITRIC TO SAVANNAH + SUL-1,4-DIOXANE TO BURLINGTON.

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	10/16		[signature]	10/16/18 15:40	TA
[signature]	10/16/18 1750	TA	[signature]	10/17/18 1036	TA Burl

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

TestAmerica Westfield
501 Southampton Road, Unit C
Westfield, MA 01085
Phone (413) 572-4000 Fax (413) 572-3707

Chain of Custody Record

360325-Boston

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler:	Lab PM: Steve Hartmann	Carrier Tracking No(s):	COC No:
Client Contact: Loren McGrath	Phone:	E-Mail: steve.hartmann@testamericainc.com		Page: Page 2 of 2
Company: Weston & Sampson Engineers		**Analysis Requested**		Job #:
Address: 5 Centennial Drive	Due Date Requested:			
City: Peabody	TAT Requested (days): 7 days			
State, Zip: MA, 01960				
Phone: 978-532-1900	PO #: Purchase order not required			
Email: mcgrathl@wseinc.com	WO #:			
Project Name: MA Landfills	Project #: 48006597			
Site: Dighton Landfill	SSOW#:			

Preservation Codes:

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

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD	410.4 - Chemical Oxygen Demand	Alkalinity/Chloride/Nitrate/Sulfate/TDS	9012B - Cyanide, Total	GW metals (As/Ba/Cd/Ca/Cr/Cu/Fe/Pb/Mn/Hg/Se/Ag/Na/Zn)	SW metals (As/Ba/Cd/Ca/Cr/Cu/Fe/Pb/Mn/Hg/Se/Ag/Na/Zn)	8260C - with TICS	1,4 Dioxane @ 0.3ug/L - EPA522	Hardness	9012A Cyanide for SW					Total Number of containers	Special Instructions/Note:
				Preservation Code:	X	X	S	N	B	D	D	A	A	D						X	
DUP-1	10/16	—	G	GW			X	X	X	X		X	X								groundwater metals are dissolved-field filtered
PZ-1		11:00		SW			X	X			X	X	X	X	X						surfacewater metals are total
Trip Blank		—		Water								X									

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	10/16		[signature]	10/16 15:40	TA
[signature]	10/16/18 1700	TA	J. Banda	10-17-18 0940	Sav

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 3.3 (-0) 3.3°c

Login Sample Receipt Checklist

Client: Weston & Sampson Engineers

Job Number: 480-143539-1

Login Number: 143539
List Number: 1
Creator: Kinecki, Kenneth P

List Source: 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	
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	Weston & Sampson
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

ORIGIN ID:BXCA (781) 466-6900
PAUL HOBART
TESTAMERICA
240 BEAR HILL ROAD
SUITE 104
WALTHAM, MA 02451
UNITED STATES US

SHIP DATE: 16OCT18
ACTWGT: 56.60 LB
CAD: 590687/CAFE3211

BILL RECIPIENT

TO SAMPLE RECEIVING
TESTAMERICA BURLINGTON
30 COMMUNITY DRIVE
SUITE 11
SOUTH BURLINGTON VT 05403
(802) 660-1990 REF:
INV:
PO: DEPT:

551C1/8BF8/104C

FedEx
Express
E

J181118060501uv

1 of 3
TRK# 0201 4258 8393 6888
MASTER
WED - 17 OCT 10:30A
PRIORITY OVERNIGHT

NC BTVA
05403
VT-US BTV

ORIGIN ID:BXCA (781) 466-6900
PAUL HOBART
TESTAMERICA
240 BEAR HILL ROAD
SUITE 104
WALTHAM, MA 02451
UNITED STATES US

SHIP DATE: 16OCT18
ACTWGT: 55.10 LB
CAD: 590687/CAFE3211

BILL RECIPIENT

TO SAMPLE RECEIVING
TESTAMERICA BURLINGTON
30 COMMUNITY DRIVE
SUITE 11
SOUTH BURLINGTON VT 05403
(802) 660-1990 REF:
INV:
PO: DEPT:

551C1/8BF8/104C

FedEx
Express
E

J181118060501uv

2 of 3
MPS# 0263 4258 8393 6899
Mstr# 4258 8393 6888 0201
WED - 17 OCT 10:30A
PRIORITY OVERNIGHT

NC BTVA
05403
VT-US BTV

ORIGIN ID:BXCA (781) 466-6900
PAUL HOBART
TESTAMERICA
240 BEAR HILL ROAD
SUITE 104
WALTHAM, MA 02451
UNITED STATES US

SHIP DATE: 16OCT18
ACTWGT: 23.20 LB
CAD: 590687/CAFE3211

BILL RECIPIENT

TO SAMPLE RECEIVING
TESTAMERICA BURLINGTON
30 COMMUNITY DRIVE
SUITE 11
SOUTH BURLINGTON VT 05403
(802) 660-1990 REF:
INV:
PO: DEPT:

FedEx
Express
E

3 of 3
MPS# 0263 4258 8393 6903
Mstr# 4258 8393 6888
0201
WED - 17 OCT 10:30
PRIORITY OVERNIGH

NC BTVA
0540
VT-US BT

TestAmerica Westfield
501 Southampton Road, Unit C
Westfield, MA 01085
Phone (413) 572-4000 Fax (413) 572-3707

Chain of Custody Record

380325-Boston

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler:	Lab PM: Steve Hartmann	Carrier Tracking No(s):	COC No:
Client Contact: Loren McGrath	Phone:	E-Mail: steve.hartmann@testamericainc.com		Page: Page 1 of 2
Company: Weston & Sampson Engineers				Job #:
Address: 5 Centennial Drive	Due Date Requested:			
City: Peabody	TAT Requested (days): 7 days			
State, Zip: MA, 01960				
Phone: 978-532-1900	PO #: Purchase order not required			
Email: mcgrathl@wseinc.com	WO #:			
Project Name: MA Landfills	Project #: 48006597			
Site: Dighton Landfill	SSOW#:			

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

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)		410.4 - Chemical Oxygen Demand	Alkalinity/Chloride/Nitrate/Sulfate/TDS	9012B - Cyanide, Total	GW metals (As/Ba/Cd/Ca/Cr/Cu/Fe/Pb/Mn/Hg/Se/Ag/Na/Zn)	SW metals (As/Ba/Cd/Ca/Cr/Cu/Fe/Pb/Mn/Hg/Se/Ag/Na/Zn)	8260C - with TICS	1,4 Dioxane @ 0.3ug/L - EPA522	Hardness	9012A Cyanide for SW	Total Number of containers	Special Instructions/Note:
				Preservation Code:	X	X	S	N	B	D	D	A	A	D		X	
MW-1	10/16	9:30	G	GW			X	X	X	X		X	X				groundwater metals are dissolved-field filtered
~~MW-2~~				~~GW~~			~~X~~	~~X~~	~~X~~	~~X~~		~~X~~	~~X~~				surfacewater metals are total
MW-3		155		GW			X	X	X	X		X	X				
MW-5S		1445		GW			X	X	X	X		X	X				
MW-5D		1450		GW			X	X	X	X		X	X				
MW-6S		1315		GW			X	X	X	X		X	X				
MW-6D		1345		GW			X	X	X	X		X	X				
MW-7S		1030		GW			X	X	X	X		X	X				
MW-7D		1045		GW			X	X	X	X		X	X				
MW-8S		1200		GW			X	X	X	X		X	X				
MW-8D		1215		GW			X	X	X	X		X	X				

480-143539 Chain of Custody

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

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:	
Relinquished by:	Date/Time: 10/16	Company:	Received by:	Date/Time: 10/16/18 1540	Company: TA
Relinquished by:	Date/Time: 10/16/18 1730	Company: TA	Received by:	Date/Time: 10-17-18 0940	Company: Sew
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 3.3 (CF) 3.3°C

Login Sample Receipt Checklist

Client: Weston & Sampson Engineers

Job Number: 480-143539-1

Login Number: 143539
List Number: 3
Creator: Johnson, Eleanor E

List Source: TestAmerica Burlington
List Creation: 10/17/18 11:42 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	Seal present with no number.
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.7°C 1.2°C 3.1°C
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?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Weston & Sampson Engineers

Job Number: 480-143539-1

Login Number: 143539
List Number: 4
Creator: Johnson, Jeremy N

List Source: TestAmerica Pensacola
List Creation: 10/24/18 02:36 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	Not present
Sample custody seals, if present, are intact.	N/A	
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	0.0°C IR7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Weston & Sampson Engineers

Job Number: 480-143539-1

Login Number: 143539
List Number: 2
Creator: Banda, Christy S

List Source: TestAmerica Savannah
List Creation: 10/17/18 10:53 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	