

# SCS ENGINEERS



## 2017 Annual Monitoring Report Olympic View Sanitary Landfill

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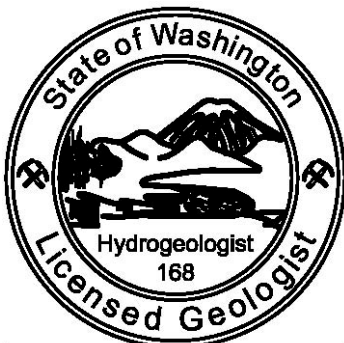
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## 1.0 INTRODUCTION

This report summarizes the results of the 2017 quarterly post-closure environmental monitoring conducted at the Olympic View Sanitary Landfill (OVSL), located in Bremerton, Washington. Monitoring events for the current compliance period were performed during February, May, August and November of 2017. Quarterly environmental monitoring at the OVSL includes sampling and analysis of groundwater and leachate pond leak detection liquid, and monitoring landfill gas (LFG). Leachate influent monitoring is also conducted on an annual basis.

Quarterly groundwater and LFG monitoring was performed at the facility in accordance with the OVSL Environmental Monitoring Plan (EMP, Engineering Management Support, Inc., 2010) and the updated site-specific Sampling and Analysis Plan (SAP, revision 1.1, SCS Engineers, 2017). The plans were developed in consultation with the Washington Department of Ecology (Ecology) and reflect a refined understanding of the site conditions based on the results of a Remedial Investigation/Feasibility Study (RI/FS) per WAC 173-340 (Model Toxics Control Act, MTCA). The OVSL monitoring program is also intended to meet requirements of the Criteria for Municipal Solid Waste Landfills (WAC 173-351-430) which is administered by the Kitsap County Public Health District (KPHD).

In January 2017, Ecology completed a periodic review of the OVSL under the Model Toxics Control Act (MTCA) and reported that the cleanup actions completed at the site remained protective of human health and the environment, and that indicator hazardous substances (IHS) in site groundwater were showing significant downward trends. Based on their review, Ecology agreed to certain reductions in the number and frequency of groundwater wells to be routinely sampled as part of the ongoing post-closure monitoring at the site. These modifications are documented in the 2017 SAP. It should be noted that the LFG and leachate monitoring programs for the facility remained unchanged.

SCS Engineers (SCS) and SCS Field Services (Field Services) performed quarterly environmental monitoring at the OVSL from February through December 2017. The following information summarizes the routine monitoring activities described in this report:

- Quarterly collection and analysis of groundwater samples at select monitoring wells within the monitoring network
- Quarterly measurement of depth-to-water in groundwater monitoring wells sampled for water quality
- Measurement of depth-to-water in water table-only groundwater monitoring wells (during the second and fourth quarter monitoring events)
- Quarterly collection and analysis of a leachate pond/leak detection system sample
- Collection and analysis of a leachate influent sample (during the fourth quarter monitoring event)
- Quarterly measurement of LFG concentrations at perimeter soil gas monitoring probes and building monitoring locations

This report includes:

- A site location description and background section

- A discussion of monitoring activities including a summary of sampling techniques and locations within the groundwater and LFG monitoring network
- Construction details for groundwater monitoring wells
- A discussion of the groundwater conditions including groundwater elevations, flow direction, and flow velocity for the reporting year
- A summary of the monitoring analytical program and presentation of the analytical results and findings for the reporting year
- A summary of the LFG monitoring results for the reporting year
- A geochemical evaluation of water quality samples collected in November 2017
- A statistical trend analysis and concentration time series plots of groundwater monitoring results
- A statistical evaluation and comparison of groundwater results to calculated prediction limits
- A comparison of groundwater monitoring results to site-specific cleanup levels and other applicable criteria
- Field documentation from the 2017 monitoring events
- The fourth quarter 2017 data validation report and associated analytical laboratory reports
- A summary of historical LFG monitoring measurements

Previously issued analytical laboratory data reports for the first three quarters of the 2017 monitoring will not be reissued with this report and can be found in the respective quarterly monitoring reports. Similarly, LFG migration monitoring results for the first three quarters of the 2017 compliance period are reported separately in their respective quarterly monitoring reports.

In order to conserve paper resources, the complete 2017 annual report is presented on an enclosed data CD attached to the rear cover of the document. However, for the convenience of the reviewer, hard copies of select materials are included in this report.

## 2.0 SITE DESCRIPTION

### 2.1 LOCATION

The closed OVSL facility is located on approximately 436 acres in Sections 3 and 10, Township 23N, Range 1W of the Willamette Meridian, in Kitsap County, Washington. The facility is situated on an upland area approximately 10 miles southwest of the city of Bremerton. The facility address is 10015 SW Barney White Road, Bremerton, Washington. A site location map is shown on Figure 1. The closed refuse fill area covers approximately 65 acres of the property. A site plan is presented on Figure 2.

### 2.2 BACKGROUND

The OVSL facility accepted municipal solid waste between 1967 and 2003. Landfill closure was completed in 2004, in accordance with Washington Administrative Code (WAC) 173-351. Closure activities included construction of a LFG monitoring system, an active LFG collection and treatment system, a leachate collection and treatment system, a storm water drainage control system, and a final landfill cover.

The final landfill cover consists of (top to bottom):

- 12-inches of vegetative topsoil and cover soil
- Geotextile fabric
- 12-inch drainage layer
- Geonet composite 60-mil flexible membrane liner
- 6-inch thick, low permeability soil

The active LFG collection system consists of a total of 81 well heads (69 vertical wells, 4 horizontal wells, and 8 interconnections to the leachate collection system) connected to a gas treatment flare station. The leachate collection system consists of subgrade collection piping and a leachate collection lagoon. A storm water drainage system controls storm water erosion and minimizes off-site migration of sediment-laden water (WMW, 2008). Drainage and erosion protection improvements include vegetation, a landfill toe under-drain, down chutes, culverts, and drainage ditches.

### 2.3 TOPOGRAPHY AND CLIMATE

The facility is located in the Southern Upland of the Kitsap Peninsula adjacent to the Union River-Gorst Creek trough. Site topography ranges from approximately 150 to 360 feet above mean sea level (MSL). The land surface generally slopes to the west-southwest towards the Union River, which is situated approximately a half mile west of the site.

Kitsap County's climate is characterized as maritime, with long, mild, wet winters and short, cool, dry summers. Climatically, and due to the local relief, there can be significant variations in total annual precipitation and average temperatures over short distances.

## 2.4 LOCAL AND REGIONAL HYDROGEOLOGY

The regional near-surface geology in the vicinity of the OVSL is dominated by glacio-fluvial and glacio-lacustrine deposits associated with the Vashon glaciation. A Remedial Investigation Report completed for the OVSL (Parametrix, 2007) identified the following main stratigraphic units in the vicinity of the site:

- Organic Soils and Peat (Qw)
- Alluvium (Qal)
- Vashon Recessional Outwash (Qvr)
- Vashon Lacustrine Recessional Outwash (Qvrl)
- Vashon Till (Qvt),
- Vashon Advance Outwash (Qva)
- Vashon Advance Lacustrine Deposits (Qval)
- Pre-Vashon Deposits (Qpvu)

With the exception of the Vashon Till (which has not been confirmed to be present at the site), all of these units appear to be present beneath the OVSL.

Information provided in the site conceptual model indicates that organic soils/peat, alluvium, outwash, glacio-fluvial, glacio-lacustrine, and flood plain deposits outcrop along the west-central portions of the OVSL facility. Groundwater is present beneath the site at elevations ranging between approximately 140 and 260 feet above MSL (depths-to-water ranging between near-surface and approximately 80 feet below ground surface). The groundwater flow direction beneath the landfill is generally toward the west.

## 3.0 2017 MONITORING ACTIVITIES

### 3.1 GROUNDWATER

#### 3.1.1 Groundwater Monitoring Network

Quarterly groundwater monitoring is conducted at the OVSL in accordance with the January 2001 Agreed Order, EMP as modified through subsequent technical discussions with Ecology, and the current site-specific SAP (SCS, 2017, revision 1.1). The monitoring program also meets the post-closure landfill monitoring requirements under WAC 173-351-430.

The groundwater monitoring network at the OVSL includes four categories of monitoring wells that are sampled either quarterly or semi-annually, plus monitoring wells that are only used for water level measurements. The four well categories designated at the site include the following:

- Upgradient (background) monitoring wells are used to assess the quality of groundwater upgradient of the landfill.
- Performance monitoring wells are used to assess groundwater quality at the edge of the waste management unit.
- Compliance monitoring wells are used to assess groundwater quality at the MTCA Point-of-Compliance (POC).
- Downgradient monitoring wells are used to assess groundwater quality leaving the site.

A monitoring well identifier and type summary is provided on the table below. The locations of these groundwater monitoring wells are illustrated on Figure 2.

Water Quality Monitoring Wells at the OVSL by Type			
Upgradient	Performance	Compliance	Downgradient
MW-13A	MW-19C (S)	MW-15R	MW-29A (S)
MW-13B		MW-34A	MW-32
MW-16		MW-34C	MW-33A (S)
MW-35		MW-39	MW-33C (S)
		MW-42	MW-36A (S)
		MW-43	

(S) = semiannual monitoring locations

A indicates a shallower well completion

B indicates an intermediate well completion

C indicates a deeper well completion

Completion depths for the water quality monitoring wells range from approximately 20 to 260 feet below ground surface (bgs). Screen lengths vary from 5 to 20 feet, with a 10-foot average well screen length. Completion depth differences are differentiated using the following letter indicators: “A” is a shallower monitoring well completion, “B” indicates an intermediate well completion, and “C” indicates a deeper monitoring well completion. Construction details for

both the water quality monitoring wells and the water level measurement only wells are summarized on Table 1.

Each of the groundwater monitoring wells designated for routine water quality sampling is outfitted with a dedicated sampling pump (QED Well Wizard) suitable for low-flow purging and sampling. Low-flow sampling with dedicated pumps minimizes pump-introduced artifacts and eliminates cross contamination between wells. The dedicated bladder pumps are positioned with their inlets located within the screened interval of the well. Well construction, development, and pump installation are reported in detail in the *Report of 2005 Gas Probe and Monitoring Well Installations at OVSL* (SCS Engineers 2006), the *Remedial Investigation Report, OVSL, Kitsap County* (Parametrix, 2007) and the *Groundwater Monitoring Well Installation Report, OVSL* (SCS Engineers, 2009).

### 3.1.2 Monitoring Schedule

Groundwater monitoring was conducted on a quarterly basis in 2017, with sampling events completed in February, May, August, and November. Per the current SAP, Performance monitoring well MW-19C and Downgradient monitoring wells MW-29A, MW-33A, MW-33C and MW-36A were sampled on a semiannual basis during May and November 2017.

### 3.1.3 Parameters and Analytical Methods

The analytical program for groundwater quality monitoring during the 2017 reporting period included the following Appendix I and II parameters:

Analytical Program	Parameter
Field Measurements	temperature, specific conductivity, pH, dissolved oxygen, turbidity, and static water level
Geochemical Indicator and General Parameters	chloride, sulfate, nitrate, calcium, sodium, bicarbonate, alkalinity, magnesium, potassium, iron, manganese and total suspended solids
Total Metals*	antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, nickel, selenium, silver, thallium, vanadium, and zinc
Volatile Organic Compounds	as listed in WAC 173-351 Appendix I
Leachate Indicator Parameters	ammonia, total organic carbon (TOC), and total dissolved solids (TDS)

\* Consistent with the 2013 revisions to WAC 173-351, both dissolved and total Appendix I metals data were reported for a minimum period of eight quarters between September 2013 and December 2015. Beginning in 2016, Appendix I metals data have only been reported as a total fraction.

Laboratory methods are derived from several industry-standard publications. Methods for Chemical Analysis of Water and Wastes (MCAWW, EPA 1983) describe methods used for nitrate, nitrite, chloride, sulfate, and ammonia analyses. *Standard Methods for the Examination of Water and Wastewater* (APHA 1999, revised 2014) describe the methods used for analysis of

alkalinity (total and bicarbonate), TDS, total suspended solids (TSS), and TOC. Metals and VOC analyses are described in EPA publication number SW-846, *Test Methods for Evaluating Solid Wastes, Physical and Chemical Methods* (EPA revised 2007). The method for measuring arsenic is described in Method 200.8, *Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma-Mass Spectrometry* (EPA 1994).

All laboratory analyses were completed by TestAmerica in Denver, Colorado and Buffalo, New York, and by Analytical Resources Incorporated in Tukwila, Washington. These laboratories are accredited in accordance with WAC 173-50, Accreditation of Environmental Laboratories.

### **3.1.4 Field Monitoring and Sampling Procedures**

Field activities conducted at the site consisted of surveying well conditions, obtaining field measurements (depth-to-water, pH, specific conductivity, turbidity, temperature, and dissolved oxygen), collecting groundwater samples for laboratory analysis, and packaging and shipping the samples to the relevant laboratories. These activities are conducted as described in the 2017 site-specific SAP (revision 1.1).

As part of the routine groundwater monitoring program, static water levels were initially measured and recorded in the water quality wells being sampled that quarter prior to initializing any well purging or groundwater collection procedures. As part of the second (May) and fourth (November) quarter events, static water levels were measured at all 16 water quality monitoring wells, and from the 14 additional site wells that are only used for the semi-annual determination of the potentiometric groundwater surface. Depth-to-water measurements (measured to the nearest 0.01 ft.) were obtained using an electronic water level indicator. Static water level measurements were recorded and documented on field sampling and measurement forms included in Appendix A (for November 2017).

Prior to sample collection, groundwater monitoring wells were purged in order to ensure representative groundwater conditions at each location. Both purging and sampling of the monitoring wells were conducted using low-flow/low-volume well sampling techniques. Once the pumping was initiated, flow rates were confirmed by volumetric discharge measurements (by measuring the total volume discharged per cycle using a graduated cylinder and verifying the number of pump cycles per minute specified by the controller). Field measurements for pH, temperature, specific conductivity, dissolved oxygen, and turbidity were conducted using a closed, in-line flow-through cell and a portable turbidity meter. When water quality parameters stabilized and there had been no change in the pumping water level, sample collection would begin. Field parameters were measured as described in *Standard Methods for the Examination of Water and Wastewater* (APAH 2014).

Before initiating the purge process, the multiparameter field meters were calibrated in accordance with manufacturer's guidelines. Field data obtained during the well purging procedure was recorded on field sampling and measurement forms included in Appendix A (for November 2017).

Non-disposable sampling equipment that was exposed to well water (e.g., electronic water level tape) was decontaminated between wells as outlined in the SAP. Decontamination of equipment

was completed before leaving each well, thereby minimizing potential cross contamination. Disposable sampling equipment and disposable personal protective equipment (PPE) were removed and disposed of after each use and prior to leaving each well.

## 3.2 LEACHATE

Leachate generated from three separate closed municipal waste storage cells is collected and pumped to an arterial force main that discharges to a one-acre leachate pond situated near the western end of the landfill (refer to Figure 2). The force main outfall is located on the north end of the leachate lagoon. Accumulated leachate is treated by aeration. When the leachate elevation in the pond approaches the elevation of the former pond outlet, leachate is removed via pumping and is hauled to nearby wastewater treatment plants.

### 3.2.1 Leachate Monitoring Locations

Per the EMP and SAP, leachate monitoring is performed at three locations at the facility. Influent leachate sampling station L-INF is situated immediately downstream of the force main outfall on the north end of the leachate collection pond. The OBWL-TD sampling station is located at the Old Barney White Landfill Toe Drain collection sump, which subsequently connects to the leachate pond. Sampling station LP-LCD is located at the pump discharge outlet which periodically returns any accumulated liquids that collect beneath the leachate pond liner system back into the main lagoon.

The locations of the leachate monitoring stations are illustrated on Figure 2.

### 3.2.2 Monitoring Schedule

The current SAP provides for annual monitoring of the L-INF and OBWL-TD stations and quarterly monitoring of the LP-LCD station. Leachate samples were collected from L-INF and OBWL-TD during the fourth quarter of 2017. The LP-LCD was sampled quarterly throughout 2017.

### 3.2.3 Parameters and Analytical Methods

A summary of the analyzed parameters for the leachate samples collected at the OVSL is presented in the table below.

Quarterly LP-LCD Analytical Program	Parameter
Field Measurements	temperature, specific conductivity, pH, dissolved oxygen, and turbidity
Geochemical Indicator Parameters	chloride, sulfate, nitrate/nitrite, calcium, sodium, bicarbonate, alkalinity, magnesium, potassium, iron, and manganese
Leachate Indicator Parameters	ammonia, TOC, and TDS



Annual L-INF and OBWL-TD Analytical Program	Parameter
Field Measurements	temperature, specific conductivity, pH, dissolved oxygen, and turbidity
Geochemical Indicator Parameters	chloride, sulfate, nitrate/nitrite, calcium, sodium, bicarbonate, alkalinity, magnesium, potassium, iron, and manganese
Total Metals	antimony, barium, beryllium, cadmium, chromium, cobalt, copper, lead, nickel, selenium, silver, thallium, vanadium, and zinc
Volatile Organic Compounds	as listed in WAC 173-351 Appendix I
Leachate Indicator Parameters	ammonia, total organic carbon (TOC), and total dissolved solids (TDS)

Laboratory methods are the same methods used for groundwater samples. All laboratory analyses for the leachate samples were completed by TestAmerica labs in Denver, Colorado and Buffalo, New York.

### 3.2.4 Leachate Monitoring Field Procedures

Field activities consisted of obtaining field parameter measurements, collecting leachate samples for laboratory analysis, and packaging and shipping the sample to the laboratory. The L-INF and OBWL-TD samples consisted of individual grab samples that were collected directly from their respective sampling stations using a peristaltic pump. New disposable plastic tubing was used during the collection of each sample, and was subsequently discarded between sampling locations. The LP-LCD sample was obtained from an inline sampling port attached to the liquid return line that drains back into the leachate pond. All the leachate samples were collected directly into pre-labeled laboratory containers suitable for the chemical parameters being analyzed. Field instruments were calibrated in accordance with manufacturer's guidelines.

Field-measured parameters including temperature, specific conductivity, pH, and dissolved oxygen were measured as described in *Standard Methods for the Examination of Water and Wastewater* (APAH 2014). Field information obtained during leachate sampling was recorded on Field Information Forms included in Appendix A (for November 2017).

## 3.3 LANDFILL GAS

Landfill gas monitoring activities at the OVSL consist of obtaining field measurements of primary gas composition (methane, carbon dioxide, and oxygen) at 10 subsurface soil gas detection probes (several with multiple screened intervals) and six locations inside four onsite structures on or immediately adjacent to the landfill.

LFG monitoring is conducted to provide an assessment of the subsurface soil gas conditions at the OVSL and monitor compliance with regulatory criteria for subsurface methane concentrations. At the subsurface gas detection probes (LFG probes) relative soil gas pressure was also measured in the field. LFG monitoring procedures are detailed in the 2017 SAP.

### **3.3.1 Landfill Gas Monitoring Network**

Monitoring was conducted at 10 perimeter LFG probes (GP-7 through GP-16) and four onsite structures (Scale House, South Slope Well House, Electrical Shed and Office) as illustrated on Figure 3. Five of the LFG probes (GP-9 through GP-13) consist of multiple, vertically-discrete, monitoring zones. Probes with dual monitoring zones are designated with an “S” for the shallow zone, and a “D” for the deep zone. Probes with three monitoring zones are designated with an “S” for the shallow zone, “M” for the middle zone, and “D” for the deep zone. Data are not reported for probes where the screened interval is found to be submerged by groundwater. Details of all the LFG probes and boring logs can be found in *Report of 2005 Gas Probe and Monitoring Well Installations at OVSL* (SCS Engineers 2006).

### **3.3.2 Monitoring Schedule**

Monitoring at the LFG probes and facility structures was conducted during March, May, August, and November 2017. LFG monitoring results are reported in Section 4.

### **3.3.3 Monitored Parameters**

Field measurements of methane, carbon dioxide, and oxygen were obtained from each of the LFG probes and within the facility structures. In addition, subsurface soil gas pressure and groundwater levels were measured in the probes during each of the LFG monitoring events.

### **3.3.4 Landfill Gas Monitoring Field Procedures and Instrumentation**

Field monitoring was conducted in accordance with the 2017 SAP. The LFG probes and building locations were monitored in the field (for all parameters) using a GEM-2000 portable multi-gas analyzer. This portable gas analyzer measures methane and carbon dioxide with a dual wavelength infrared cell with a reference channel. Oxygen is measured with an electro-chemical cell. Pressure was measured with a transducer.

The gas analyzer was calibrated prior to each monitoring event. LFG monitoring activities are documented in the Field and Calibration Logs included in Appendix A.

### **3.3.5 Field Conditions**

General weather conditions were noted during and preceding each quarterly LFG monitoring event. Atmospheric pressure fluctuations can influence gas concentrations and pressure in LFG probes. To assist in interpreting the monitoring data, barometric conditions were recorded during and prior to monitoring. The barometric trends for November 2017 are included in this report.

## 4.0 2017 MONITORING RESULTS

### 4.1 GROUNDWATER

#### 4.1.1 Groundwater Elevation and Flow

All of the monitoring wells in the current compliance program were accessible for the collection of water table elevation information during 2017. Recorded depth-to-water levels are summarized in field documentation included in Appendix A.

Depth-to-water measurements collected through 2017 were used to calculate groundwater elevations in feet relative to MSL. The 2017 records have been compiled and are presented on Table 3. Groundwater elevation surface maps (derived from static depth-to-water measurements collected at the OVSL monitoring wells) for the second (April) and fourth quarter (November) 2017 are presented in Figures 4A and 4B. A hydrograph showing the past 10 years of recorded groundwater elevations is presented on Figure 5. Groundwater elevations at the OVSL ranged from 142.69 (MW-33A in May) to 244.85 (MW-13A in February) ft. MSL over the 2017 reporting period. Groundwater elevations remained relatively stable throughout the year. The potentiometric groundwater elevation surface across the OVSL does not show significant seasonal fluctuations. These results remain consistent with data reported during previous compliance years.

The groundwater flow direction during the reporting period was consistent with that previously reported at the site. Locally, the groundwater flow direction is to the west/northwest. The average hydraulic gradient across the site remained fairly consistent between the wet and dry seasons.

Calculated 2017 Hydraulic Gradient and Flow Velocities – East Side		
	Q2	Q4
Well Pair	MW-35/MW-24	
Hydraulic Gradient (ft./ft.)	0.0310	0.0332
Flow Velocity (ft./day)	2.69	2.88
Calculated 2017 Hydraulic Gradient and Flow Velocities – West Side		
	Q2	Q4
Well Pair	MW-20/MW-33A	
Hydraulic Gradient (ft./ft.)	0.0146	0.0131
Flow Velocity (ft./day)	7.49	6.72

Eastern Hydraulic Conductivity = 26 ft/day (Parametrix 2007)  
 Western Hydraulic Conductivity = 154 ft/day (Parametrix 2007)  
 Porosity = 30% (Parametrix 2007)

## **4.1.2 Groundwater Quality**

### **4.1.2.1 Chemical Analysis**

Water quality data for the OVSL are summarized in Tables 4A through 4D. These tables present the data results, segregated by well type, for detected analytes and measured field parameters from all four quarters of 2017. Each table presents the data for a monitoring well category (Compliance, Performance, Downgradient, and Upgradient). A table (4E) summarizing the detected analytes and field parameters for the annual L-INF and OBWL-TD leachate and the quarterly LP-LCD leak detection monitoring stations is also provided. In addition, a summary table of VOC detections in groundwater and leachate is presented as Table 5.

### **4.1.2.2 Data QA/QC**

Analytical data from the TestAmerica and ARI laboratories were subjected to a quality assurance/quality control (QA/QC) review. The review included field and in-house components. The field portion consisted of the collection and analysis of trip blanks, field replicates, and matrix spike/matrix spike duplicates. The in-house evaluation provided a detailed examination of laboratory data which included sample handling, analysis hold times, and laboratory performance analyses (duplicates, blanks, matrix spikes, matrix spike duplicates and surrogate recoveries).

An express shipment delay for fourth quarter samples MW-43 and MW-19C resulted in nitrite analyses slightly outside the recommended holding time. The laboratory calculated nitrite results for these samples using a total nitrogen (nitrate + nitrite) analysis, which provided an extended 28-day holding time for validated results. These results were H-flagged by the laboratory, and are assigned with this data qualifier. Also, a fourth quarter trip blank reported EPA method 8260 detections of n-butyl alcohol and chloromethane, but at levels below project reporting limits. These anomalies are discussed in the laboratory data report.

Notwithstanding the above reported laboratory data qualifiers, the 2017 data set was determined to be acceptable for the intended purposes. Appendix B contains the data validation report and the analytical laboratory data reports for the November 2017 monitoring event.

## **4.1.3 Spatial Distribution and Temporal Trends**

### **4.1.3.1 Parameter Distribution**

As noted in prior monitoring reports, the influence of past waste disposal activities on groundwater quality at the OVSL is observed in the groundwater VOC detections, general chemistry, inorganics, and field parameter results. The elevated concentrations of parameters adjacent to the landfill are typically characteristic of influence from either landfill leaching, transport from LFG, or increased mobilization of naturally occurring constituents as a result of the landfill's presence.

Several key parameters (arsenic, iron, manganese, and vinyl chloride) are routinely monitored for their spatial distribution each quarter by plotting concentrations on the landfill base map.

Spatial distributions for these parameters during the fourth quarter November 2017 monitoring event are presented in Figures 6A through 6D and summarized in the tables below.

Total Arsenic (mg/L) - November 2017 (Figure 6A)				
Concentration	Upgradient	Performance	Compliance	Downgradient
Low	0.000107	0.00294	0.00000466	0.000563
Locations	MW-35		MW-43	MW-36A
High	0.000364	MW-19C	0.01330	0.00974
Locations	MW-16		MW-34C	MW-32

Total Iron (mg/L) – November 2017 (Figure 6B)				
Concentration	Upgradient	Performance	Compliance	Downgradient
Low	<0.06	0.22 MW-19C	<0.06	0.083
Locations	MW-13A, MW-13B, MW-16 MW-35		MW-15R, MW-34A	MW-33C
High	NA		36	4.0
Location		MW-39	MW-29A	

Total Manganese (mg/L) – November 2017 (Figure 6C)				
Concentration	Upgradient	Performance	Compliance	Downgradient
Low	<0.001	1.2 MW-19C	0.0012	0.0028
Locations	MW-13A, MW-13B, MW-35		MW-34A	MW-36A
High	0.0011		4.4	1.9
Locations	MW-16	MW-42	MW-32	

Vinyl Chloride (µg/L) – November 2017 (Figure 6D)				
Concentration	Upgradient	Performance	Compliance	Downgradient
Low	<0.02	<0.02 MW-19C	<0.02	<0.02
Locations	MW-13A, MW-13B, MW-16, MW-35		MW-15R, MW-34A, MW-39, MW-43	MW-29A, MW-33A, MW-33C, MW-36A
High	NA		0.033	0.37
Locations		MW-34C	MW-32	

NA: Not applicable.

Similar to previous reporting years, groundwater impacts are observed in each category of monitoring wells at the site.

The highest concentrations of arsenic and total manganese (0.000364 and 0.0011 mg/L, respectively) that were detected in Upgradient (background) monitoring wells during the fourth quarter monitoring event occurred in MW-16. Total iron was not reported in any of the Upgradient wells during the fourth quarter. Vinyl chloride was not reported in any of the Upgradient wells throughout 2017.

Detectable concentrations of arsenic, iron and manganese (0.00294, 0.22 and 1.2 mg/L, respectively) were reported during the fourth quarter in Performance monitoring well MW-19C. Vinyl chloride was not reported in this well during 2017.

The highest fourth quarter concentrations of primary parameters in the Compliance monitoring wells were reported in MW-34C (0.01330 arsenic and 0.033 µg/L vinyl chloride), MW-39 (36 mg/L iron) and MW-42 (4.4 mg/L manganese). These same parameters were highest in the Downgradient monitoring wells at MW-32 (0.00974 mg/L arsenic, 1.9 mg/L manganese and 0.37 µg/L vinyl chloride) and MW-29A (4.0 mg/L iron).

#### **4.1.3.2 Temporal Trends**

Time series graphs and statistical trend analyses were completed for all Upgradient, Performance, Compliance, and Downgradient monitoring wells using the DUMPStat software package. The statistical data set includes analytical results obtained between 2005 through the present reporting year (2017). This evaluation was conducted for parameters listed in Appendices I and II of WAC 173-351-990 which are organized into two groups: “Trend Test A” and “Trend Test B”. The “Trend Test A” time series includes all organic parameters in Appendices I and II that have been detected above the practical quantification limit (PQL) during at least one sampling event in any of the wells since 2005 (currently 25 VOCs). The “Trend Test B” time series includes Appendix I and II inorganic and groundwater quality parameters (currently 32 parameters). To facilitate review of the statistically significant trends, time series sets were developed to show those well/parameter combinations exhibiting either increasing or decreasing trends. These time series graphs are presented in Appendix C along with the other statistical evaluation results. A summary of those parameters showing significant increasing or decreasing concentration trends grouped by well type is provided on Table 6A, and a more detailed summary of parameter trends in specific wells can be found in Table 6B.

The dominant data trend seen for the majority of parameters throughout the OVSL continues to be that of generally decreasing concentrations. This is predominantly observed in the Compliance and Downgradient monitoring wells. However, significant decreases are noted in all well groups for as many as 14 inorganic parameters and two VOCs (Tables 6A/6B). Significant increasing trends are also noted for certain inorganic parameters in several of the Upgradient, Compliance and Downgradient wells, although the overall number of parameters increasing remains low.

Significant parameters trends calculated for the Compliance monitoring wells are summarized in the following table.

Significant Trends in Compliance Wells (2005 - 2017)			
Increasing		Decreasing	
Parameter	Wells	Parameter	Wells
Chloride	MW-39	Alkalinity, Total	MW-15R, MW-34A, MW-34C
pH	MW-34C, MW-42	Ammonia	MW-43
Potassium, Dissolved	MW-42	Bicarbonate Alkalinity	MW-15R, MW-34A, MW-34C
Temperature	MW-15R, MW-34A, MW-34C	Calcium	MW-15R, MW-34A, MW-34C, MW-43
		Chloride	MW-15R, MW-34A, MW-34C
		Magnesium	MW-15R, MW-34A, MW-34C, MW-42
		Sodium	MW-15R, MW-34A, MW-34C, MW-43
		Specific Conductivity	MW-15R, MW-34A, MW-34C
		Sulfate	MW-42, MW-43
		Total Dissolved Solids	MW-15R, MW-34C, MW-34A
		Vinyl Chloride	MW-34C

#### 4.1.4 Groundwater Geochemistry

The geochemical character of the groundwater, LP-LCD, OBWL-TD and L-INF samples was evaluated by plotting and comparing geochemical parameters using a Piper diagram for the November 2017 analytical results. Water quality samples collected during November 2017 were of similar geochemical water type with clear differences seen between the groundwater and leachate derived samples. As noted for past reporting years, the positions of sampled wells on the diagram indicate that the dominant anion in site groundwater remains bicarbonate, with cations being dominated by calcium and magnesium. The leachate derived samples continue to report significantly higher sodium, calcium and potassium concentrations than groundwater, as well as higher chloride and bicarbonate levels. The November 2017 OBWL-TD sample also reported relatively elevated sulfate with respect to the other leachate samples. The Piper diagram for November 2017 can be found in Appendix D. Previous Piper diagrams for the first, second, and third quarters of the current compliance year can be found in their corresponding quarterly monitoring reports.

In addition to the Piper diagram, groundwater cation/anion balance calculations were also used to assess geochemical character. Ideally, after the major anions and cations present in a sample are determined, the sum of the positive cations (in milliequivalents per liter [meq/L]) should approximately equal the sum of the negative anions (Hem 1986). All natural waters should be electroneutral. However, differences can arise between dissolved cations and anions in groundwater as measured by an analytical laboratory due to a number of factors including: presence of colloidal fractions, systematic error in preparation and analysis of samples,



malfunction of/poorly calibrated equipment, major species omitted from analysis, the presence of unusually high concentrations of cations/anions, and not all ions present in water are included in the balance calculation. Due to these potential issues, differences in the ion balance can be difficult to assess for imbalances due to groundwater impacts.

The range of the sum of ions and balance of ions observed at the site for the November 2017 monitoring event are summarized in the table below. Positive values indicate that the sum of the cations is greater than the sum of the anions. As stated in WAC 173-351-430-5(a), a relative percent difference (RPD) in the charge-balance (ion balance) of greater than five to ten percent (depending on the concentrations of ions in solution) could potentially indicate impacted groundwater conditions.

Well Group	Upgradient	Performance	Compliance	Downgradient
Sum of Ions (meq/L)	1.04 – 1.71	1.66	0.38 – 5.01	0.75 – 2.71
Balance (%)	-1.17 – 1.94	-0.24	-13.3 – 8.6	-2.6 – 1.6

Ion balances observed at the site during the November 2017 event were generally within or very close to this threshold. One well (MW-39) reported balances outside this range (-13.3 percent). It's suspected that results outside the (+/-) 5 to 10% ion balance threshold are due to possible errors associated with analytical limitations in these measurements (as previously discussed) or potential low level impacts from human activities at the site.

#### 4.1.5 Statistical Prediction Limit Evaluation

Statistical prediction limits using data from the upgradient monitoring wells are calculated at the end of each monitoring year to provide updated background concentrations for all Appendix I and II inorganic detection monitoring and groundwater quality parameters (a total of 32 parameters). These updated background prediction limit concentrations are used for comparison purposes for compliance and downgradient monitoring wells.

For the fourth quarter of 2017, prediction limits for inorganic parameters were exceeded at least once in all the Compliance (MW-15R, MW-34A, MW-34C, MW-39, MW-42 and MW-43) and Downgradient (MW-29A, MW-32, MW-33A, MW-33C and MW-36A) groundwater monitoring wells. Compliance wells MW-34C, MW-39 and MW-42 reported the largest number of these exceedances (11, 11 and 16 exceedances, respectively). Downgradient well MW-32 also reported 11 exceedances during the fourth quarter. A summary of the latest prediction limit exceedances for the November 2017 Compliance and Downgradient well results are presented on Table 7. Prediction limit calculations for 2017 are presented in Appendix C.

As summarized on Tables 6A and 6B, the following Upgradient monitoring wells exhibited statistically significant increasing or decreasing trends over the period for which background prediction limits are calculated: MW-13A (sulfate), MW-13B (bicarbonate/total alkalinity, chloride and sulfate), MW-16 (bicarbonate/total alkalinity, calcium, chloride and magnesium) and MW-35 (bicarbonate/total alkalinity, chloride, nitrate and temperature). Parameter trends in Upgradient monitoring wells are noted because they can impart a bias on the calculated prediction limit for the affected monitoring parameters which, in turn, can affect the number of exceedances identified for those monitoring parameters in Compliance and Downgradient wells.



For bicarbonate/total alkalinity, nitrate and temperature, their apparent increasing trends in the above-mentioned upgradient wells could impart a positive bias on the calculated prediction limits for these parameters. However, visual examination of the time series graphs presented in Appendix C indicates that the increasing trends noted for these parameters remains relatively slight. Therefore, any bias to the prediction limit would be expected to be nominal and not significantly change the number of exceedances within this parameter subset.

#### 4.1.6 Point of Compliance and Cleanup Level Exceedances

##### 4.1.6.1 Point of Compliance (POC)

The solid waste regulations (WAC 173-351-300[6]), specify that groundwater quality compliance must be established at a POC located on the landfill property no more than one hundred fifty meters (four hundred ninety two feet) from the waste management unit boundary. At the OVSL, the POC is established as a line of wells located within 150 meters of the landfill waste management unit boundary. As illustrated on Figure 2, the Compliance monitoring wells are colored red and lie west/northwest of the downslope boundary of the landfill.

##### 4.1.6.2 Cleanup Level Exceedances

###### Site-Specific MTCA Cleanup Levels

Ten organic and inorganic parameters are regulated under the OVSL Cleanup Action Plan (CAP, Ecology 2010) and have site-specific MTCA cleanup levels. Analytical results are used to calculate an upper confidence limit (95% UCL) of the mean concentration for each parameter for each well for Compliance and Downgradient monitoring wells to assess compliance with their respective cleanup level.

The UCLs are calculated using a three-year moving data window for the ten site-specific chemicals of concern (COC). The UCLs are calculated using MTCASat; calculation details are presented in Appendix C. The following in-text table and Table 8 summarize the COCs and their 2017 exceedances in the Compliance and Downgradient monitoring wells.

Chemicals of Concern	Units	Site-specific MTCA Cleanup Level	Exceedances in 2017 (95% UCL)
1,1-Dichloroethane	µg/L	50	No
1,4-Dichlorobenzene	µg/L	2	No
Ammonia	mg/L	0.19	Yes
Arsenic	mg/L	0.000462	Yes
Cis-1,2-Dichloroethene	µg/L	35	No
Ethyl ether	µg/L	50	No
Iron	mg/L	0.3	Yes
Manganese	mg/L	0.05	Yes
Trichloroethene	µg/L	1	No
Vinyl Chloride	µg/L	0.2	Yes

Blue indicates this COC reported a 95% UCL exceedance of its site-specific MTCA Cleanup Levels in at least one Compliance or Downgradient well during 2017.

Stable to improving groundwater quality at the OVSL continued to be noted over the 2017 compliance period. As noted during past reporting years, the 95% UCL for vinyl chloride

remained below the cleanup level in all Compliance wells and all Downgradient wells except MW-32. It is important to note that minor variations in parameter concentrations observed from year to year can cause exceedances to arise or vanish between reporting periods. This is largely a result of the UCLs hovering very near their site cleanup levels and not an indication of meaningful changes to overall groundwater conditions.

Statistically significant COC trends are also noted on Table 8 in order to provide additional information regarding the status of the UCL relative to the cleanup standard. Trend information may be particularly useful if the calculated UCL value is very close to the cleanup standard (e.g., within 10%). In such cases, trend information may be useful in predicting a change in status of the UCL versus the cleanup level in the relative near term.

Exceedances of the site-specific MTCA cleanup levels were reported in four of the six Compliance well locations (refer to Table 8): MW-34C (arsenic, iron, manganese); MW-39 (ammonia, arsenic, iron, and manganese); MW-42 (ammonia, arsenic, iron, manganese); and MW-43 (iron and manganese). Similar to recent years, a significant decreasing trend was reported in 2017 for vinyl chloride in MW-34C and ammonia in MW-43. The 95% UCLs for the VOC COCs remained below the site-specific MTCA cleanup levels in all of the Compliance monitoring wells during 2017.

Exceedances of the site-specific MTCA cleanup levels continue to be reported in all five Downgradient well locations (refer to Table 8): MW-29A (arsenic, iron, and manganese); MW-32 (arsenic, iron, manganese, and vinyl chloride); MW-33A (ammonia, arsenic, iron, and manganese); MW-33C (arsenic and manganese); and MW-36A (arsenic). However, significant decreasing trends were reported at MW-29A (for ammonia) and MW-32 (for iron, manganese and vinyl chloride). With the sole exception of vinyl chloride in MW-32, all of the 95% UCLs for the select VOCs remained below the site-specific MTCA cleanup levels in all of the Downgradient monitoring wells.

#### **Other Criteria Comparison (Federal MCLs, WAC 173-200, and MTCA)**

In addition to the site-specific MTCA cleanup levels, groundwater at the OVSL is also compared to WAC 173-200 Groundwater Quality Protection Standards and State/Federal Primary and Secondary Maximum Contaminant Levels (MCLs). For comparison purposes, site-specific MTCA cleanup levels are also included.

The WAC 173-200 and MCL exceedances for the 2017 reporting period by parameter and well are summarized on Table 9. Criteria for the following seven analytes were exceeded:

- pH
- ammonia
- arsenic
- iron
- manganese
- trichloroethene
- vinyl chloride

These same parameters were noted to have exceeded their respective regulatory standards during the previous three (2014 through 2016) compliance years.

## 4.2 LEACHATE MONITORING RESULTS

### 4.2.1 Leachate Quality

The results of the fourth quarter 2017 leachate influent (L-INF) and Old Barney White Landfill Toe Drain (OBWL-TD) sample analyses are presented on Table 4E. Samples were also obtained from the LP-LCD monitoring station and submitted for selected Appendix II parameter and total metals analysis during all four quarters of 2017 (refer to Table 4E).

The 2017 L-INF sample continued to report relatively elevated concentrations of the typical leachate parameters, including total/bicarbonate alkalinity, ammonia, calcium, chloride, magnesium, sulfate, sodium, COD, TDS and TOC. In addition, low levels of three VOCs (tert-butyl alcohol, tetrahydrofuran and vinyl chloride) were detected in the November 2017 sample. The OBWL-TD sample reported generally lower leachate indicator results than the leachate influent, but slightly higher metals data. Low levels of five VOCs (2-butanone, acetone, tert-butyl alcohol, tetrahydrofuran and vinyl chloride) were detected in the OBWL-TD sample.

Compared to the L-INF sample, the 2017 quarterly LP-LCD samples generally reported lower alkalinity, ammonia, COD and TOC concentrations.

### 4.2.2 Leachate Generation Rates

Leachate volumes generated at the OVSL have been recorded on a weekly basis by SCS Engineers Field Services since 2008. During the course of the 2017 reporting period, approximately 1,073,254 gallons of leachate were pumped into the leachate collection pond. A total of 58.01 inches of rainfall was recorded at the nearby Bremerton National Airport weather station during 2017.

Over the past five years, leachate production at the OVSL has significantly declined. Prior to 2013, the facility typically produced over 2 million gallons annually. Between 2013 and 2016, annual leachate generation ranged from 1,106,803 gallons (in 2014) to 681,901 gallons (in 2016). The leachate volume calculated for 2017 remained in this reduced range, and continues to indicate that ongoing improvements to site maintenance and existing infrastructure are reducing leachate generation rates at the OVSL. Annualized rainfall totals at the OVSL and the volumes of leachate produced on a quarterly and annual basis over the last ten years are presented on Figure 7.

In addition, the liner leak collection/detection system is checked regularly for the presence of any accumulated liquids beneath the OVSL leachate pond. If liquids are present, they are pumped out of the collection system, pass through the LP-LCD monitoring station, and are returned to the leachate pond. The volumes of liquid pumped out of the liner leakage collection system during 2017 are presented on Table 10. Approximately 1,730 gallons of liquid were removed from the collection system during 2017. This is a slightly greater LP-LCD volume than was pumped

during 2016 (1,687 gallons), but a significantly lower volume than reported for the two previous reporting years (2,230 and 2,975 gallons in 2014 and 2015, respectively).

### 4.3 LANDFILL GAS MONITORING RESULTS

LFG monitoring results for the OVSL are discussed in terms of detected methane and/or carbon dioxide (at concentrations of both gases at levels greater than 0.3 percent by volume) and depressed oxygen (less than 20.3 percent by volume). The detection of these gases, as well as elevated gas pressures within the perimeter probes, are indicative of the potential presence of LFG. The reported values represent measurements under stabilized conditions (after purging at least one probe volume from each sampling zone). The screened interval in Middle- and Deep-monitoring zones is sometimes submerged by the shallow groundwater table. When this occurs, gas results are not representative of the screened interval, and therefore not reported.

Perimeter LFG probes and surface structure locations were monitored quarterly for the presence of LFG. The November 2017 results are summarized in Table 11. A summary of the LFG probe results over the entire 2017 compliance period is also provided on Table 12.

#### 4.3.1 Perimeter Gas Probe

For the November 2017 monitoring event, methane was not detected above its 5% by volume lower explosive limit (LEL) regulatory standard in any of the LFG perimeter monitoring probes. Probe GP-15 was the only perimeter probe location that reported detectable methane (0.5 percent by volume) during the quarter. Carbon dioxide was measured in all the LFG probes with screens exposed to the vadose zone at concentrations ranging from 0.7 (GP-10D) to 6.5 percent by volume (GP-14).

Depressed oxygen levels (less than 20.3 percent by volume) were reported at the majority of LFG probes, ranging from 0.1 (GP-15) to 20.2 percent by volume (GP-10S). One LFG probe (GP-13D) reported oxygen levels that were not depressed (21.2 percent by volume).

Representative relative (static) pressure readings in the perimeter gas probes ranged from -0.10 (GP-16) to 0.06 (GP-8) inches of water column.

As noted in previous reporting years, the observed declines in methane and carbon dioxide levels in the gas monitoring probes (as well as the increases in oxygen levels) likely reflect changes in the LFG extraction system components (e.g., replacement of gas flares and blower station and the installation of six new LFG wells during October 2011 in the Barney White area) and more recent changes to LFG extraction system operations implemented by Waste Management. Appendix E includes tables and time-series plots of the historical concentrations of methane, carbon dioxide, and oxygen in the currently monitored gas probes, from March 2008 through the end of the 2017 monitoring year.

Groundwater seepage during the rainy season can submerge the perforated portion of the LFG probe casing and inhibit collection of soil gas in the vadose zone. To determine whether the perforated portion of the gas probes were blocked by water, water level measurements are taken at each LFG probe location. The percentage of exposed perforated casing for each LFG probe is shown on Table 11.

### **4.3.2 Structure Monitoring**

The fourth quarter 2017 monitoring results did not detect methane in any of the four monitored structures (Scale House, South Slope Well House, Electrical Shed and Office). The regulatory standard for methane in structures on or near the landfill is 25% of the LEL. Carbon dioxide was also not detected in any of these structures. Oxygen levels reported in these structures were all ambient, ranging between 20.9 and 21.0 percent by volume.

### **4.3.3 Barometric Pressure Conditions**

Gas concentrations and pressures are influenced by fluctuating barometric pressure. Relative to time, the highest LFG concentrations and depressed oxygen concentrations tend to occur shortly after a significantly falling barometric trend. This is due to the effects of the landfill pressures trying to stabilize with the fluctuation in atmospheric (barometric) pressure and the associated lag time for stabilization.

To assist in interpreting data, barometric conditions were recorded prior to and during LFG monitoring. The trends for November 2017 are presented on Figure 8. On November 22, LFG monitoring was conducted over a period of generally stable barometric pressure conditions.

## 5.0 SUMMARY AND CONCLUSIONS

The groundwater quality results, LFG concentrations and leachate production levels reported at the OVSL over the 2017 monitoring year remain consistent with the on-going stabilization of the closed landfill and an overall improvement of environmental site conditions. Groundwater quality data collected over the past decade indicate that historically detected contaminants in groundwater are generally declining, with fewer exceedances of site-specific MTCA cleanup levels reported at POC monitoring wells and downgradient of the site. Although the 2017 leachate generation volumes were somewhat higher than those reported during the previous two years, they remained significantly lower than pre-2015 levels, demonstrating the effectiveness of the improved engineering controls being implemented at the facility. The OVSL will continue to explore opportunities to minimize any remaining above ground contribution to leachate volumes to ensure that the long-term trend of diminishing leachate generation is maintained.

LFG production at the facility continues to gradually decline, with flow rates decreasing to several orders of magnitude below their modeled production high as the natural depletion of methane and other landfill gases continues at the site. It is anticipated that on-going operations and maintenance (O&M) efforts at the OVSL will continue to show improving environmental conditions and increased landfill stability.

### 5.1 GROUNDWATER

#### 5.1.1 Groundwater Quality

Certain VOCs, general chemistry parameters, inorganic analytes, and field parameters continued to be reported at elevated concentrations in the monitoring wells adjacent to the OVSL. During 2017, site specific MTCA cleanup levels, groundwater protection standards and/or federal MCLs were exceeded for seven analytes: pH, total arsenic, total iron, total manganese, ammonia, trichloroethene, and vinyl chloride. These results remain generally consistent with those reported for the past several years, with overall trends showing that the majority of analyte concentrations are decreasing.

Arsenic was the only monitored parameter to exceed a primary MCL during the reporting period. These exceedances were reported in two wells: MW-32 (0.0103 and 0.0106 mg/L in February and May, respectively) and MW-34C (0.0252 mg/L and 0.0133 mg/L in August and November, respectively). It should be noted that these are total arsenic results that were obtained from unfiltered groundwater samples. The primary MCL for vinyl chloride was not exceeded during the current reporting period and has not been exceeded since 2006.

Over the reporting year, 95% UCL MTCA cleanup goal exceedances were reported at nine of eleven Compliance and Downgradient monitoring wells at the OVSL. Compliance wells MW-15R and MW-34A did not report any exceedances. With the exception of vinyl chloride in MW-32, the only parameters that exceeded the site specific MTCA cleanup levels were ammonia, arsenic, iron, and manganese.



The majority of parameter exceedances were reported in Compliance wells MW-39 and MW-42 and Downgradient wells MW-32 and MW-33A. However, an analysis of the 95% UCL for the ten site COCs relative to their respective cleanup levels continues to suggest ongoing improvement in overall groundwater quality through 2017. In addition, the POC wells exhibited only decreasing significant trends for the site-specific COCs.

Prediction limits for inorganic parameters were exceeded in eleven groundwater monitoring wells over the reporting period. Significantly increasing concentrations trends (using Sen's Non-Parametric Test for Trend) were reported for at least one inorganic parameter at seven well locations, while significantly decreasing trends also occurred at thirteen well locations. Significantly decreasing concentration trends were reported for trichloroethene (MW-19C) and vinyl chloride in Performance wells MW-19C, MW-32 and MW-34C.

Overall, the groundwater analytical data, statistical and graphical analyses, and comparison to water quality standards through 2017 continue to indicate similar, but improving conditions to those previously documented at the OVSL, with on-going evidence that natural attenuation continues to be improving the groundwater quality at the site.

### **5.1.2 Evidence for Natural Attenuation**

Natural attention includes a variety of physical, chemical and biological processes that act without human intervention to reduce mass, toxicity, mobility, volume, or concentration of contaminants. Examples of these processes can include biodegradation, dispersion, dilution, sorption, volatilization, chemical transformation, and contaminant destruction. At solid waste landfills, natural attenuation processes are largely controlled by and associated with changes in groundwater chemistry. Typically, for landfills, pathways for aerating subsurface soils and groundwater are impeded, resulting in increasingly anaerobic and reducing conditions. In turn, these conditions promote microbial communities that can degrade organic compounds resulting in the dechlorination of solvents and their daughter products.

Gradual, yet consistent, improvements to water quality have been observed at the OVSL over the past decade. This is illustrated by the overall stability and/or decreasing trends observed in the calculated 95% UCLs for site COCs and through their improving comparison with their respective site-specific MTCA cleanup levels. These data support the conclusion that natural attention is occurring as expected at the OVSL. It has also been previously noted that significant areas across and immediately downgradient of the OVSL waste cells exhibit a pronounced anaerobic and/or reducing geochemistry. As a result, dissolved oxygen (DO) levels are significantly reduced in the groundwater immediately beneath and downgradient of the unlined Barney White waste cell. The presence of organic rich wetlands northwest of this waste cell is also suspected be contributing to the locally anoxic groundwater conditions.

These geochemical conditions are prevalent at well locations showing the most elevated contaminant concentrations (e.g., MW-19C, MW-34C and MW-42 with elevated total iron, vinyl chloride and other redox sensitive parameters). The presence of vinyl chloride beneath the west-central portions of the site is consistent with the ongoing reductive dechlorination of parent compounds (PCE, TCE and DCE isomers). However, further downgradient, along the far western margins of the site (MW-33A and MW-36A) groundwater geochemistry becomes

increasingly less reductive and more oxidative, which in turn is increasingly supportive of the degradation of vinyl chloride. This was once again demonstrated during 2017 by the absence of VOCs, including vinyl chloride, in downgradient wells MW-29A, MW-33A, MW-33C and MW-36A. These geochemical conditions (high redox/low dissolved oxygen) have been consistently observed at the OVSL during post-closure monitoring.

The number of decreasing parameter trends reported for the OVSL provides additional evidence supporting this ongoing and expected natural attenuation. Given the current data and historical trends, natural attenuation at the OVSL can be anticipated to continue throughout the post-closure period and beyond.

## 5.2 LEACHATE

Comparisons between the 2017 groundwater and L-INF field and water quality results continue to indicate that parameters measured and analyzed in the L-INF are elevated relative to groundwater. These parameters include total/bicarbonate alkalinity, ammonia, calcium, chloride, magnesium, sulfate, sodium, COD, TDS and TOC. Similar to previous years, low levels of tert-butyl alcohol, tetrahydrofuran and vinyl chloride were also detected in the November 2017 sample. The OBWL-TD sample reported generally lower leachate indicator results than the L-INF sample, but slightly higher metals data. In addition, low levels of 2-butanone, acetone, tert-butyl alcohol, tetrahydrofuran and vinyl chloride were reported in the OBWL-TD sample.

The LP-LCD monitoring station was sampled in all four quarters of 2017. These samples continued to report elevated specific conductivity, alkalinity, calcium, chloride, sodium, sulfate, TDS and TOC compared to the groundwater results.

Approximately 1,100,000 gallons of leachate were generated from the OVSL during the course of the reporting year. Although greater than the most recent volumes (801,614 and 681,901 gallons in 2015 and 2016, respectively), the 2017 leachate volume remains well below the annual totals (over 2 million gallons) reported prior to 2013. Liquid volumes recorded at the LP-LCD monitoring station for the leachate pond leakage collection system indicate that approximately 1,730 gallons of liquid were captured and returned to the pond in 2017. This volume remains similar to the prior year's LP-LCD volume (1,687 gallons), and appreciably lower than those reported for 2014 (2,230 gallons) and 2015 (2,975 gallons). The relatively low LP-LCD volumes recorded during 2017 continue to suggest that leakage through the leachate pond liner system is minimal and well controlled.

## 5.3 LANDFILL GAS

Methane was not detected above state regulatory standards in any of the LFG monitoring probes or in any of the landfill structures during 2017. Perimeter LFG probe monitoring results continue to demonstrate that the facility is in compliance with respect to subsurface landfill soil gas migration criteria (less than 5% by volume of methane in soil at the property boundary). Methane was not detected in any of the onsite structures that were monitored over the reporting period.



LFG extraction rates and major gas component results for the 2017 operational period are summarized on Table E-4 (Appendix E). Over 2017, an estimated 156 million cubic feet of LFG were collected at the OVSL flare inlet, with an annualized average concentration of 23.25 percent methane (by volume). Improvements (discussed above and in previous reports) to the OVSL LFG extraction system and associated infrastructure have reduced and or stabilized LFG levels at both perimeter soil gas probe and structural monitoring locations. The LFG collection system will continue to be monitored and optimized to enhance its performance.

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## TABLES



**Table 1. Groundwater Well Construction Details  
2017 Annual Monitoring Report  
Olympic View Sanitary Landfill, Kitsap County, Washington**

Well ID	Northing	Easting	Measuring Point Elevation (ft. MSL)	Well Depth (ft. bgs)	Top of Screen Elevation (ft. MSL)	Bottom of Screen Elevation (ft. MSL)	Screen Length (ft.)
<b>Water Quality Monitoring Wells</b>							
MW-13A	188233.33	1159346.53	288.74	155	141	131	10
MW-13B	188223.33	1159346.53	288.66	260	36	26	10
MW-15R	189905.03	1157711.29	180.66	33	157	147	10
MW-16	190804.53	1159350.37	240.01	70	178	168	10
MW-19C	188520.03	1157025.96	196.96	90	111	106	5
MW-29A	188570.27	1156121.60	160.21	25	140	135	5
MW-32	188908.88	1156388.52	152.36	21	135	130	5
MW-33A	189304.18	1155636.34	147.68	20	140	125	15
MW-33C	189284.18	1155636.34	147.59	65	89	79	10
MW-34A	189391.16	1156929.63	197.95	48	168	148	20
MW-34C	189391.16	1156943.77	199.89	98	114	99	15
MW-35	188917.42	1159762.03	302.69	149	161	151	10
MW-36A	189754.10	1156935.20	192.68	50	147	142	5
MW-39	190362.60	1158325.32	189.92	25	174	164	10
MW-42	188690.50	1156617.90	187.43	33	159	154	5
MW-43	188407.60	1156636.60	186.42	30	161	156	5
<b>Water Level Measurement Only Wells</b>							
MW-2B1	189232.23	1157544.63	172.94	18	163	153	10
MW-2A1	189242.23	1157544.63	174.22	38	143	133	10
MW-4	188298.52	1156887.57	175.78	34	149	139	10
MW-10	188737.81	1156265.18	155.12	17.5	142	137	5
MW-20	188850.01	1157062.68	198.41	49	165	150	15
MW-21	188737.81	1156245.18	156.03	15	150	140	10
MW-23A	189485.84	1158085.12	182.28	23	172	157	15
MW-24	189795.14	1158383.22	208.24	42	176	161	15
MW-29C	188479.36	1156072.97	156.92	50	111	106	5
MW-30A	188623.50	1155612.45	166.74	35	136	131	5
MW-36	189751.87	1156955.77	189.39	100	99	89	10
MW-41A	188106.83	1157522.05	199.43	35.7	168	163	5
MW-41B	188104.34	1157530.68	200.64	79	126	121	5
MW-41C	188101.13	1157541.93	199.67	117	87	82	5

**Table 2. Summary of Analytical Parameters  
2017 Annual Monitoring Report  
Olympic View Sanitary Landfill, Kitsap County, Washington**

Well	Volatile Organic Compounds		Geochemical Indicator Parameters**	Leachate Indicator Parameters			Field Parameters	Metals* and Nitrate	Appendix III Parameters <sup>c</sup>	
	WAC 173-351 Appendix I	Vinyl Chloride (SIM)	Cl, Fe, Mn, SO <sub>4</sub> , Ca, Mg, Na, K, Alkalinity	Ammonia	TOC, TDS	BOD***, COD	Dissolved Oxygen, ORP, pH, Specific Conductivity, Temperature, Turbidity	As, Sb, Ba, Be, Cd, Cr, Co, Cu, Pb, Ni, Se, Ag, Tl, V, Zn, NO <sub>3</sub>	TSS	VOCs, SVOCs, PCBs, Pest/Herb, Hg, Sn
<b>Compliance Monitoring Locations</b>										
MW-15R										
MW-34A										
MW-34C	✓	✓	✓	✓	✓		✓		✓	
MW-39										
MW-42										
MW-43										
<b>Performance Monitoring Locations</b>										
MW-19C <sup>a</sup>	✓	✓	✓	✓	✓		✓		✓	
<b>Downgradient Monitoring Locations</b>										
MW-29A <sup>a</sup>										
MW-32										
MW-33A <sup>a</sup>	✓	✓	✓	✓	✓		✓		✓	
MW-33C <sup>a</sup>										
MW-36A <sup>a</sup>										
<b>Upgradient Monitoring Locations</b>										
MW-13A										
MW-13B	✓	✓	✓	✓	✓		✓		✓	
MW-16										
MW-35										
<b>Leachate Monitoring Locations</b>										
L-INF <sup>b</sup>	✓	✓	✓	✓	✓	✓	✓		✓	
LP-LCD			✓	✓	✓	✓	✓			
OBWL-TD <sup>b</sup>	✓	✓	✓	✓	✓	✓	✓		✓	

**Notes**

✓ Indicates wells were sampled for selected parameters

\* The Appendix I metals in the groundwater samples were analyzed for only total metals fractions.

\*\* Only Iron and Manganese were analyzed for both total and dissolved fractions.

\*\*\* BOD only analyzed at LP-LCD

<sup>a</sup> Sampled semi-annually in May and November 2017.

<sup>b</sup> Sampled annually (Q4 2017).

<sup>c</sup> Groundwater and leachate samples were not analyzed for Appendix III parameters during 2017.

**Table 3. Groundwater Elevations  
2017 Annual Monitoring Report  
Olympic View Sanitary Landfill, Kitsap County, Washington**

Location ID	Measuring Point Elevation (ft. MSL)	Q1 February 2017		Q2 May 2017		Q3 August 2017		Q4 November 2017	
		DTW	WLE	DTW	WLE	DTW	WLE	DTW	WLE
<b>Water Quality Monitoring Wells</b>									
MW-13A	288.74	43.89	244.85	43.94	244.80	45.44	243.30	58.56	230.18
MW-13B	288.66	57.05	231.61	56.14	232.52	58.17	230.49	59.10	229.56
MW-15R	180.66	17.78	162.88	17.87	162.79	19.03	161.63	18.78	161.88
MW-16	240.01	54.61	185.40	50.73	189.28	56.31	183.70	59.08	180.93
MW-19C	196.96	--	--	31.41	165.55	--	--	33.68	163.28
MW-29A	160.21	--	--	12.71	147.50	--	--	12.67	147.54
MW-32	152.36	0.88	151.48	1.06	151.30	1.79	150.57	0.97	151.39
MW-33A	147.68	--	--	4.99	142.69	--	--	4.02	143.66
MW-33C	147.59	--	--	1.75	145.84	--	--	1.63	145.96
MW-34A	197.95	38.09	159.86	38.50	159.45	39.93	158.02	39.49	158.46
MW-34C	199.89	39.91	159.98	40.33	159.56	41.74	158.15	41.34	158.55
MW-35	302.69	69.49	233.20	70.49	232.20	71.72	230.97	72.09	230.60
MW-36A	192.68	--	--	30.15	162.53	--	--	31.05	161.63
MW-39	189.92	16.29	173.63	17.82	172.10	21.09	168.83	20.49	169.43
MW-42	187.43	26.11	161.32	26.62	160.81	28.23	159.20	26.87	160.56
MW-43	186.42	22.05	164.37	23.42	163.00	25.28	161.14	21.19	165.23
<b>Water Level Measurement Only Wells (Semi-Annual)</b>									
MW-2A1	174.22	--	--	6.16	168.06	--	--	7.54	166.68
MW-2B1	172.94	--	--	5.23	167.71	--	--	6.22	166.72
MW-4	175.78	--	--	12.46	163.32	--	--	11.67	164.11
MW-10	155.12	--	--	3.58	151.54	--	--	2.31	152.81
MW-20	198.41	--	--	33.91	164.50	--	--	35.17	163.24
MW-21	156.03	--	--	4.82	151.21	--	--	3.52	152.51
MW-23A	182.28	--	--	9.04	173.24	--	--	11.51	170.77
MW-24	208.25	--	--	27.20	181.05	--	--	32.48	175.77
MW-29C	156.92	--	--	10.97	145.95	--	--	11.05	145.87
MW-30A	166.74	--	--	23.05	143.69	--	--	23.86	142.88
MW-36	189.39	--	--	30.15	159.24	--	--	31.16	158.23
MW-41A	199.43	--	--	19.98	179.45	--	--	25.28	174.15
MW-41B	200.64	--	--	20.12	180.52	--	--	25.48	175.16
MW-41C	199.67	--	--	21.94	177.73	--	--	26.65	173.02

**Notes:**

DTW = Depth to Water (ft)

WLE = Water level elevation

Elevations, ft. MSL

-- = Water level not measured during sampling event

NM = Not measured due to access issues

Dry = Well dry during sampling event





**Table 4A. Detections and Field Measurements - Compliance Monitoring Wells  
2017 Annual Monitoring Report  
Olympic View Sanitary Landfill, Kitsap County, Washington**

Parameter	Units	MW-15R	MW-15R	MW-15R	MW-15R	MW-34A	MW-34A	MW-34A	MW-34A	MW-34C	MW-34C	MW-34C	MW-34C	MW-39	MW-39	MW-39	MW-39	MW-42	MW-42	MW-42	MW-42	MW-43	MW-43	MW-43	MW-43	
		2/21/2017	5/24/2017	8/31/2017	11/14/2017	2/21/2017	5/25/2017	8/31/2017	11/14/2017	2/21/2017	5/25/2017	8/31/2017	11/14/2017	2/22/2017	5/24/2017	8/30/2017	11/13/2017	2/21/2017	5/23/2017	8/30/2017	11/13/2017	2/21/2017	5/24/2017	8/30/2017	11/13/2017	
<b>Field Parameter</b>																										
Dissolved Oxygen	mg/L	1.14	1.79	1.25	0.67	7.29	8.26	4.99	0.69	0.28	1.85	0.27	0.26	1.57	1.70	0.26	0.15	0.22	1.55	0.20	0.14	7.86	2.12	0.26	0.80	
Oxidation Reduction Potential	mV	140.8	54.1	123.4	118.0	225.4	150.3	153.5	110.2	20.6	-11.6	-5.7	-8.9	77.1	-47.9	-70.4	-241.0	-49.6	-76.1	-71.1	-79.0	191.4	119.4	142.9	118.7	
pH	pH	6.66	6.89	<b>6.45</b>	6.51	<b>6.09</b>	<b>5.80</b>	<b>5.76</b>	<b>5.89</b>	6.78	6.96	6.69	6.61	<b>5.93</b>	6.80	<b>6.47</b>	<b>6.26</b>	6.58	6.92	6.65	6.70	<b>5.89</b>	<b>5.89</b>	<b>5.50</b>	<b>5.62</b>	
Specific Conductivity	umhos/cm	161	161	161	152	106	111	111	162	243	235	244	232	133	260	264	262	508	484	560	560	35	37	47	50	
Temperature	deg C	10.28	10.36	10.47	10.19	12.00	12.77	12.57	12.25	12.82	13.16	13.53	13.01	10.11	9.65	11.32	11.25	12.20	12.31	12.58	12.04	6.95	8.72	10.57	11.27	
Turbidity	NTU	1.82	1.31	2.31	1.19	2.18	1.68	3.51	1.66	85.80	4.98	300.20	158.0	5.76	4.39	2.21	3.20	2.03	5.00	4.10	2.72	5.85	16.20	4.02	2.23	
<b>General Chemistry</b>																										
Alkalinity, Bicarbonate (As CaCO3)	mg/L	75	69	74	68	49	48	48	76	120	100	100	100	56	110	110	98	230	200	210	210	14	13	15	14	
Alkalinity, Total (As CaCO3)	mg/L	75	69	74	68	49	48	48	76	120	100	100	100	56	110	110	98	230	200	210	210	14	13	15	14	
Ammonia (as N)	mg/L	--	--	--	--	--	--	0.035	--	0.034	--	--	--	0.064	<b>0.63</b>	<b>0.39</b>	<b>0.47</b>	<b>5.2</b>	<b>4.1</b>	<b>5.0</b>	<b>4.5</b>	0.044	0.031	0.050	--	
Calcium, Dissolved	mg/L	13	13	12	13	9.3	8.3	9.0	13.0	23	18	22	21	11	11	11	12	36	34	41	42	2.7	2.8	3.5	4.0	
Chloride	mg/L	2.3	2.7	--	2.6	1.9	1.3	--	2.7	4.6	5.3	--	5.4	1.1	4.7	5.5	5.5	15.0	15.0	--	21.0	--	--	--	2.3	
Iron, Dissolved	mg/L	--	--	--	--	--	--	--	--	<b>0.67</b>	<b>0.53</b>	<b>0.59</b>	<b>0.58</b>	<b>4.9</b>	<b>32</b>	<b>33</b>	<b>34</b>	<b>23</b>	<b>19</b>	<b>22</b>	<b>23</b>	<b>0.66</b>	0.24	0.29	--	
Iron, Total	mg/L	--	--	--	--	--	--	--	--	<b>12</b>	<b>1.6</b>	--	<b>25</b>	<b>5.6</b>	<b>33</b>	<b>33</b>	<b>36</b>	<b>21</b>	<b>23</b>	--	<b>26</b>	<b>2.5</b>	<b>1.8</b>	--	<b>0.74</b>	
Magnesium, Dissolved	mg/L	7.7	8.4	8.2	8.1	3.3	4.2	4.2	6.5	10.0	9.3	9.4	9.0	5.4	6.5	7.1	7.3	12	12	14	14	1.1	1.2	1.4	1.6	
Manganese, Dissolved	mg/L	0.0024	0.0019	--	--	--	--	--	--	<b>0.52</b>	<b>0.51</b>	<b>0.56</b>	<b>0.59</b>	<b>0.071</b>	<b>0.750</b>	<b>0.440</b>	<b>0.460</b>	<b>4.0</b>	<b>3.3</b>	<b>4.2</b>	<b>4.3</b>	<b>0.140</b>	<b>0.064</b>	<b>0.053</b>	0.016	
Manganese, Total	mg/L	0.0022	0.0022	0.0032	0.0019	0.0012	0.0013	0.0010	0.0012	<b>0.67</b>	<b>0.53</b>	<b>2.0</b>	<b>1.1</b>	<b>0.077</b>	<b>0.660</b>	<b>0.430</b>	<b>0.430</b>	<b>4.0</b>	<b>3.8</b>	<b>4.2</b>	<b>4.4</b>	<b>0.100</b>	<b>0.071</b>	<b>0.053</b>	0.027	
Nitrate (As N)	mg/L	0.46	0.16	0.28 B	0.22	0.42	0.40	--	0.19	--	--	0.34 B	--	0.42	--	--	--	--	--	--	--	0.18	0.17	0.23 B	1.1 H	
Potassium, Dissolved	mg/L	--	--	--	--	--	--	--	--	--	1.1	1.2	--	--	--	--	--	7.5	7.9	8.8	8.5	--	--	--	--	
Sodium, Dissolved	mg/L	6.0	5.2	5.0	5.0	6.9	7.0	6.6	7.9	11.0	10.0	11.0	10.0	4.7	6.8	8.5	8.4	17.0	17.0	19.0	20.0	1.8	1.9	2.0	2.2	
Sulfate	mg/L	5.0	5.8	--	4.8	3.4	3.8	--	2.2	5.2	4.8	--	4.9	1.1	--	--	--	6.3	4.9	--	14.0	1.6	1.6	--	1.1	
Total Dissolved Solids (TDS)	mg/L	110	120	96	100	120	96	92	130	170	100	160	180	73	140	140	150	250	280	260	290	7	41	30	34	
Total Organic Carbon (TOC)	mg/L	--	--	--	--	--	--	--	1.2	--	--	--	1.4	--	3.2	2.4	2.8	6.4	7.2	--	6.8	1.1	1.2	--	1.3	
Total Suspended Solids (TSS)	mg/L	--	--	--	--	--	--	--	--	34	6	94	48	6	11	--	11	4.4	7.6	15	10	4.0	4.8	--	--	
<b>Metals</b>																										
Antimony, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic, Total	mg/L	<b>0.000258</b>	<b>0.000238</b>	<b>0.000191</b>	<b>0.000240</b>	<b>0.000407</b>	<b>0.000478</b>	<b>0.000472</b>	<b>0.000442</b>	<b>0.00796</b>	<b>0.00188</b>	<b>0.02520</b>	<b>0.01330</b>	<b>0.000427</b>	<b>0.00187</b>	<b>0.00178</b>	<b>0.00178</b>	<b>0.00162</b>	<b>0.00175</b>	<b>0.00182</b>	<b>0.00180</b>	--	<b>0.0000562</b>	0.0000408	0.0000466	
Barium, Total	mg/L	0.0042	0.0039	0.0044	0.0046	0.0038	0.0028	0.0026	0.0036	0.063	0.011	0.150	0.090	0.0074	0.012	0.012	0.012	0.100	0.088	0.110	0.110	0.0029	0.0031	0.0032	0.0038	
Cadmium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium, Total	mg/L	--	--	--	--	0.0061	0.0061	0.0061	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0060	0.0068	0.0065	--	--	--	--	--	--	--	--	--
Copper, Total	mg/L	--	--	--	--	--	--	--	--	0.0027	--	0.0048	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel, Total	mg/L	--	--	--	--	0.0059	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium, Total	mg/L	0.0042	0.0030	0.0024	0.0029	0.0040	0.0036	0.0041	0.0037	--	--	0.0035	0.0020	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>Volatile Organic Compounds</b>																										
Acetone	ug/L	--	--	--	--	--	3.0	--	--	--	--	--	--	--	5.0	--	--	--	--	--	--	--	--	--	--	--
Trichloroethene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vinyl chloride	ug/L	--	--	--	--	--	--	--	--	<b>0.064</b>	<b>0.056</b>	<b>0.058</b>	<b>0.033</b>	--	--	--	--	0.011 J	0.011	<b>0.051</b>	<b>0.031</b>	--	--	--	--	

**Notes:**  
CaCO<sub>3</sub> = Calcium carbonate  
deg-C = Degrees Celcius  
J = Concentration is estimated  
umhos/cm = Microhms per centimeter  
ug/L = Micrograms per liter  
mg/L = Milligrams per liter  
Parameters not listed above were not detected at any of the above listed sample locations during the reporting year

mV = Millivolts  
N = Nitrogen  
NTU = Nephelometric turbidity units  
SU = Standard units  
-- = Parameter not detected above the project-specific reporting limit  
NM = Not Measured, see field notes

B = Anaylte detected in sample blank  
**Bold** = Anaylte exceeds a water quality standard.  
H = Hold time expired. Concentration is estimate based on method 353.2



**Table 4B. Detections and Field Measurements - Performance Monitoring Wells  
2017 Annual Monitoring Report  
Olympic View Sanitary Landfill, Kitsap County, Washington**

Parameter	Units	MW-19C 5/25/2017	MW-19C 11/13/2017
<b>Field Parameter</b>			
Dissolved Oxygen	mg/L	1.63	0.22
Oxidation Reduction Potential	mV	17.0	-19.0
pH	pH	7.06	6.82
Specific Conductivity	umhos/cm	139	173
Temperature	deg C	10.62	10.08
Turbidity	NTU	2.44	1.21
<b>General Chemistry</b>			
Alkalinity, Bicarbonate (As CaCO <sub>3</sub> )	mg/L	60	74
Alkalinity, Total (As CaCO <sub>3</sub> )	mg/L	60	74
Ammonia (as N)	mg/L	<b>0.47</b>	<b>0.46</b>
Calcium, Dissolved	mg/L	10	15
Chloride	mg/L	2.1	4.4
Iron, Dissolved	mg/L	0.11	0.14
Iron, Total	mg/L	0.19	0.22
Magnesium, Dissolved	mg/L	6.2	7.4
Manganese, Dissolved	mg/L	<b>0.87</b>	<b>1.2</b>
Manganese, Total	mg/L	<b>0.88</b>	<b>1.2</b>
Nitrate (As N)	mg/L	--	-- H
Potassium, Dissolved	mg/L	1.4	1.3
Sodium, Dissolved	mg/L	5.4	5.5
Sulfate	mg/L	3.9	4.1
Total Dissolved Solids (TDS)	mg/L	76	120
Total Organic Carbon (TOC)	mg/L	--	--
Total Suspended Solids (TSS)	mg/L	--	--
<b>Metals</b>			
Antimony, Total	mg/L	--	--
Arsenic, Total	mg/L	<b>0.00250</b>	<b>0.00294</b>
Barium, Total	mg/L	0.0036	0.0041
Cadmium, Total	mg/L	--	--
Chromium, Total	mg/L	--	--
Cobalt, Total	mg/L	--	--
Copper, Total	mg/L	--	--
Lead, Total	mg/L	--	--
Nickel, Total	mg/L	--	--
Vanadium, Total	mg/L	--	--
Zinc, Total	mg/L	--	--
<b>Volatile Organic Compounds</b>			
Acetone	ug/L	6.0	--
Trichloroethene	ug/L	0.91	1.2
Vinyl chloride	ug/L	--	--

**Notes:**

CaCO<sub>3</sub> = Calcium carbonate

deg-C = Degrees Celcius

H = Hold time expired. Concentration is estimate based on method 353.2

J = Concentration is estimated

umhos/cm = Microhms per centimeter

ug/L = Micrograms per liter

mg/L = Miligrams per liter

Parameters not listed above were not detected at any of the above listed sample locations during the reporting year



**Table 4C. Detections and Field Measurements - Downgradient Monitoring Wells  
2017 Annual Monitoring Report  
Olympic View Sanitary Landfill, Kitsap County, Washington**

Parameter	Units	MW-29A 5/25/2017	MW-29A 11/13/2017	MW-32 2/22/2017	MW-32 5/25/2017	MW-32 8/31/2017	MW-32 11/15/2017	MW-33A 5/23/2017	MW-33A 11/14/2017	MW-33C 5/23/2017	MW-33C 11/14/2017	MW-36A 5/24/2017	MW-36A 11/14/2017
<b>Field Parameter</b>													
Dissolved Oxygen	mg/L	2.50	0.21	0.70	1.98	0.59	0.15	2.14	0.39	1.60	0.16	3.97	3.38
Oxidation Reduction Potential	mV	8.7	2.9	1.1	-36.3	-35.6	-36.6	-31.8	52.0	-104.0	-230.0	121.7	176.0
pH	pH	6.53	<b>6.26</b>	6.77	7.15	6.91	7.01	7.07	<b>6.33</b>	8.34	7.81	<b>6.22</b>	<b>5.91</b>
Specific Conductivity	umhos/cm	84	87	231	244	251	263	137	109	163	157	138	123
Temperature	deg C	8.33	10.90	11.64	12.10	12.42	11.90	9.05	9.60	9.57	9.11	9.64	9.60
Turbidity	NTU	2.99	3.33	2.35	2.03	3.41	1.85	3.52	3.86	1.15	2.21	0.75	3.22
<b>General Chemistry</b>													
Alkalinity, Bicarbonate (As CaCO3)	mg/L	34	35	100	100	97	110	60	52	67	68	61	58
Alkalinity, Total (As CaCO3)	mg/L	34	35	100	100	97	110	60	52	67	68	61	58
Ammonia (as N)	mg/L	0.074	0.066	--	--	--	0.034	0.031	--	--	--	--	--
Calcium, Dissolved	mg/L	5.1	5.8	20	19	20	22	13	11	16	17	9.9	9.5
Chloride	mg/L	1.2	1.5	5.6	7.0	--	12.0	3.0	2.1	3.1	3.0	1.2	1.8
Iron, Dissolved	mg/L	<b>3.4</b>	<b>3.5</b>	<b>0.49</b>	<b>0.51</b>	<b>0.48</b>	<b>0.56</b>	0.170	0.075	--	--	--	--
Iron, Total	mg/L	<b>3.8</b>	<b>4.0</b>	<b>0.53</b>	<b>0.81</b>	--	<b>0.62</b>	<b>1.6</b>	<b>2.5</b>	0.110	0.083	--	0.085
Magnesium, Dissolved	mg/L	3.2	3.3	11.0	11.0	10.0	11.0	6.4	5.3	6.8	6.6	6.8	6.5
Manganese, Dissolved	mg/L	<b>1.1</b>	<b>1.1</b>	<b>1.7</b>	<b>1.8</b>	<b>1.6</b>	<b>1.8</b>	0.012	0.011	<b>0.15</b>	<b>0.14</b>	--	--
Manganese, Total	mg/L	<b>1.2</b>	<b>1.2</b>	<b>1.8</b>	<b>2.0</b>	<b>1.6</b>	<b>1.9</b>	0.021	0.028	<b>0.14</b>	<b>0.15</b>	--	0.0028
Nitrate (As N)	mg/L	--	--	--	--	--	-- H	--	--	--	--	1.1	0.22
Potassium, Dissolved	mg/L	--	--	--	1.1	1.2	--	--	--	1.0	1.3	--	--
Sodium, Dissolved	mg/L	3.1	3.3	9.9	11.0	10.0	11.0	3.8	3.4	4.2	4.0	6.8	5.9
Sulfate	mg/L	--	--	8.1	8.3	--	10.0	4.2	2.5	8.3	8.4	3.2	2.7
Total Dissolved Solids (TDS)	mg/L	88	59	170	140	160	200	87	85	100	110	120	110
Total Organic Carbon (TOC)	mg/L	1.6	1.6	--	--	--	1.4	1.2	3.0	--	--	--	--
Total Suspended Solids (TSS)	mg/L	6.4	--	--	--	--	--	--	4.4	--	--	--	--
<b>Metals</b>													
Antimony, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic, Total	mg/L	<b>0.00184</b>	<b>0.00213</b>	<b>0.01030</b>	<b>0.01060</b>	<b>0.00984</b>	<b>0.00974</b>	<b>0.000334</b>	<b>0.000610</b>	<b>0.00251</b>	<b>0.00267</b>	<b>0.000616</b>	<b>0.000563</b>
Barium, Total	mg/L	0.0057	0.0076	0.0037	0.0044	0.0037	0.0039	0.0023	0.0023	0.0037	0.0038	0.0023	0.0023
Cadmium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Chromium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	0.011	0.008
Cobalt, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Copper, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Lead, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Nickel, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium, Total	mg/L	--	--	--	--	--	--	0.0028	0.0041	--	--	--	0.0022
Zinc, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
<b>Volatile Organic Compounds</b>													
Acetone	ug/L	--	--	--	3.6	--	--	--	--	--	--	--	--
Trichloroethene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--
Vinyl chloride	ug/L	--	--	<b>0.29</b>	<b>0.18</b>	<b>0.28</b>	<b>0.37</b>	--	--	--	--	--	--

**Notes:**

CaCO<sub>3</sub> = Calcium carbonate

deg-C = Degrees Celcius

J = Concentration is estimated

umhos/cm = Microhms per centimeter

ug/L = Micrograms per liter

mg/L = Miligrams per liter

Parameters not listed above were not detected at any of the above listed sample locations during the reporting year

mV = Millivolts

N = Nitrogen

NTU = Nephelometric turbidity units

SU = Standard units

-- = Parameter not detected above the project-specific reporting limit

NM = Not Measured, see field notes

B = Analyte detected in sample blank

**Bold** = Analyte exceeds a water quality standard.

H = Hold time expired. Concentration is estimate based on method 353.2

**Table 4D. Detections and Field Measurements - Upgradient Monitoring Wells  
2017 Annual Monitoring Report  
Olympic View Sanitary Landfill, Kitsap County, Washington**

Parameter	Units	MW-13A	MW-13A	MW-13A	MW-13A	MW-13B	MW-13B	MW-13B	MW-13B	MW-16	MW-16	MW-16	MW-16	MW-35	MW-35	MW-35	MW-35
		2/22/2017	5/24/2017	8/30/2017	11/13/2017	2/22/2017	5/24/2017	8/30/2017	11/13/2017	2/22/2017	5/24/2017	8/30/2017	11/13/2017	2/22/2017	5/24/2017	8/30/2017	11/15/2017
<b>Field Parameter</b>																	
Dissolved Oxygen	mg/L	7.57	8.10	7.25	6.11	8.07	8.03	7.16	6.59	8.92	8.74	6.67	5.61	7.48	8.30	6.99	5.56
Oxidation Reduction Potential	mV	274.4	89.4	152.3	158.4	243.5	66.5	135.6	77.0	264.3	130.7	172.1	117.0	244.0	100.2	117.3	181.7
pH	pH	6.97	7.17	7.00	6.79	7.65	7.76	7.41	7.49	<b>6.42</b>	<b>6.35</b>	<b>6.17</b>	<b>6.35</b>	7.38	7.23	7.29	6.98
Specific Conductivity	umhos/cm	170	175	175	171	171	175	178	170	97	47	114	104	161	166	167	161
Temperature	deg C	9.11	9.59	9.85	9.41	9.06	9.76	10.27	9.54	9.01	9.35	9.70	9.30	9.95	9.99	11.63	9.83
Turbidity	NTU	1.34	0.38	1.28	1.69	1.25	0.56	2.15	2.26	1.61	0.76	2.50	1.71	1.23	0.50	4.71	2.81
<b>General Chemistry</b>																	
Alkalinity, Bicarbonate (As CaCO3)	mg/L	85	82	80	81	83	80	80	81	45	42	61	50	79	76	74	77
Alkalinity, Total (As CaCO3)	mg/L	85	82	80	81	83	80	80	81	45	42	61	50	79	76	74	77
Ammonia (as N)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Calcium, Dissolved	mg/L	17	14	15	15	18	14	17	17	8.4	7.6	9.2	8.9	15	13	14	13
Chloride	mg/L	2.0	1.9	2.4	1.7	2.0	2.0	2.2	1.9	1.3	1.2	--	--	1.9	1.9	1.6	1.7
Iron, Dissolved	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron, Total	mg/L	--	0.087	--	--	--	--	--	--	--	0.068	--	--	--	--	--	--
Magnesium, Dissolved	mg/L	10	8.9	8.8	8.6	9.3	8.6	8.5	8.3	5.0	4.2	4.9	4.8	9.9	8.6	8.9	8.5
Manganese, Dissolved	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese, Total	mg/L	--	--	--	--	--	--	--	--	0.0045	0.0100	0.0016	0.0011	--	--	--	--
Nitrate (As N)	mg/L	0.44	0.45	0.40	0.42	0.46	0.48	0.43	0.44	0.39	0.55	0.29	0.28	0.44	0.49	0.42	0.51 H
Potassium, Dissolved	mg/L	--	1.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium, Dissolved	mg/L	5.4	7.7	5.4	5.1	4.9	5.4	5.4	5.1	4.2	4.4	4.9	4.9	4.9	5.0	5.4	5.0
Sulfate	mg/L	2.0	2.1	1.8	1.8	3.5	3.4	3.8	2.9	2.5	2.7	1.6	1.0	2.5	2.3	2.2	2.8
Total Dissolved Solids (TDS)	mg/L	110	100	100	110	110	97	110	110	80	93	85	80	100	110	99	100
Total Organic Carbon (TOC)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Suspended Solids (TSS)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>Metals</b>																	
Antimony, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic, Total	mg/L	<b>0.000201</b>	<b>0.000181</b>	<b>0.000191</b>	<b>0.000193</b>	<b>0.000324</b>	<b>0.000327</b>	<b>0.000338</b>	<b>0.000311</b>	<b>0.000383</b>	<b>0.000375</b>	<b>0.000353</b>	<b>0.000364</b>	<b>0.000120</b>	<b>0.000134</b>	<b>0.000114</b>	<b>0.000107</b>
Barium, Total	mg/L	0.0028	0.0025	0.0025	0.0030	0.0034	0.0033	0.0033	0.0035	0.0027	0.0026	0.0031	0.0035	0.0031	0.0027	0.0028	0.0028
Cadmium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium, Total	mg/L	--	--	--	--	0.0033	--	0.0031	0.0034	0.0088	0.0079	0.0075	0.0073	--	--	--	--
Cobalt, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium, Total	mg/L	0.0043	0.0033	0.0039	0.0038	0.0058	0.0044	0.0054	0.0051	0.0047	0.0030	0.0033	0.0031	0.0050	0.0034	0.0042	0.0040
Zinc, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>Volatile Organic Compounds</b>																	
Acetone	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Butyl alcohol, n-	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	40
Trichloroethene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vinyl chloride	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**Notes:**

CaCO <sub>3</sub> = Calcium carbonate	mV = Millivolts	B = Analyte detected in sample blank
deg-C = Degrees Celcius	N = Nitrogen	<b>Bold</b> = Analyte exceeds a water quality standard.
J = Conentration is estimated	NTU = Nephelometric turbidity units	H = Hold time expired. Concentration is estimate based on method 353.2
umhos/cm = Microhms per centimeter	SU = Standard units	
ug/L = Micrograms per liter	-- = Parameter not detected above the project-specific reporting limit	
mg/L = Miligrams per liter	NM = Not Measured, see field notes	

Parameters not listed above were not detected at any of the above listed sample locations during the reporting year

**Table 4E. Detections and Field Measurements - Leachate and Leak Detection Locations  
2017 Annual Monitoring Report  
Olympic View Sanitary Landfill, Kitsap County, Washington**

Parameter	Units	L-INF	OBWL-TD	LP-LCD	LP-LCD	LP-LCD	LP-LCD
		11/15/2017	11/15/2017	2/20/2017	5/31/2017	8/21/2017	11/21/2017
<b>Field Parameter</b>							
Dissolved Oxygen	mg/L	1.56	5.47	10.10	7.00	5.90	9.50
Oxidation Reduction Potential	mV	93.0	490.9	238.0	48.0	58.0	212.0
pH	pH	7.28	1.97	7.15	7.29	6.84	7.12
Specific Conductivity	umhos/cm	4588	4818	2519	3416	3477	3461
Temperature	deg C	11.45	10.40	7.40	16.40	24.50	15.20
Turbidity	NTU	28.02	6.02	4.70	4.17	6.24	9.70
<b>General Chemistry</b>							
Alkalinity, Bicarbonate (As CaCO <sub>3</sub> )	mg/L	1400	--	810	490	520	720
Alkalinity, Total (As CaCO <sub>3</sub> )	mg/L	1400	--	810	490	520	720
Ammonia (as N)	mg/L	2.7	8.2	3.0	0.82	0.74	1.7
Biochemical Oxygen Demand	mg/L	NA	NA	--	--	29.0	--
Calcium, Dissolved	mg/L	130	32	NA	NA	NA	NA
Calcium, Total	mg/L	NA	NA	82	84	66	73
Chemical Oxygen Demand	mg/L	260	40	160	150	150	170
Chloride	mg/L	620	1.8	650	670	650	680
Iron, Dissolved	mg/L	1.1	2.6	NA	NA	NA	NA
Iron, Total	mg/L	NA	NA	0.30	0.36	0.49	0.12
Magnesium, Dissolved	mg/L	72	11	NA	NA	NA	NA
Magnesium, Total	mg/L	NA	NA	52	50	37	41
Manganese, Dissolved	mg/L	1.9	0.35	NA	NA	NA	NA
Manganese, Total	mg/L	NA	NA	0.70	0.34	0.33	0.58
Nitrate/Nitrite, Total	mg/L	--	1.6	NA	NA	NA	NA
Potassium, Dissolved	mg/L	74	--	NA	NA	NA	NA
Potassium, Total	mg/L	NA	NA	74	89	72	69
Sodium, Dissolved	mg/L	570	2.7	NA	NA	NA	NA
Sodium, Total	mg/L	NA	NA	730	670	740	720
Sulfate	mg/L	240	860	280	270	270	300
Total Dissolved Solids (TDS)	mg/L	2,200	540	2,400	2,500	2,500	2500
Total Organic Carbon (TOC)	mg/L	90	13	59	54	49	57
<b>Metals</b>							
Antimony, Dissolved	mg/L	--	0.033	NA	NA	NA	NA
Barium, Dissolved	mg/L	0.160	0.037	NA	NA	NA	NA
Cadmium, Dissolved	mg/L	--	0.00047	NA	NA	NA	NA
Chromium, Dissolved	mg/L	0.0049	0.1400	NA	NA	NA	NA
Cobalt, Dissolved	mg/L	0.0060	0.0089	NA	NA	NA	NA
Copper, Dissolved	mg/L	--	0.2	NA	NA	NA	NA
Lead, Dissolved	mg/L	--	0.0018	NA	NA	NA	NA
Nickel, Dissolved	mg/L	0.05	0.39	NA	NA	NA	NA
Vanadium, Dissolved	mg/L	0.005	0.013	NA	NA	NA	NA
Zinc, Dissolved	mg/L	--	0.63	NA	NA	NA	NA
<b>Volatile Organic Compounds</b>							
2-Butanone (MEK)	ug/L	--	100	NA	NA	NA	NA
Acetone	ug/L	--	270	NA	NA	NA	NA
Butyl alcohol, tert-	ug/L	240	380	NA	NA	NA	NA
Tetrahydrofuran	ug/L	75	120	NA	NA	NA	NA
Vinyl chloride	ug/L	0.037	0.013	NA	NA	NA	NA

**Notes:**

CaCO<sub>3</sub> = Calcium carbonate

deg-C = Degrees Celcius

J = Concentration is estimated

umhos/cm = Microhms per centimeter

ug/L = Micrograms per liter

mg/L = Milligrams per liter

H = Analyzed beyond hold time

Parameters not listed above were not detected at any of the above listed sample locations during the reporting year.

NA = Not Analyzed

mV = Millivolts

N = Nitrogen

NTU = Nephelometric turbidity units

SU = Standard units

-- = Parameter not detected above the project-specific reporting limit

NM = Not Measured, see field notes

B = Anaylte detected in sample blank

**Table 5. 2017 Groundwater and Leachate VOC Detections  
2017 Annual Monitoring Report  
Olympic View Sanitary Landfill, Kitsap County, Washington**

Parameter	Units	Event	Well Type	Well	Result
2-Butanone (MEK)	ug/L	Q417	System	OBWL-TD	100
Acetone	ug/L	Q217	Compliance	MW-34A	3.0
			Compliance	MW-39	5.0
			Downgradient	MW-32	3.6
			Performance	MW-19C	6.0
		Q417	System	OBWL-TD	270
Butyl alcohol, n-	ug/L	Q417	Upgradient	MW-35	40
Butyl alcohol, tert-	ug/L	Q417	System	OBWL-TD	380
			System	L-INF	240
Tetrahydrofuran	ug/L	Q417	System	L-INF	75
		Q417	System	OBWL-TD	120
Trichloroethene	ug/L	Q217	Performance	MW-19C	0.91
		Q417	Performance	MW-19C	1.20
Vinyl chloride	ug/L	Q117	Compliance	MW-34C	0.064
			Compliance	MW-42	0.011 J
			Downgradient	MW-32	0.290
		Q217	Compliance	MW-42	0.011
			Compliance	MW-34C	0.056
			Downgradient	MW-32	0.180
		Q317	Compliance	MW-34C	0.058
			Compliance	MW-42	0.051
			Downgradient	MW-32	0.280
		Q417	Compliance	MW-34C	0.033
			Compliance	MW-42	0.031
			Downgradient	MW-32	0.370
			System	L-INF	0.037
System	OBWL-TD	0.013			

J = Indicates that concentration is estimated due to low concentration in sample



**Table 6A. Summary of Significant Parameter Trends by Well Type  
2017 Annual Monitoring Report  
Olympic View Sanitary Lanfill, Kitsap County, Washington**

Significant VOC Trends		Significant Inorganic Parameter Trends	
Increasing	Decreasing	Increasing	Decreasing
<b>Upgradient Wells</b>			
None	None	Alkalinity, Bicarbonate Alkalinity, Total Nitrate Temperature	Alkalinity, Bicarbonate Alkalinity, Total Calcium, Dissolved Chloride Magnesium, Dissolved Sulfate
<b>Performance Wells</b>			
None	Trichloroethene Vinyl Chloride	None	Arsenic, Total Chloride Sodium, Dissolved Specific Conductivity Sulfate
<b>Compliance Wells</b>			
None	Vinyl Chloride	pH Potassium, Dissolved Temperature Chloride	Alkalinity, Bicarbonate Alkalinity, Total Ammonia Calcium, Dissolved Chloride Magnesium, Dissolved Sodium, Dissolved Specific Conductivity Sulfate Total Dissolved Solids
<b>Downgradient Wells</b>			
None	Vinyl Chloride	Temperature pH	Alkalinity, Bicarbonate Alkalinity, Total Ammonia Barium, Total Calcium, Dissolved Chloride Iron, Total Magnesium, Dissolved Manganese, Total Sodium, Dissolved Specific Conductivity Sulfate Total Dissolved Solids

**Table 6B. Summary of Trends in Groundwater (2005 - 2017)**  
**2017 Annual Monitoring Report**  
**Olympic View Sanitary Lanfill, Kitsap County, Washington**

**Results of Sen's Non-Parametric Test for Trend**

**Trend Test Period:** January 2005 through December 2017

**Trend Test Wells:**

- Compliance Wells: MW-15R, MW-34A, MW-34C, MW-39, MW-42, MW-43
- Performance Wells: MW-19C\*
- Downgradient Wells: MW-29A\*, MW-32, MW-33A\*, MW-33C\*, MW-36A\*
- Upgradient Wells MW-13A, MW-13B, MW-16, MW-35,

\*sampled semi-annually; trend status shown is most recent available

**Trend Test A** = all organic parameters listed in Appendix I and Appendix II of WAC 173-351-990 that have been detected at least once in at least one of 22 wells comprising the network of 1) compliance, 2) performance, 3) downgradient, and 4) upgradient site monitoring wells, during the trend test period. This includes the following constituents:

	<u>Significant Increasing Trends</u>	<u>Significant Decreasing Trends</u>
1,1-Dichloroethane	None	None
1,2-Dichloroethene (total)	None	None
1,2-Dichlorobenzene	None	None
1,4-Dichlorobenzene	None	None
Acetone	None	None
Benzene	None	None
Carbon Disulfide	None	None
Chlorobenzene	None	None
Chlorodifluoromethane	None	None
Chloroethane	None	None
Chloroform	None	None
Chloromethane	None	None
cis-1,2-dichloroethene	None	None
Dichlorodifluoromethane	None	None
Ethyl Ether	None	None
Methylene Chloride	None	None
Naphthalene	None	None
n-Butyl Alcohol	None	None
tert-Butyl Alcohol	None	None
Tetrachloroethene	None	None
Tetrahydrofuran	None	None
Toluene	None	None
trans-1,2-Dichloroethene	None	None
Trichloroethene	None	MW-19C (graph 389)
		MW-19C (graph 405)
Vinyl Chloride	None	MW-32 (graph 407)
		MW-34C (graph 411)

**Table 6B. Summary of Trends in Groundwater (2005 - 2017)**  
**2017 Annual Monitoring Report**  
**Olympic View Sanitary Lanfill, Kitsap County, Washington**

<b>Trend Test B = all metals and groundwater quality parameters listed in Appendix I and Appendix II of WAC (173-351-990)</b>		
	<u>Significant Increasing Trends</u>	<u>Significant Decreasing Trends</u>
Alkalinity, bicarbonate (as CaCO <sub>3</sub> )	MW-13B (graph 2) MW-35 (graph 12)	MW-15R (graph 3) MW-16 (graph 4) MW-34A (graph 10) MW-34C (graph 11) MW-36A (graph 13)
Alkalinity, total (as CaCO <sub>3</sub> )	MW-13B (graph 18) MW-35 (graph 28)	MW-15R (graph 19) MW-16 (graph 20) MW-34A (graph 26) MW-34C (graph 27) MW-36A (graph 29)
Ammonia (as N)	None	MW-29A (graph 38) MW-43 (graph 48)
Antimony, total	None	None
Arsenic, total	None	MW-19C (graph 69)
Barium, total	None	MW-32 (graph 87)
Beryllium, total	None	None
Cadmium, total	None	None
Calcium, dissolved	None	MW-15R (graph 131) MW-16 (graph 132) MW-29A (graph 134) MW-32 (graph 135) MW-33A (graph 136) MW-34A (graph 138) MW-34C (graph 139) MW-36A (graph 141) MW-43 (graph 144)
Chloride	MW-39 (graph 158)	MW-13B (graph 146) MW-15R (graph 147) MW-16 (graph 148) MW-19C (graph 149) MW-33A (graph 152) MW-34A (graph 154) MW-34C (graph 155) MW-35 (graph 156) MW-36A (graph 157)
Chromium, total	None	None

**Table 6B. Summary of Trends in Groundwater (2005 - 2017)**  
**2017 Annual Monitoring Report**  
**Olympic View Sanitary Lanfill, Kitsap County, Washington**

<b>Trend Test B = all metals and groundwater quality parameters listed in Appendix I and Appendix II of WAC (173-351-990)</b>		
	<u>Significant Increasing Trends</u>	<u>Significant Decreasing Trends</u>
Cobalt, total	None	None
Copper, total	None	None
Iron, total	None	MW-32 (graph 215)
Lead, total	None	None
Magnesium, dissolved	None	MW-15R (graph 243) MW-16 (graph 244) MW-32 (graph 247) MW-33A (graph 248) MW-34A (graph 250) MW-34C (graph 251) MW-42 (graph 255)
Manganese, total	None	MW-32 (graph 263)
Nickel, total	None	None
Nitrate (as N)	MW-35 (graph 300)	None
pH	MW-29A (graph 310) MW-32 (graph 311) MW-34C (graph 315) MW-42 (graph 319)	None
Potassium, dissolved	MW-42 (graph 335)	None
Selenium, total	None	None
Silver, total	None	None
Sodium, dissolved	None	MW-15R (graph 371) MW-19C (graph 373) MW-34A (graph 378) MW-34C (graph 379) MW-36A (graph 381) MW-43 (graph 384)
Specific Conductivity	None	MW-15R (graph 387) MW-19C (graph 389) MW-29A (graph 390) MW-32 (graph 391) MW-33A (graph 392) MW-34A (graph 394) MW-34C (graph 395)

**Table 6B. Summary of Trends in Groundwater (2005 - 2017)**  
**2017 Annual Monitoring Report**  
**Olympic View Sanitary Landfill, Kitsap County, Washington**

<b>Trend Test B = all metals and groundwater quality parameters listed in Appendix I and Appendix II of WAC (173-351-990)</b>		
	<u>Significant Increasing Trends</u>	<u>Significant Decreasing Trends</u>
Sulfate	None	MW-13A (graph 401) MW-13B (graph 402) MW-19C (graph 405) MW-32 (graph 407) MW-36A (graph 413) MW-42 (graph 415) MW-43 (graph 416)
Temperature	MW-15R (graph 419) MW-32 (graph 423) MW-33C (graph 425) MW-34A (graph 426) MW-34C (graph 427) MW-35 (graph 428)	None
Thallium, total	None	None
Total Dissolved Solids	None	MW-15R (graph 451) MW-32 (graph 455) MW-33A (graph 456) MW-34A (graph 458) MW-34C (graph 459)
Total Organic Carbon	None	None
Vanadium, total	None	None
Zinc, total	None	None

**Table 7. Fourth Quarter 2017 Prediction Limit Exceedances  
2017 Annual Monitoring Report  
Olympic View Sanitary Landfill, Kitsap County, Washington**

Well Type	Well Location	Date Sampled	Parameter	Units	Result	Prediction Limit
Compliance	MW-15R	11/14/2017	Barium, total	mg/L	0.0046	0.0045
	MW-34A	11/14/2017	Arsenic, total	ug/L	0.442	0.43
			Sodium, dissolved	mg/L	7.9	6.3
	MW-34C	11/14/2017	Alkalinity, bicarbonate (as caco3)	mg/L	100	96
			Alkalinity, total (as caco3)	mg/L	100	96
			Arsenic, total	ug/L	13.3	0.43
			Barium, total	mg/L	0.09	0.0045
			Calcium, dissolved	mg/L	21	18
			Chloride	mg/L	5.4	4.4
			Iron, total	mg/L	25	0.31
			Manganese, total	mg/L	1.1	0.062
			Sodium, dissolved	mg/L	10	6.3
			Specific conductivity	mS/cm	0.232	0.18
			Total dissolved solids (tds)	mg/L	180	175
			MW-39	11/13/2017	Alkalinity, bicarbonate (as caco3)	mg/L
	Alkalinity, total (as caco3)	mg/L			98	96
	Ammonia (as n)	mg/L			0.47	0.3
	Arsenic, total	ug/L			1.78	0.43
	Barium, total	mg/L			0.012	0.0045
	Chloride	mg/L			5.5	4.4
	Cobalt, total	mg/L			0.0065	0.003
	Iron, total	mg/L			36	0.31
	Manganese, total	mg/L			0.43	0.062
	Sodium, dissolved	mg/L			8.4	6.3
	Specific conductivity	mS/cm			0.262	0.18
	MW-42	11/13/2017			Alkalinity, bicarbonate (as caco3)	mg/L
			Alkalinity, total (as caco3)	mg/L	210	96
			Ammonia (as n)	mg/L	4.5	0.3
			Arsenic, total	ug/L	1.8	0.43
			Barium, total	mg/L	0.11	0.0045
			Calcium, dissolved	mg/L	42	18
			Chloride	mg/L	21	4.4
			Iron, total	mg/L	26	0.31
			Magnesium, dissolved	mg/L	14	11.1509
			Manganese, total	mg/L	4.4	0.062
			Potassium, dissolved	mg/L	8.5	1.2
			Sodium, dissolved	mg/L	20	6.3
			Specific conductivity	mS/cm	0.56	0.18
			Sulfate	mg/L	14	9.9
			Total dissolved solids (tds)	mg/L	290	175
	Total organic carbon (toc)	mg/L	6.8	6		
	MW-43	11/13/2017	Iron, total	mg/L	0.74	0.31
			pH	pH Units	5.62	5.81 - 8.23

**Table 7. Fourth Quarter 2017 Prediction Limit Exceedances  
2017 Annual Monitoring Report  
Olympic View Sanitary Landfill, Kitsap County, Washington**

Well Type	Well Location	Date Sampled	Parameter	Units	Result	Prediction Limit
Downgradient	MW-29A	11/13/2017	Arsenic, total	ug/L	2.13	0.43
			Barium, total	mg/L	0.0076	0.0045
			Iron, total	mg/L	4	0.31
			Manganese, total	mg/L	1.2	0.062
	MW-32	11/15/2017	Alkalinity, bicarbonate (as caco3)	mg/L	110	96
			Alkalinity, total (as caco3)	mg/L	110	96
			Arsenic, total	ug/L	9.74	0.43
			Calcium, dissolved	mg/L	22	18
			Chloride	mg/L	12	4.4
			Iron, total	mg/L	0.62	0.31
			Manganese, total	mg/L	1.9	0.062
			Sodium, dissolved	mg/L	11	6.3
			Specific conductivity	mS/cm	0.263	0.18
			Sulfate	mg/L	10	9.9
			Total dissolved solids (tds)	mg/L	200	175
			MW-33A	11/14/2017	Arsenic, total	ug/L
	Iron, total	mg/L			2.5	0.31
	MW-33C	11/14/2017	Arsenic, total	ug/L	2.67	0.43
			Manganese, total	mg/L	0.15	0.062
			Potassium, dissolved	mg/L	1.3	1.2
MW-36A	11/14/2017	Arsenic, total	ug/L	0.563	0.43	

Notes:

Contents prepared by GeoChem Applications

deg C = degrees Celcius

CaCO3 = calcium carbonate

N = nitrogen

µg/L = micrograms per liter

mg/L = milligrams per liter

mS/cm = milliSiemens per centimeter

**Table 8. 2017 Annual Groundwater Cleanup Level Statistical Evaluation Summary**  
**2017 Annual Monitoring Report**  
**Olympic View Sanitary Landfill, Kitsap County, Washington**

**Statistical Methodology:** calculation of 95% UCL of mean per MTCASat

**Data Input (general):** 3-year "moving window", updated annually

**Data Input (specific):** January 1, 2015 through December 31, 2017

**Wells Evaluated:** (1) Compliance -- MW-15R, MW-34A, MW-34C, MW-39, MW-42, MW-43; (2) Downgradient -- MW-29A, MW-32, MW-33A, MW-33C, MW-36A

Monitoring Well Type	Monitoring Well	Corrective Action Monitoring Parameter	N <sup>[1]</sup>	% Detect	Max <sup>[2]</sup>	95% UCL of Mean <sup>[3]</sup>	Units <sup>[4]</sup>	Note	Groundwater Cleanup Level <sup>[5]</sup>	Units <sup>[4]</sup>	Does 95% UCL Exceed Cleanup Level?	Significant Trend? <sup>[6]</sup>
Compliance	MW-15R	1,1-Dichloroethane	12	0%	0.38 (ND)	0.38	ug/L	B	50	ug/L	No	No
	MW-15R	1,4-Dichlorobenzene	12	0%	0.84 (ND)	0.84	ug/L	B	2.0	ug/L	No	No
	MW-15R	Arsenic, total	12	100.0%	0.258	0.225876	ug/L	LN	0.462	ug/L	No	No
	MW-15R	Iron, total	11[7]	9%	0.11	0.11	mg/L	A	0.30	mg/L	No	No
	MW-15R	Manganese, total	12	100%	0.021	0.007	mg/L	LN	0.05	mg/L	No	No
	MW-15R	cis-1,2-dichloroethene	12	0%	0.81 (ND)	0.81	ug/L	B	35.0	ug/L	No	No
	MW-15R	Ethyl ether	12	0%	0.72 (ND)	0.72	ug/L	B	50.0	ug/L	No	No
	MW-15R	Trichloroethene	12	0%	0.46 (ND)	0.46	ug/L	B	1.0	ug/L	No	No
	MW-15R	Vinyl Chloride	12	0%	0.02 (ND)	0.02	ug/L	B	0.2	ug/L	No	No
	MW-15R	Ammonia as N	12	0%	0.03 (ND)	0.03	mg/L	B	0.19	mg/L	No	No
	MW-34A	1,1-Dichloroethane	12	0%	0.38 (ND)	0.38	ug/L	B	50.0	ug/L	No	No
	MW-34A	1,4-Dichlorobenzene	12	0%	0.84 (ND)	0.84	ug/L	B	2.0	ug/L	No	No
	MW-34A	Arsenic, total	12	100%	0.478	0.451751	ug/L	LN	0.462	ug/L	No	No
	MW-34A	Iron, total	12	8%	0.06	0.06	mg/L	A	0.30	mg/L	No	No
	MW-34A	Manganese, total	12	75%	0.0044	0.002276	mg/L	LN	0.05	mg/L	No	No
	MW-34A	cis-1,2-dichloroethene	12	0%	0.81 (ND)	0.81	ug/L	B	35.0	ug/L	No	No
	MW-34A	Ethyl ether	12	0.0%	0.72 (ND)	0.72	ug/L	B	50.0	ug/L	No	No
	MW-34A	Trichloroethene	12	0%	0.46 (ND)	0.46	ug/L	B	1.0	ug/L	No	No
	MW-34A	Vinyl Chloride	12	0%	0.02 (ND)	0.03	ug/L	B	0.2	ug/L	No	No
	MW-34A	Ammonia as N	12	8.3%	0.035	0.035	mg/L	A	0.19	mg/L	No	No
	MW-34C	1,1-Dichloroethane	12	0%	0.38 (ND)	0.38	ug/L	B	50.0	ug/L	No	No
	MW-34C	1,4-Dichlorobenzene	12	0%	0.84 (ND)	0.84	ug/L	B	2.0	ug/L	No	No
	MW-34C	Arsenic, total	12	100%	84.6	84.6	ug/L	A**	0.462	ug/L	Yes	No
	MW-34C	Iron, total	12	100%	100	154.9827	mg/L	LN	0.30	mg/L	Yes	No
	MW-34C	Manganese, total	12	100%	14	5.492	mg/L	Z	0.05	mg/L	Yes	No
	MW-34C	cis-1,2-dichloroethene	12	0%	0.81 (ND)	0.81	ug/L	B	35.0	ug/L	No	No
	MW-34C	Ethyl ether	12	0%	0.72 (ND)	0.72	ug/L	B	50.0	ug/L	No	No
	MW-34C	Trichloroethene	12	0%	0.46 (ND)	0.46	ug/L	B	1.0	ug/L	No	No
	MW-34C	Vinyl Chloride	12	100%	0.11	0.089265	ug/L	LN	0.2	ug/L	No	Yes (↓)
	MW-34C	Ammonia as N	12	25%	0.034	0.034	mg/L	A	0.19	mg/L	No	No



**Table 8. 2017 Annual Groundwater Cleanup Level Statistical Evaluation Summary**  
**2017 Annual Monitoring Report**  
**Olympic View Sanitary Landfill, Kitsap County, Washington**

Monitoring Well Type	Monitoring Well	Corrective Action Monitoring Parameter	N <sup>[1]</sup>	% Detect	Max <sup>[2]</sup>	95% UCL of Mean <sup>[3]</sup>	Units <sup>[4]</sup>	Note	Groundwater Cleanup Level <sup>[5]</sup>	Units <sup>[4]</sup>	Does 95% UCL Exceed Cleanup Level?	Significant Trend? <sup>[6]</sup>
Compliance	MW-39	1,1-Dichloroethane	12	0%	0.38 (ND)	0.38	ug/L	B	50.0	ug/L	No	No
	MW-39	1,4-Dichlorobenzene	12	0%	0.84 (ND)	0.84	ug/L	B	2.0	ug/L	No	No
	MW-39	Arsenic, total	12	100%	2.16	1.768	ug/L	Z	0.462	ug/L	Yes	No
	MW-39	Iron, total	12	100%	40	33.69	mg/L	Z	0.30	mg/L	Yes	No
	MW-39	Manganese, total	12	100%	0.66	0.456260	mg/L	N	0.05	mg/L	Yes	No
	MW-39	cis-1,2-dichloroethene	12	0%	0.81 (ND)	0.81	ug/L	B	35.0	ug/L	No	No
	MW-39	Ethyl ether	12	0%	0.72 (ND)	0.72	ug/L	B	50.0	ug/L	No	No
	MW-39	Trichloroethene	12	0%	0.46 (ND)	0.46	ug/L	B	1.0	ug/L	No	No
	MW-39	Vinyl Chloride	12	0%	0.02 (ND)	0.02	ug/L	B	0.2	ug/L	No	No
	MW-39	Ammonia as N	12	92%	0.63	0.442	mg/L	Z	0.19	mg/L	Yes	No
	MW-42	1,1-Dichloroethane	12	0%	0.38 (ND)	0.38	ug/L	B	50.0	ug/L	No	No
	MW-42	1,4-Dichlorobenzene	12	0%	0.84 (ND)	0.84	ug/L	B	2.0	ug/L	No	No
	MW-42	Arsenic, total	12	100%	1.93	1.779642	ug/L	LN	0.462	ug/L	Yes	No
	MW-42	Iron, total	12	100%	27	24.90250	mg/L	LN	0.30	mg/L	Yes	No
	MW-42	Manganese, total	12	100%	4.8	4.48634	mg/L	LN	0.05	mg/L	Yes	No
	MW-42	cis-1,2-dichloroethene	12	0%	0.81 (ND)	0.81	ug/L	B	35.0	ug/L	No	No
	MW-42	Ethyl ether	12	0%	0.72 (ND)	0.72	ug/L	B	50.0	ug/L	No	No
	MW-42	Trichloroethene	12	8%	0.58	0.58	ug/L	A	1.0	ug/L	No	No
	MW-42	Vinyl Chloride	12	83%	0.12	0.089677	ug/L	LN	0.2	ug/L	No	No
	MW-42	Ammonia as N	12	100%	6.7	5.88668	mg/L	LN	0.19	mg/L	Yes	No
	MW-43	1,1-Dichloroethane	12	0%	0.38 (ND)	0.38	ug/L	B	50.0	ug/L	No	No
	MW-43	1,4-Dichlorobenzene	12	0%	0.84 (ND)	0.84	ug/L	B	2.0	ug/L	No	No
	MW-43	Arsenic, total	12	17%	0.0562	0.0562	ug/L	A	0.462	ug/L	No	No
	MW-43	Iron, total	12	100%	2.5	1.51239	mg/L	LN	0.30	mg/L	Yes	No
	MW-43	Manganese, total	12	100%	0.12	0.095607	mg/L	N	0.05	mg/L	Yes	No
	MW-43	cis-1,2-dichloroethene	12	0%	0.81 (ND)	0.81	ug/L	B	35.0	ug/L	No	No
	MW-43	Ethyl ether	12	0%	0.72 (ND)	0.72	ug/L	B	50.0	ug/L	No	No
	MW-43	Trichloroethene	12	0%	0.46 (ND)	0.46	ug/L	B	1.0	ug/L	No	No
	MW-43	Vinyl Chloride	12	0%	0.02 (ND)	0.02	ug/L	B	0.2	ug/L	No	No
	MW-43	Ammonia as N	12	67%	0.06	0.045944	mg/L	LN	0.19	mg/L	No	Yes (↓)

**Table 8. 2017 Annual Groundwater Cleanup Level Statistical Evaluation Summary**  
**2017 Annual Monitoring Report**  
**Olympic View Sanitary Landfill, Kitsap County, Washington**

Monitoring Well Type	Monitoring Well	Corrective Action Monitoring Parameter	N <sup>[1]</sup>	% Detect	Max <sup>[2]</sup>	95% UCL of Mean <sup>[3]</sup>	Units <sup>[4]</sup>	Note	Groundwater Cleanup Level <sup>[5]</sup>	Units <sup>[4]</sup>	Does 95% UCL Exceed Cleanup Level?	Significant Trend? <sup>[6]</sup>
Downgradient	MW-29A	1,1-Dichloroethane	6	0%	0.38 (ND)	0.38	ug/L	B	50.0	ug/L	No	No
	MW-29A	1,4-Dichlorobenzene	6	0%	0.84 (ND)	0.84	ug/L	B	2.0	ug/L	No	No
	MW-29A	Arsenic, total	6	100%	2.13	2.0363382	ug/L	LN	0.462	ug/L	Yes	No
	MW-29A	Iron, total	6	100%	4.6	4.257339817	mg/L	LN	0.30	mg/L	Yes	No
	MW-29A	Manganese, total	6	100%	1.4	1.349	mg/L	Z	0.05	mg/L	Yes	No
	MW-29A	cis-1,2-dichloroethene	6	0%	0.81 (ND)	0.81	ug/L	B	35.0	ug/L	No	No
	MW-29A	Ethyl ether	6	0%	0.72 (ND)	0.72	ug/L	B	50.0	ug/L	No	No
	MW-29A	Trichloroethene	6	0%	0.46 (ND)	0.46	ug/L	B	1.0	ug/L	No	No
	MW-29A	Vinyl Chloride	6	0%	0.02 (ND)	0.02	ug/L	B	0.2	ug/L	No	No
	MW-29A	Ammonia as N	6	100%	0.095	0.081	mg/L	Z	0.19	mg/L	No	Yes (↓)
	MW-32	1,1-Dichloroethane	12	0%	0.38 (ND)	0.38	ug/L	B	50.0	ug/L	No	No
	MW-32	1,4-Dichlorobenzene	12	0%	0.84 (ND)	0.84	ug/L	B	2.0	ug/L	No	No
	MW-32	Arsenic, total	12	100%	10.7	10.17932682	ug/L	LN	0.462	ug/L	Yes	No
	MW-32	Iron, total	12	100%	0.94	0.754644313	mg/L	LN	0.30	mg/L	Yes	Yes (↓)
	MW-32	Manganese, total	12	100.0%	2.9	2.257	mg/L	Z	0.05	mg/L	Yes	Yes (↓)
	MW-32	cis-1,2-dichloroethene	12	8%	0.81 (ND)	0.81	ug/L	A*	35.0	ug/L	No	No
	MW-32	Ethyl ether	11	0%	0.72 (ND)	0.72	ug/L	B	50.0	ug/L	No	No
	MW-32	Trichloroethene	12	42%	0.66	0.66	ug/L	A***	1.0	ug/L	No	No
	MW-32	Vinyl Chloride	12	100%	0.46	0.375347756	ug/L	LN	0.2	ug/L	Yes	Yes (↓)
	MW-32	Ammonia as N	11	18%	0.039	0.039	mg/L	A	0.19	mg/L	No	No
	MW-33A	1,1-Dichloroethane	6	0%	0.38 (ND)	0.38	ug/L	B	50.0	ug/L	No	No
	MW-33A	1,4-Dichlorobenzene	6	0%	0.84 (ND)	0.84	ug/L	B	2.0	ug/L	No	No
	MW-33A	Arsenic, total	6	100%	0.61	0.618161214	ug/L	LN	0.462	ug/L	Yes	No
	MW-33A	Iron, total	6	100%	2.5	2.249	mg/L	Z	0.30	mg/L	Yes	No
	MW-33A	Manganese, total	6	100%	0.094	0.201921557	mg/L	LN	0.05	mg/L	Yes	No
	MW-33A	cis-1,2-dichloroethene	6	0%	0.81 (ND)	0.81	ug/L	B	35.0	ug/L	No	No
	MW-33A	Ethyl ether	6	0%	0.72 (ND)	0.72	ug/L	B	50.0	ug/L	No	No
	MW-33A	Trichloroethene	6	0%	0.46 (ND)	0.46	ug/L	B	1.0	ug/L	No	No
	MW-33A	Vinyl Chloride	6	0%	0.02 (ND)	0.02	ug/L	B	0.2	ug/L	No	No
	MW-33A	Ammonia as N	6	50%	0.3	0.3	mg/L	A	0.19	mg/L	Yes	No

**Table 8. 2017 Annual Groundwater Cleanup Level Statistical Evaluation Summary  
2017 Annual Monitoring Report  
Olympic View Sanitary Landfill, Kitsap County, Washington**

Monitoring Well Type	Monitoring Well	Corrective Action Monitoring Parameter	N <sup>[1]</sup>	% Detect	Max <sup>[2]</sup>	95% UCL of Mean <sup>[3]</sup>	Units <sup>[4]</sup>	Note	Groundwater Cleanup Level <sup>[5]</sup>	Units <sup>[4]</sup>	Does 95% UCL Exceed Cleanup Level?	Significant Trend? <sup>[6]</sup>
Downgradient	MW-33C	1,1-Dichloroethane	10	0%	0.38 (ND)	0.38	ug/L	B	50.0	ug/L	No	No
	MW-33C	1,4-Dichlorobenzene	10	0%	0.84 (ND)	0.84	ug/L	B	2.0	ug/L	No	No
	MW-33C	Arsenic, total	10	100%	2.67	2.595211477	ug/L	LN	0.462	ug/L	Yes	No
	MW-33C	Iron, total	10	80%	0.33	0.289964257	mg/L	LN	0.30	mg/L	No	No
	MW-33C	Manganese, total	10	100%	0.29	0.211	mg/L	Z	0.05	mg/L	Yes	No
	MW-33C	cis-1,2-dichloroethene	10	0%	0.81 (ND)	0.81	ug/L	B	35.0	ug/L	No	No
	MW-33C	Ethyl ether	10	0%	0.72 (ND)	0.72	ug/L	B	50.0	ug/L	No	No
	MW-33C	Trichloroethene	10	0%	0.46 (ND)	0.46	ug/L	B	1.0	ug/L	No	No
	MW-33C	Vinyl Chloride	10	0%	0.02 (ND)	0.02	ug/L	B	0.2	ug/L	No	No
	MW-33C	Ammonia as N	10	0%	0.03 (ND)	0.03	mg/L	B	0.19	mg/L	No	No
	MW-36A	1,1-Dichloroethane	10	0%	0.38 (ND)	0.38	ug/L	B	50.0	ug/L	No	No
	MW-36A	1,4-Dichlorobenzene	10	0%	0.84 (ND)	0.84	ug/L	B	2.0	ug/L	No	No
	MW-36A	Arsenic, total	10	100.0%	0.616	0.579687476	ug/L	LN	0.462	ug/L	Yes	No
	MW-36A	Iron, total	10	40%	0.11	0.11	mg/L	A	0.30	mg/L	No	No
	MW-36A	Manganese, total	10	70%	0.0034	0.0034	mg/L	A***	0.05	mg/L	No	No
	MW-36A	cis-1,2-dichloroethene	10	0%	0.81 (ND)	0.81	ug/L	B	35.0	ug/L	No	No
	MW-36A	Ethyl ether	10	0%	0.72 (ND)	0.72	ug/L	B	50.0	ug/L	No	No
	MW-36A	Trichloroethene	10	0%	0.46 (ND)	0.46	ug/L	B	1.0	ug/L	No	No
	MW-36A	Vinyl Chloride	10	0%	0.02 (ND)	0.02	ug/L	B	0.2	ug/L	No	No
	MW-36A	Ammonia as N	10	10%	0.03	0.03	mg/L	A	0.19	mg/L	No	No

**NOTES:**

[1] N = number of data points used for UCL calculation of the mean; only SIM results used for Vinyl Chloride (e.g., duplicate results with higher RLs by non-SIM were omitted).

[2] MAX = maximum detected result in the data set; if no detected results, then = maximum reporting limit for non-detect results (indicated with ND).

[3] A 3-year moving data set is used for calculation of the UCL.

[4] ug/L - micrograms per liter; mg/L = milligrams per liter.

[5] Groundwater Cleanup Levels are listed on Table 3 of the October 2010 Draft Cleanup Action Plan.

[6] Trend analysis results are based on data for the period January 2005 through December 2017; arrows indicated increasing (p) or decreasing (q) trends.

[7] For MW-15R, outlier of 0.41 mg/L from 2-24-15 sampling event was removed prior to UCL calculation

A = Detection frequency of data set too low and/or N too few to calculate 95% UCL of mean; therefore, the highest detected result in the data set used to represent 95% UCL of mean.

A\* = Same as note "A" except that the highest value in the data set is below the reporting limit of one or more non-detected results; therefore, the highest reporting limit is used to represent the 95% UCL of the mean.

A\*\* = MTCASat suggests use of lognormal formula but calculation of 95% UCL of mean by Land's formula provides unrealistic result; therefore, the highest detected result is used to represent the 95% UCL of the mean.

A\*\*\* = MTCASat suggests use of the Z-score method but then cites inability to calculate due to presence of censored values; therefore, the highest detected result is used to represent the 95% UCL of the mean.

B = Detection frequency = 0; therefore, the highest reporting limit in the data set is used to represent the 95% UCL of mean.

LN = The 95% UCL of the mean is calculated using Land's formula since lognormal distribution is indicated.

N = The 95% UCL of the mean is calculated using a normal-based t-statistic since a normal distribution is indicated.

Z = the 95% UCL of the mean is calculated using the Z-score method in MTCASat since neither normal nor lognormal distribution can be determined.



**Table 9. Groundwater Quality Criteria and Site-Specific Cleanup Level Exceedances  
2017 Annual Monitoring Report  
Olympic View Sanitary Landfill, Kitsap County, Washington**

Comparison Criteria		Field Parameters	General Chemistry					VOCs		
		pH (SU)	Ammonia (mg N/L)	Arsenic, Total (mg/L)	Iron, Dissolved (mg/L)	Iron, Total (mg/L)	Manganese, Dissolved (mg/L)	Manganese, Total (mg/L)	TCE (µg/L)	Vinyl Chloride (µg/L)
WAC 173-200		6.5 < > 8.5	10	0.00005	0.3	0.3	0.05	0.05	3	0.02
Primary Federal MCL		--	--	0.01	--	--	--	--	5	2
Secondary Federal MCL		6.5 < > 8.5	--	--	0.3	0.3	0.05	0.05	--	--
Site-specific MTCA Cleanup Levels		--	0.19	0.000462	--	--	--	--	1	0.2
<b>Well, Location, and Sample Ev</b>										
Upgradient Monitoring Locations	MW-13A	Q1 2017	--	--	0.000201	--	--	--	--	--
		Q2 2017	--	--	0.000181	--	--	--	--	--
		Q3 2017	--	--	0.000191	--	--	--	--	--
		Q4 2017	--	--	0.000193	--	--	--	--	--
	MW-13B	Q1 2017	--	--	0.000324	--	--	--	--	--
		Q2 2017	--	--	0.000327	--	--	--	--	--
		Q3 2017	--	--	0.000338	--	--	--	--	--
		Q4 2017	--	--	0.000311	--	--	--	--	--
	MW-16	Q1 2017	6.42	--	0.000383	--	--	--	--	--
		Q2 2017	6.35	--	0.000375	--	--	--	--	--
		Q3 2017	6.17	--	0.000353	--	--	--	--	--
		Q4 2017	6.35	--	0.000364	--	--	--	--	--
	MW-35	Q1 2017	--	--	0.00012	--	--	--	--	--
		Q2 2017	--	--	0.000134	--	--	--	--	--
		Q3 2017	--	--	0.000114	--	--	--	--	--
		Q4 2017	--	--	0.000107	--	--	--	--	--
MW-19C	Q2 2017	--	0.47	0.00250	--	--	0.87	0.88	--	
	Q4 2017	--	0.46	0.00294	--	--	1.2	1.2	1.2	
Compliance Monitoring Locations	MW-15R	Q1 2017	--	--	0.000258	--	--	--	--	
		Q2 2017	--	--	0.000238	--	--	--	--	
		Q3 2017	6.45	--	0.000191	--	--	--	--	
		Q4 2017	--	--	0.000240	--	--	--	--	
	MW-34A	Q1 2017	6.09	--	0.000407	--	--	--	--	
		Q2 2017	5.80	--	0.000478	--	--	--	--	
		Q3 2017	5.76	--	0.000472	--	--	--	--	
		Q4 2017	5.89	--	0.000442	--	--	--	--	
	MW-34C	Q1 2017	--	--	0.00796	0.67	12	0.52	0.67	0.064
		Q2 2017	--	--	0.00188	0.53	1.6	0.51	0.53	0.056
		Q3 2017	--	--	0.0252	0.59	33 B	0.56	2.0	0.058
		Q4 2017	--	--	0.0133	0.58	25	0.59	1.1	0.033
	MW-39	Q1 2017	5.93	--	0.000427	4.9	5.6	0.071	0.077	--
		Q2 2017	--	0.63	0.00187	32	33	0.75	0.66	--
		Q3 2017	6.47	0.39	0.00178	33	33	0.44	0.43	--
		Q4 2017	6.26	0.47	0.00178	34	36	0.46	0.43	--
MW-42	Q1 2017	--	5.20	0.00162	23	21	4.0	4.0	--	
	Q2 2017	--	4.10	0.00175	19	23	3.3	3.8	--	
	Q3 2017	--	5.00	0.00182	22	24 B	4.2	4.2	0.051	
	Q4 2017	--	4.50	0.00180	23	26	4.3	4.4	0.031	
MW-43	Q1 2017	5.89	--	--	0.66	2.5	0.14	0.10	--	
	Q2 2017	5.89	--	0.000562	--	1.8	0.064	0.071	--	
	Q3 2017	5.50	--	--	--	0.73 B	0.053	0.053	--	
	Q4 2017	5.62	--	--	--	0.74	--	--	--	
Down Gradient Monitoring	MW-32	Q1 2017	--	--	0.0103	0.49	0.53	1.7	1.8	0.29
		Q2 2017	--	--	0.0106	0.51	0.81	1.8	2.0	0.18
		Q3 2017	--	--	0.00984	0.48	0.59 B	1.6	1.6	0.28
		Q4 2017	--	--	0.00974	0.56	0.62	1.8	1.9	0.37
	MW-29A	Q2 2017	--	--	0.00184	3.4	3.8	1.1	1.2	--
		Q4 2017	6.26	--	0.00213	3.5	4.0	1.1	1.2	--
	MW-33A	Q2 2017	--	--	0.000334	--	1.6	--	--	--
		Q4 2017	6.33	--	0.00061	--	2.5	--	--	--
MW-33C	Q2 2017	--	--	0.00251	--	--	0.15	0.14	--	
	Q4 2017	--	--	0.00267	--	--	0.14	0.15	--	
MW-36A	Q2 2017	6.22	--	0.000616	--	--	--	--	--	
	Q4 2017	5.91	--	0.000563	--	--	--	--	--	

**Notes:**

SU = standard units  
mg N/L = milligrams of Nitrogen per liter  
mg/L = milligrams per liter  
µg/L = micrograms per liter

0.00141 = exceeds Site-specific MTCA Cleanup Levels  
0.035 = exceeds WAC 173-200 Groundwater Quality Criteria  
6.44 = exceeds Federal MCL and WAC 173-200 Groundwater Quality Criteria  
0.0014 = exceeds Federal MCLs, Site-specific MTCA Cleanup Levels, and WAC 173-200 Criteria

TCE = Trichloroethene



**Table 10. Cumulative 2017 Leak Detection System Volumes  
2017 Annual Monitoring Report  
Olympic View Sanitary Landfill, Kitsap County, Washington**

<b>Date</b>	<b>Total Volume (Gals)</b>	<b>Comments</b>
1/30/2017	210	Pumped dry
2/20/2017	0	Leak dection sampling, no pumping or volume measurement recorded
3/27/2017	60	Pumped dry
4/15/2017	0	No volume measurement made
5/30/2017	170	Pumped dry, leak dection sample collected
6/26/2017	145	Pumped dry
7/31/2017	0	Dry, no volume measurement recorded
8/21/2017	250	Pumped dry, leak dection sample collected
9/28/2017	275	Pumped dry
10/23/2017	230	Pumped dry
11/21/2017	390	Pumped dry
11/28/2017	0	Leak dection sampling, no pumping or volume measurement recorded
<b>TOTAL</b>	<b>1730</b>	<b>Volume for period between 1/1/2017 through 12/31/2017.</b>

Notes:

"No volume measurement made" indicates that the LP-LCD volume present was not pumped so adequate volume would be available for sampling.

**Table 11. Fourth Quarter 2017 Landfill Gas Measurement Results  
2017 Annual Monitoring Report  
Olympic View Sanitary Landfill, Kitsap County Washington**

Waste Management Incorporated																												
Instrument Readings							Comments																					
Location Reference Designation	Date	Time	Pressure (in H <sub>2</sub> O)	CH <sub>4</sub> (% vol.)	CO <sub>2</sub> (% vol.)	O <sub>2</sub> (% vol.)	CH <sub>4</sub> Spike Note 1 (% vol.)	CO <sub>2</sub> Spike Note 1 (% vol.)	Depth to Water TOP (ft)	Exposed Portion of Perforations Notes 2 & 3 (ft) (%)		Other																
<b>Subsurface Landfill Gas Detection Wells (Gas Probes):</b>																												
GP-7	11/22/17	8:23	0.00	0.00	0.00	0.00			10.6	0.0	0%	Note 3																
GP-8	11/22/17	8:31	0.06	0.00	3.70	10.00			15.6	2.8	56%																	
GP-9S	11/22/17	8:36	-0.02	0.00	2.00	18.90																						
GP-9D	11/22/17	8:40	-0.01	0.00	1.60	19.20			31.1	4.8	96%																	
GP-10S	11/22/17	8:48	-0.01	0.00	0.90	20.20																						
GP-10D	11/22/17	8:53	-0.01	0.00	0.70	19.70			28.7	4.6	92%																	
GP-11S	11/22/17	9:08	0.01	0.00	2.70	18.90																						
GP-11D	11/22/17	9:04	0.00	0.00	0.00	0.00			22.4	0.0	0%	Note 3																
GP-12S	11/22/17	9:15	-0.06	0.00	1.30	19.70																						
GP-12M	11/22/17	9:20	-0.03	0.00	1.20	19.70																						
GP-12D	11/22/17	9:24	0.00	0.00	0.00	0.00			43.9	0.0	0%	Note 3																
GP-13S	11/22/17	9:41	-0.02	0.00	3.40	17.70																						
GP-13M	11/22/17	9:45	-0.02	0.00	3.60	17.40																						
GP-13D	11/22/17	9:51	-0.04	0.00	0.00	21.20			49.8	4.6	46%																	
GP-14	11/22/17	9:57	0.04	0.00	6.50	7.60			15.3	4.9	99%																	
GP-15	11/22/17	10:06	-0.01	0.50	5.80	0.10			14.4	4.0	80%																	
GP-16	11/22/17	10:18	-0.10	0.00	2.80	17.80			12.7	2.5	50%																	
<b>Onsite Building Interiors:</b>																												
SH-SS	11/22/17	9:32	--	0.00	0.00	20.90																						
SH-NS	11/22/17	9:34	--	0.00	0.00	21.00																						
SH-IN	11/22/17	9:35	--	0.00	0.00	21.00																						
SS-WH	11/22/17	10:29	--	0.00	0.00	20.90																						
EL-SH	11/22/17	10:34	--	0.00	0.00	20.90																						
TL-OF	11/22/17	10:37	--	0.00	0.00	20.90																						
<p align="center">Weather Conditions</p> <table border="0"> <tr> <td>Monitoring Date:</td> <td>11/22/17</td> <td>Sky Cover:</td> <td>Overcast</td> </tr> <tr> <td>Monitored By:</td> <td>Steve Harquail</td> <td>Wind/Rain/Snow:</td> <td>Light Rain</td> </tr> <tr> <td>Instrument:</td> <td>GEM 2NAV</td> <td>Temperature (°F):</td> <td>58</td> </tr> <tr> <td>Calibration Date:</td> <td>11/22/17</td> <td>Preceding 24-hr Barometric Trend:</td> <td>Dropping</td> </tr> </table>													Monitoring Date:	11/22/17	Sky Cover:	Overcast	Monitored By:	Steve Harquail	Wind/Rain/Snow:	Light Rain	Instrument:	GEM 2NAV	Temperature (°F):	58	Calibration Date:	11/22/17	Preceding 24-hr Barometric Trend:	Dropping
Monitoring Date:	11/22/17	Sky Cover:	Overcast																									
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Instrument:	GEM 2NAV	Temperature (°F):	58																									
Calibration Date:	11/22/17	Preceding 24-hr Barometric Trend:	Dropping																									
<p>Notes:</p> <ol style="list-style-type: none"> <li>1. Measurement for spike concentrations of CH<sub>4</sub> and CO<sub>2</sub> are recorded if observed during sampling.</li> <li>2. Exposed perforations = perforated pipe section not submerged by water.</li> <li>3. Readings not reported: Screened interval completely submerged.</li> <li>4. Depth to water measurement not taken this quarter.</li> </ol>																												
<table border="0"> <tr> <td>CH<sub>4</sub> = Methane</td> <td>SH-SS = Scale House - South Side Exterior</td> </tr> <tr> <td>CO<sub>2</sub> = Carbon Dioxide</td> <td>SH-NS = Scale House - North Side Exterior</td> </tr> <tr> <td>O<sub>2</sub> = Oxygen</td> <td>SH-Of = Scale House - Office Interior</td> </tr> <tr> <td>GP = Gas Probe</td> <td>SS-WH = South Slope Well House</td> </tr> <tr> <td>S = Shallow Monitoring Zone</td> <td>-- = Measurements not taken</td> </tr> <tr> <td>M = Middle Monitoring Zone</td> <td>Depressed O<sub>2</sub> &lt; 20.3% vol.</td> </tr> <tr> <td>D = Deep Monitoring Zone</td> <td>Detected CO<sub>2</sub> &gt; 0.3 % vol.</td> </tr> <tr> <td>TOP = From Top of Pipe</td> <td>Detected CH<sub>4</sub> &gt; 0.3 % vol.</td> </tr> </table>													CH <sub>4</sub> = Methane	SH-SS = Scale House - South Side Exterior	CO <sub>2</sub> = Carbon Dioxide	SH-NS = Scale House - North Side Exterior	O <sub>2</sub> = Oxygen	SH-Of = Scale House - Office Interior	GP = Gas Probe	SS-WH = South Slope Well House	S = Shallow Monitoring Zone	-- = Measurements not taken	M = Middle Monitoring Zone	Depressed O <sub>2</sub> < 20.3% vol.	D = Deep Monitoring Zone	Detected CO <sub>2</sub> > 0.3 % vol.	TOP = From Top of Pipe	Detected CH <sub>4</sub> > 0.3 % vol.
CH <sub>4</sub> = Methane	SH-SS = Scale House - South Side Exterior																											
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O <sub>2</sub> = Oxygen	SH-Of = Scale House - Office Interior																											
GP = Gas Probe	SS-WH = South Slope Well House																											
S = Shallow Monitoring Zone	-- = Measurements not taken																											
M = Middle Monitoring Zone	Depressed O <sub>2</sub> < 20.3% vol.																											
D = Deep Monitoring Zone	Detected CO <sub>2</sub> > 0.3 % vol.																											
TOP = From Top of Pipe	Detected CH <sub>4</sub> > 0.3 % vol.																											



**Table 12. Landfill Gas Monitoring Results - 2017**  
**2017 Annual Monitoring Report**  
**Olympic View Sanitary Landfill, Kitsap County, Washington**

Location	Date	Pressure (in. H <sub>2</sub> O)	CH <sub>4</sub> (% vol.)	CO <sub>2</sub> (% vol.)	O <sub>2</sub> (% vol.)
GP-7	3/17/2017	—	—	—	—
	5/30/2017	0.00	0.0	4.5	4.6
	8/28/2017	0.05	0.0	8.9	7.8
	11/22/2017	—	—	—	—
GP-8	3/17/2017	-0.88	0.0	1.2	8.8
	5/30/2017	0.00	0.0	1.1	13.3
	8/28/2017	0.02	0.0	4.8	8.6
	11/22/2017	0.06	0.0	3.7	10.0
GP-9S	3/17/2017	0.00	0.0	1.7	18.2
	5/30/2017	0.00	0.0	2.3	18.3
	8/28/2017	-0.02	0.0	2.2	18.7
	11/22/2017	-0.02	0.0	2.0	18.9
GP-9D	3/17/2017	—	—	—	—
	5/30/2017	—	—	—	—
	8/28/2017	-0.02	0.0	1.1	18.5
	11/22/2017	-0.01	0.0	1.6	19.2
GP-10S	3/17/2017	0.00	0.0	0.6	20.0
	5/30/2017	-0.02	0.0	0.8	20.2
	8/28/2017	0.00	0.0	0.7	20.1
	11/22/2017	-0.01	0.0	0.9	20.2
GP-10D	3/17/2017	0.05	0.0	0.7	18.1
	5/30/2017	0.00	0.0	0.6	18.6
	8/28/2017	-0.01	0.0	0.5	18.9
	11/22/2017	-0.01	0.0	0.7	19.7
GP-11S	3/17/2017	0.00	0.0	0.0	0.0
	5/30/2017	-0.03	0.0	3.2	17.5
	8/28/2017	-0.01	0.0	3.0	18.1
	11/22/2017	0.01	0.0	2.7	18.9
GP-11D	3/17/2017	—	—	—	—
	5/30/2017	—	—	—	—
	8/28/2017	—	—	—	—
	11/22/2017	—	—	—	—
GP-12S	3/17/2017	0.15	0.0	1.1	19.7
	5/30/2017	-0.05	0.0	1.0	19.9
	8/28/2017	0.02	0.0	1.0	16.4
	11/22/2017	-0.06	0.0	1.3	19.7
GP-12M	3/17/2017	0.00	0.0	1.4	19.1
	5/30/2017	-0.04	0.0	2.5	19.2
	8/28/2017	0.04	0.0	1.2	16.4
	11/22/2017	-0.03	0.0	1.2	19.7
GP-12D	3/17/2017	—	—	—	—
	5/30/2017	—	—	—	—
	8/28/2017	—	—	—	—
	11/22/2017	—	—	—	—

**Table 12. Landfill Gas Monitoring Results - 2017**  
**2017 Annual Monitoring Report**  
**Olympic View Sanitary Landfill, Kitsap County, Washington**

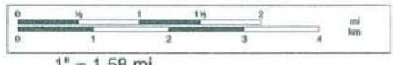
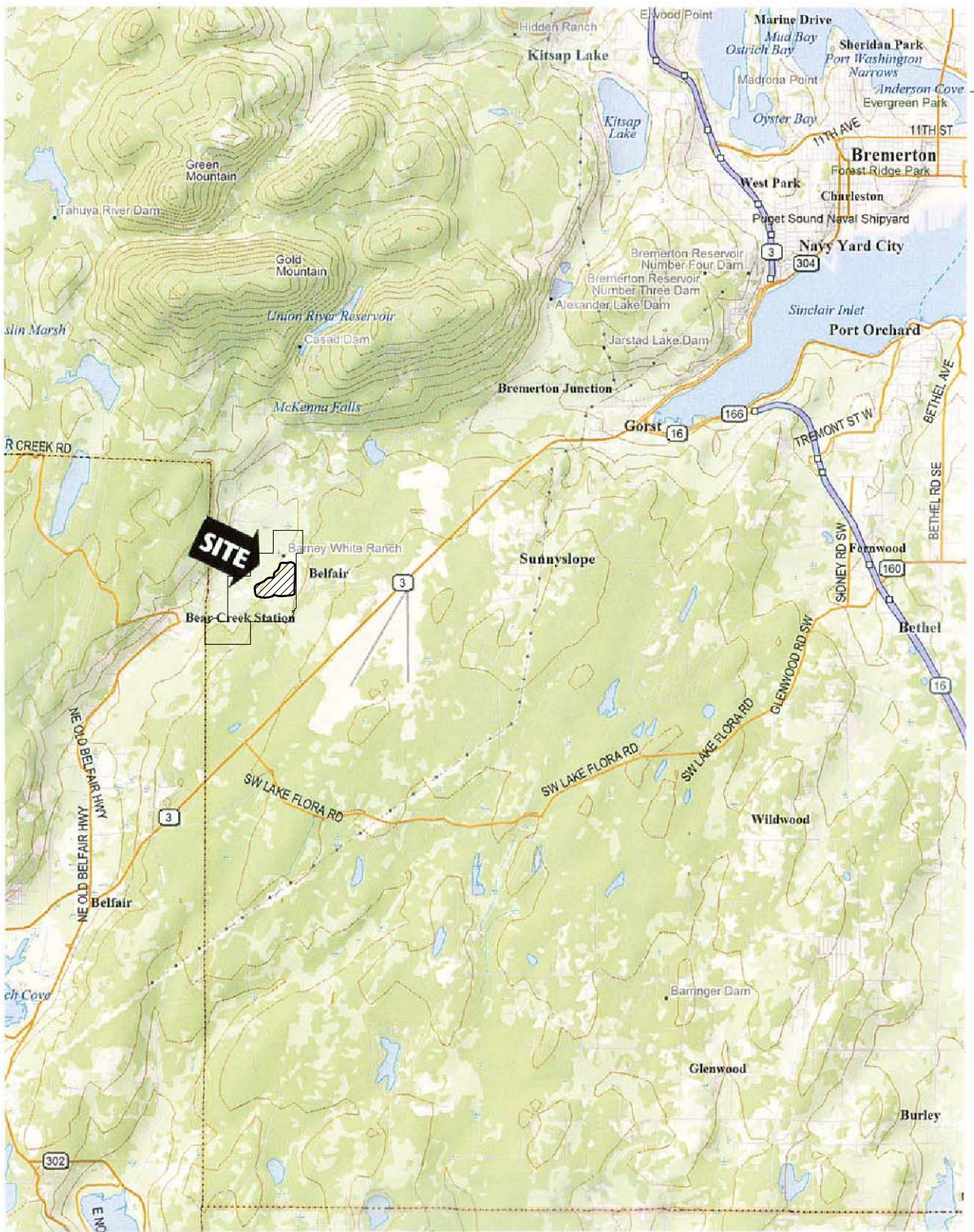
Location	Date	Pressure (in. H <sub>2</sub> O)	CH <sub>4</sub> (% vol.)	CO <sub>2</sub> (% vol.)	O <sub>2</sub> (% vol.)
GP-13S	3/17/2017	0.08	0.0	3.4	17.7
	5/30/2017	-0.02	0.0	3.5	17.2
	8/28/2017	-0.02	0.0	3.2	17.3
	11/22/2017	-0.02	0.0	3.4	17.7
GP-13M	3/17/2017	0.50	0.0	3.3	17.0
	5/30/2017	-0.03	0.0	3.2	16.3
	8/28/2017	-0.01	0.0	2.4	17.0
	11/22/2017	-0.02	0.0	3.6	17.4
GP-13D	3/17/2017	0.00	0.0	0.0	0.0
	5/30/2017	—	—	—	—
	8/28/2017	0.00	0.0	2.9	16.1
	11/22/2017	-0.04	0.0	0.0	21.2
GP-14	3/17/2017	0.00	0.0	3.4	6.7
	5/30/2017	-0.03	0.0	4.7	6.5
	8/28/2017	-0.01	0.0	6.3	8.0
	11/22/2017	0.04	0.0	6.5	7.6
GP-15	3/17/2017	0.23	0.0	4.2	1.1
	5/30/2017	-0.37	0.0	3.7	10.4
	8/28/2017	-0.01	0.0	1.6	16.1
	11/22/2017	-0.01	0.5	5.8	0.1
GP-16	3/17/2017	0.00	0.0	1.6	19.2
	5/30/2017	0.00	0.0	1.5	18.7
	8/28/2017	0.01	0.0	2.3	19.0
	11/22/2017	-0.10	0.0	2.8	17.8

Notes:

— Readings not reported: screened interval submerged

## FIGURES



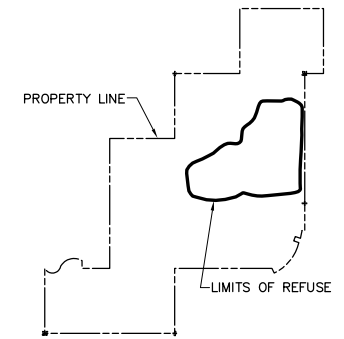
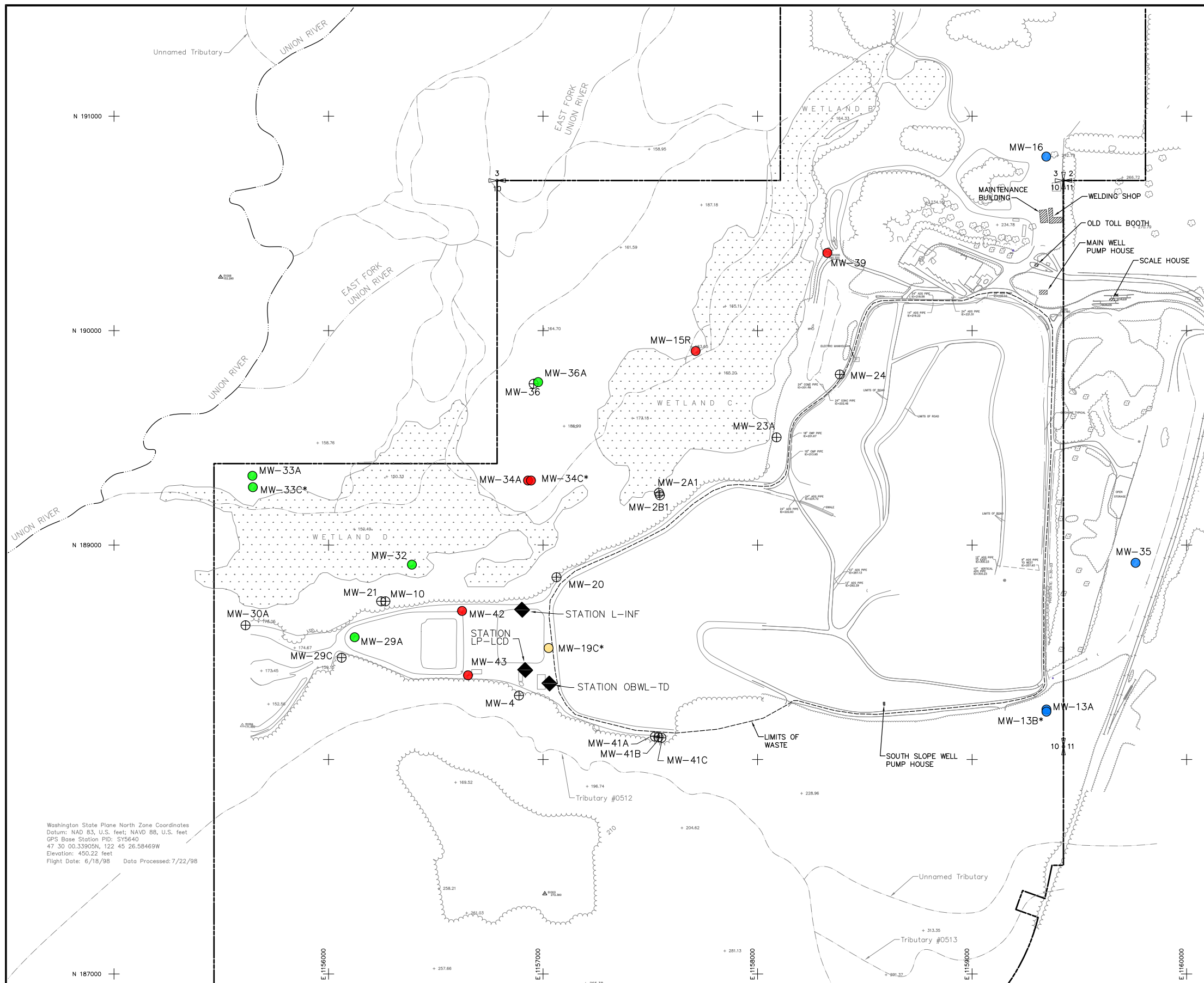


© 2004 DeLorme. Topo USA® 5.0.

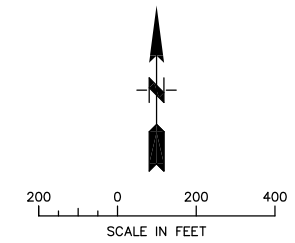
<b>SCS ENGINEERS</b> Environmental Consultants and Contractors 2405 140th Avenue NE, Suite 107 Bellevue, Washington 98005 (425) 746-4600 FAX: (425) 746-6747	PROJECT NO. 04204027.21	DES BY L.L.	SITE LOCATION MAP  OLYMPIC VIEW SANITARY LANDFILL KITSAP COUNTY, WASHINGTON	DATE FEBRUARY 2018
	SCALE 1:100,000	CHK BY D.V.		FIGURE
	CAD FILE FIGURE 1	APP BY G.H.		<b>1</b>







LEGEND	
<span style="color: blue;">●</span> MW-35	UPGRADIENT (BACKGROUND) GROUNDWATER MONITORING WELL
<span style="color: green;">●</span> MW-32	DOWNGRADIENT GROUNDWATER MONITORING WELL
<span style="color: orange;">●</span> MW-19C	PERFORMANCE GROUNDWATER MONITORING WELL
<span style="color: red;">●</span> MW-43	COMPLIANCE GROUNDWATER MONITORING WELL
⊕ MW-10	GROUNDWATER MONITORING WELL (WATER LEVEL ONLY)
MW-32	SHALLOW MONITORING WELL
*	DEEP MONITORING WELL
L-INF	LEACHATE MONITORING STATION
—	PROPERTY LINE (ASSUMED)



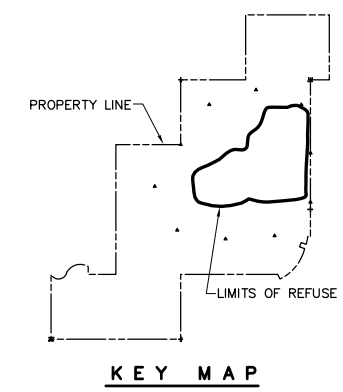
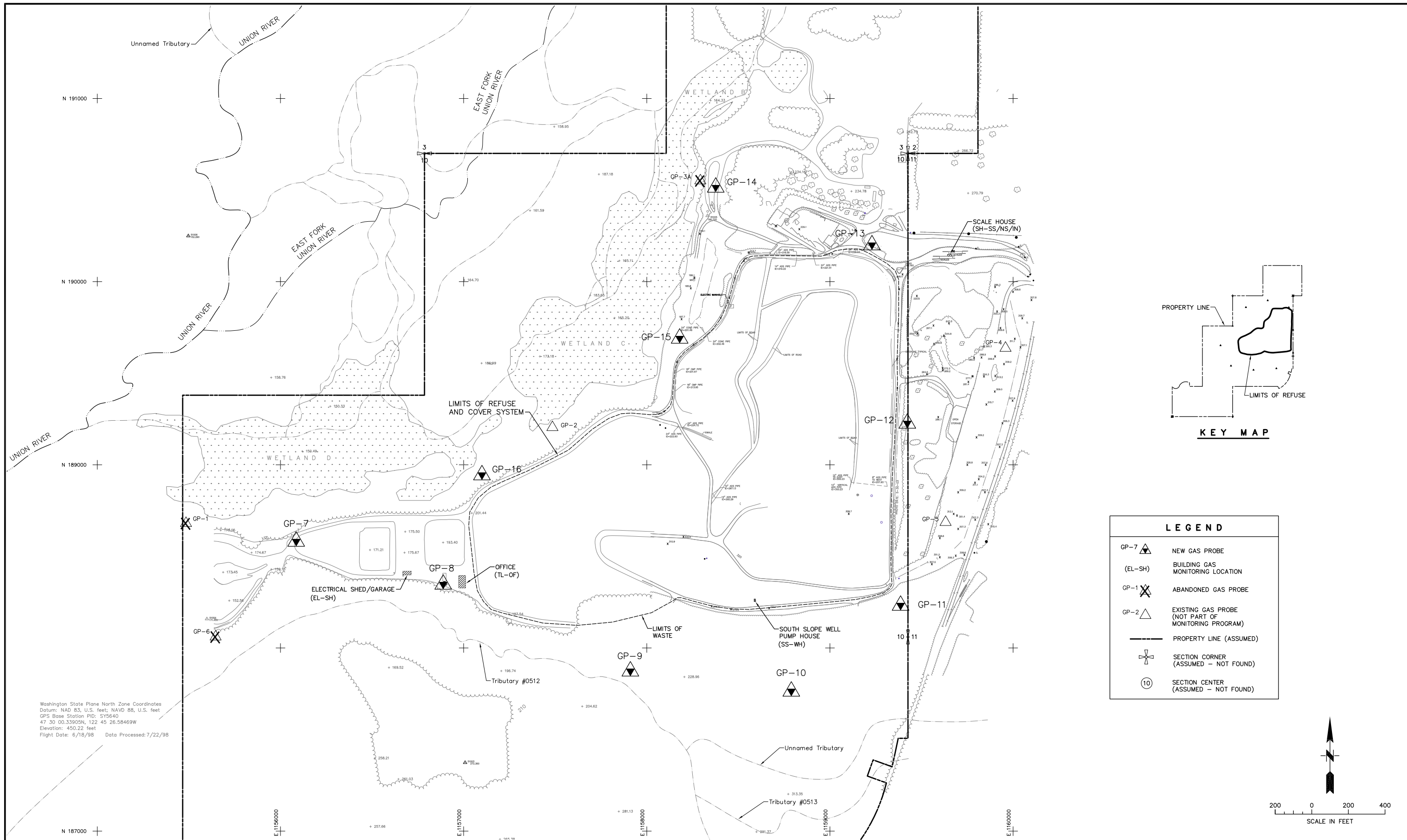
Washington State Plane North Zone Coordinates  
 Datum: NAD 83, U.S. feet; NAVD 88, U.S. feet  
 GPS Base Station PID: SY9640  
 47 30 00.33905N, 122 45 26.58469W  
 Elevation: 450.22 feet  
 Flight Date: 6/18/98 Data Processed: 7/22/98

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 Bellevue, Washington 98005  
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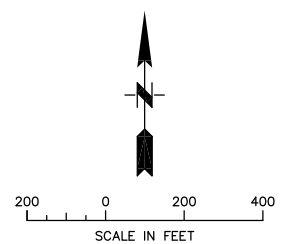
PROJECT NO.	04204027.21	DES BY	S.G.
SCALE	AS SHOWN	CHK BY	D.V.
CAD FILE	FIGURE 2	APP BY	G.H.

GROUNDWATER MONITORING WELL NETWORK  
 AND LEACHATE MONITORING LOCATIONS  
 OLYMPIC VIEW SANITARY LANDFILL  
 KITSAP COUNTY, WASHINGTON

DATE  
 FEBRUARY 2018  
 FIGURE  
**2**



LEGEND	
GP-7 ▲	NEW GAS PROBE
(EL-SH)	BUILDING GAS MONITORING LOCATION
GP-1 ✕	ABANDONED GAS PROBE
GP-2 △	EXISTING GAS PROBE (NOT PART OF MONITORING PROGRAM)
---	PROPERTY LINE (ASSUMED)
+	SECTION CORNER (ASSUMED - NOT FOUND)
⊙	SECTION CENTER (ASSUMED - NOT FOUND)



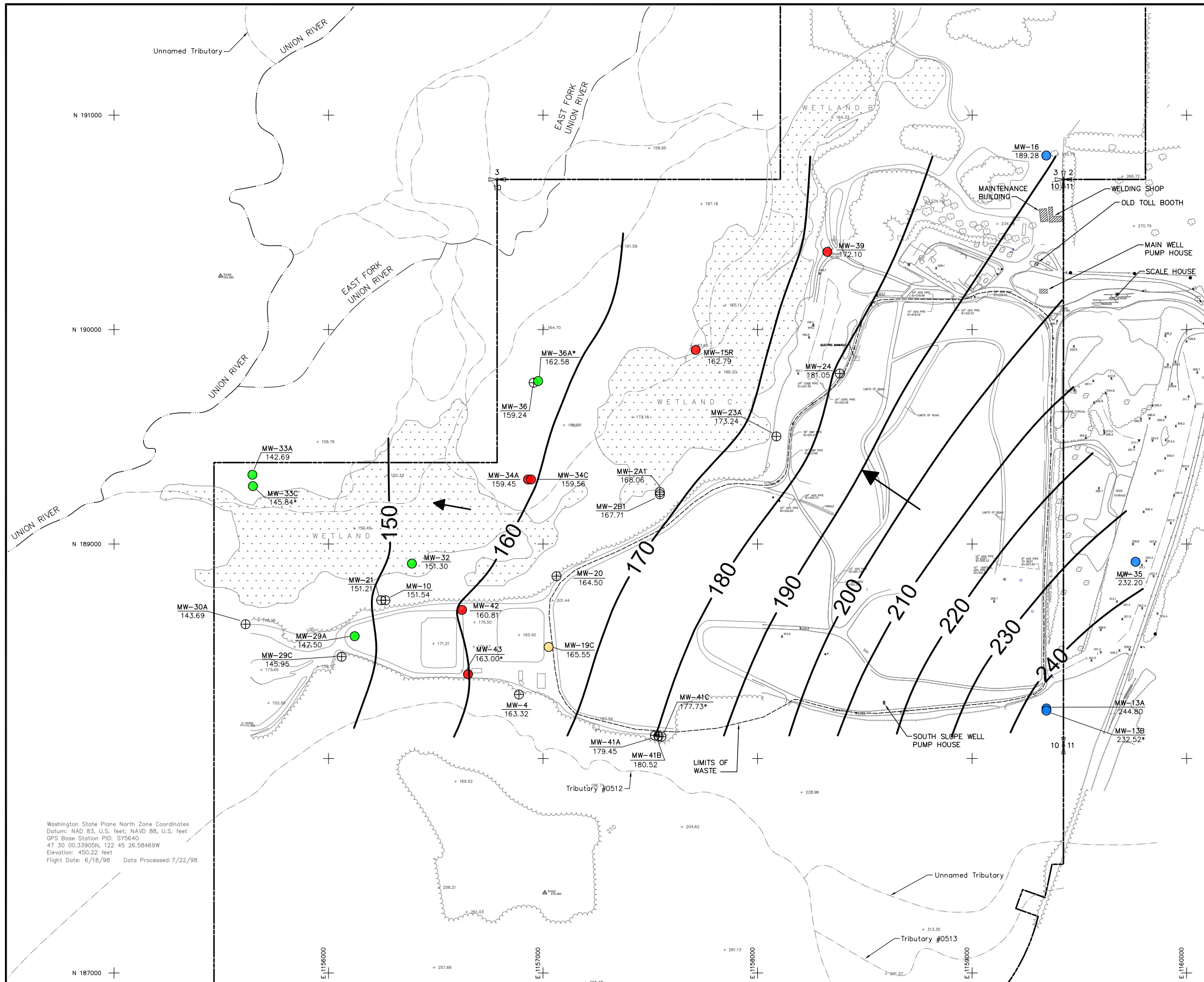
**SCS ENGINEERS**  
 Environmental Consultants and Contractors  
 2405 140th Avenue NE, Suite 107  
 Bellevue, Washington 98005  
 (425) 746-4600 FAX: (425) 746-6747

PROJECT NO.	04204027.21	DES BY	T.M.
SCALE	AS SHOWN	CHK BY	L.L.
CAD FILE	FIGURE 3	APP BY	D.V.

SUBSURFACE GAS MIGRATION MONITORING PROBES  
 AND BUILDING MONITORING LOCATIONS  
 OLYMPIC VIEW SANITARY LANDFILL  
 PORT ORCHARD, WASHINGTON

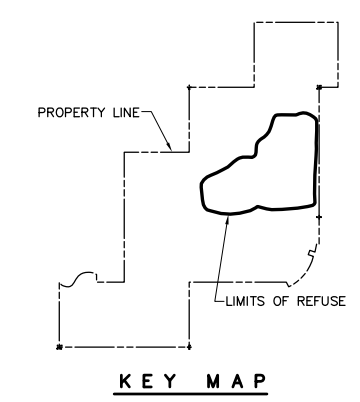
DATE  
 FEBRUARY 2018  
 FIGURE  
**3**





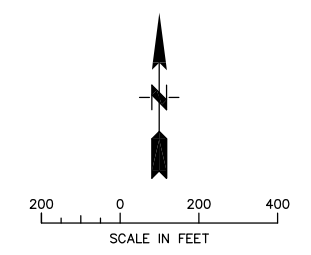
**Note:**  
 Water level contours were generated using depth to water and reference elevation data from wells screened between 89 and 200 ft-msl. The water level elevations for the following locations have not been used for contouring.

- Wells MW-13B, MW-33C and MW-41C have screen elevations outside the 89 to 200 ft-msl range.



LEGEND	
	UPGRADIENT (BACKGROUND) GROUNDWATER MONITORING WELL
	DOWNGRADIENT GROUNDWATER MONITORING WELL
	PERFORMANCE GROUNDWATER MONITORING WELL
	COMPLIANCE GROUNDWATER MONITORING WELL
	GROUNDWATER MONITORING WELL (WATER LEVEL ONLY)
	MONITORING WELL WATER LEVEL ELEVATION, FT-MSL
	ESTIMATED GROUNDWATER ELEVATION CONTOUR IN FEET-MSL CONTOUR INTERVAL = 10 FT
	GROUNDWATER FLOW DIRECTION
	WATER LEVEL ELEVATION NOT NOT USED IN CONTOURING
	PROPERTY LINE (ASSUMED)

Washington State Plane North Zone Coordinates  
 Datum: NAD 83, U.S. feet; NAVD 88, U.S. feet  
 GPS Base Station PID: SY9640  
 47 30 00.33905N, 122 45 26.58469W  
 Elevation: 450.22 feet  
 Flight Date: 6/18/98 Data Processed: 7/22/98

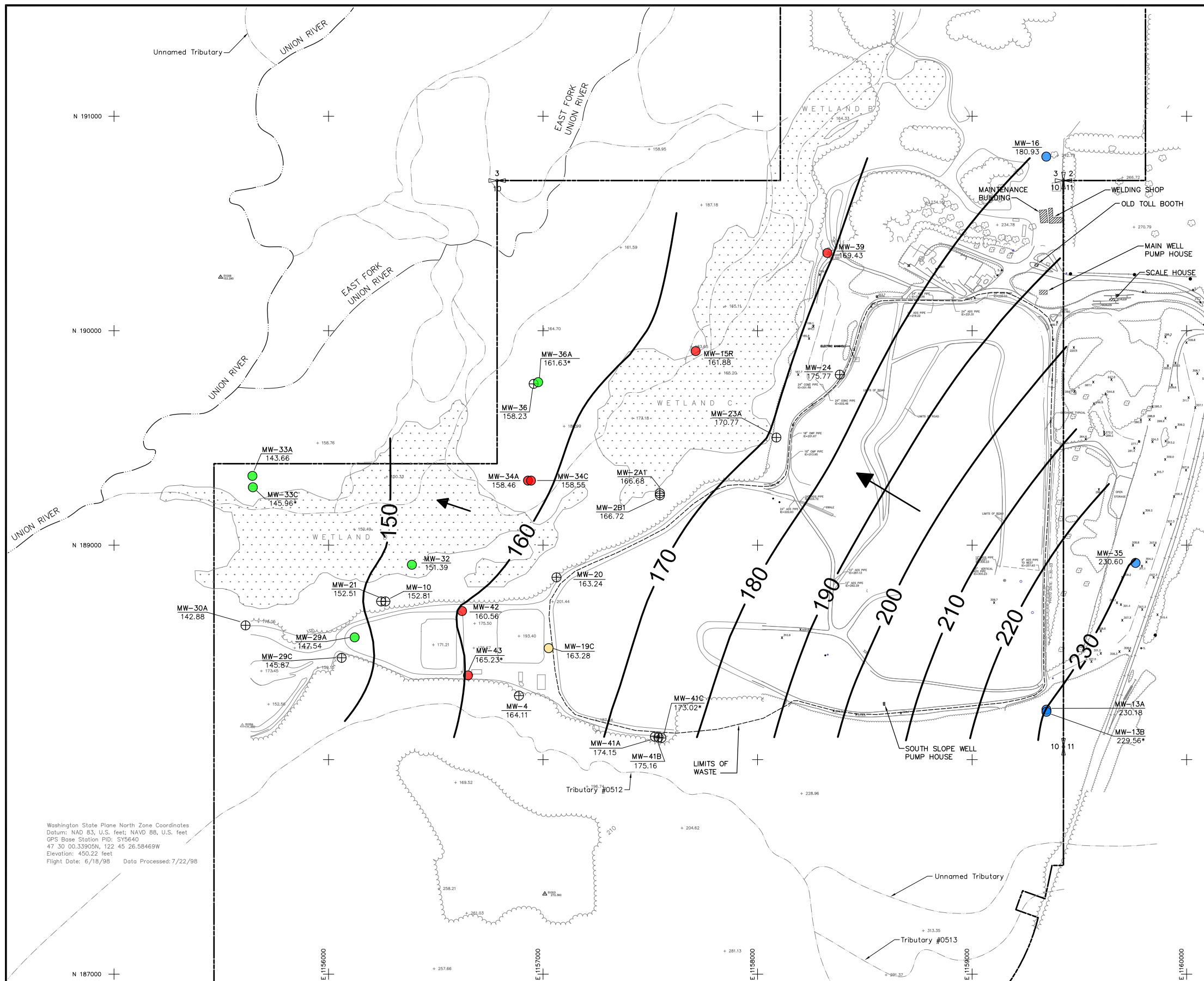


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 Bellevue, Washington 98005  
 (425) 746-4600 FAX: (425) 746-6747

PROJECT NO.	04204027.21	DES BY	S.G.
SCALE	AS SHOWN	CHK BY	D.V.
CAD FILE	FIGURE 4A	APP BY	G.H.

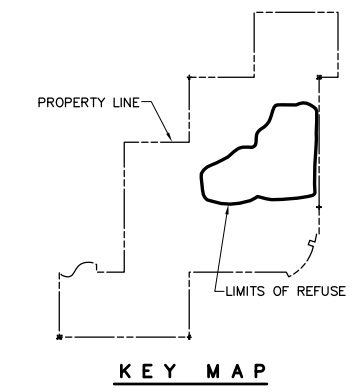
WATER LEVEL CONTOUR MAP  
 MAY 2017  
 OLYMPIC VIEW SANITARY LANDFILL  
 KITSAP COUNTY, WASHINGTON

DATE	FEBRUARY 2018
FIGURE	4A



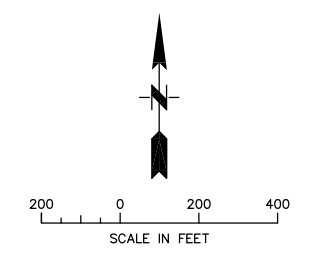
**Note:**  
 Water level contours were generated using depth to water and reference elevation data from wells screened between 89 and 200 ft-msl. The water level elevations for the following locations have not been used for contouring.

- Wells MW-13, MW-13B, MW-19D, MW-23C, MW-30B, MW-33C, MW-34B, MW-40C, and MW-41C have screen elevations outside the 89 to 200 ft-msl range.



LEGEND	
	UPGRADIENT (BACKGROUND) GROUNDWATER MONITORING WELL
	DOWNGRADIENT GROUNDWATER MONITORING WELL
	PERFORMANCE GROUNDWATER MONITORING WELL
	COMPLIANCE GROUNDWATER MONITORING WELL
	GROUNDWATER MONITORING WELL (WATER LEVEL ONLY)
	MONITORING WELL WATER LEVEL ELEVATION, FT-MSL
	ESTIMATED GROUNDWATER ELEVATION CONTOUR IN FEET-MSL CONTOUR INTERVAL = 10 FT
	GROUNDWATER FLOW DIRECTION
	WATER LEVEL ELEVATION NOT NOT USED IN CONTOURING
	PROPERTY LINE (ASSUMED)

Washington State Plane North Zone Coordinates  
 Datum: NAD 83, U.S. feet; NAVD 88, U.S. feet  
 GPS Base Station PID: SY9640  
 47 30 00.33905N, 122 45 26.58469W  
 Elevation: 450.22 feet  
 Flight Date: 6/18/98 Data Processed: 7/22/98



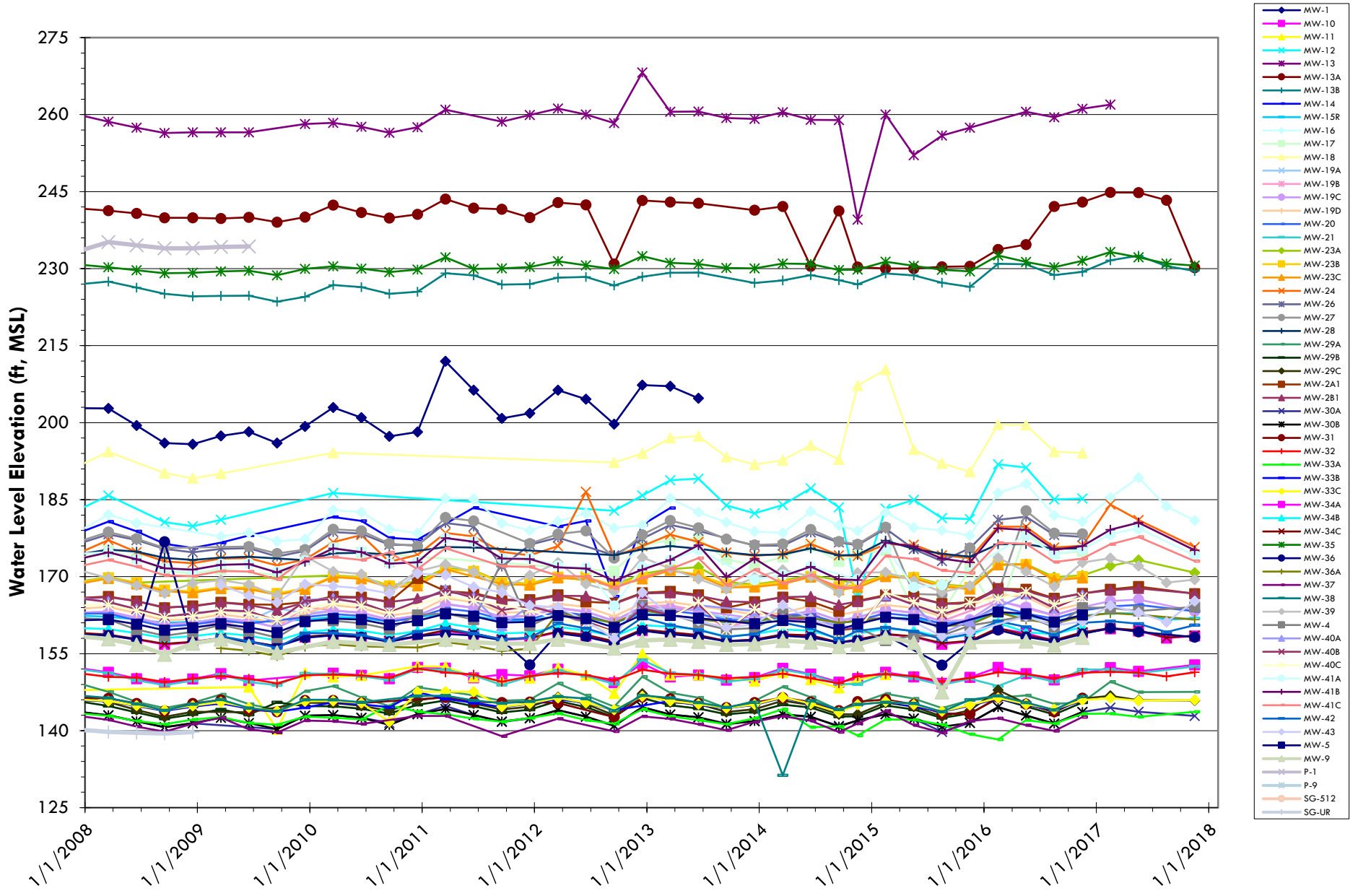
**SCS ENGINEERS**  
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 2405 140th Avenue NE, Suite 107  
 Bellevue, Washington 98005  
 (425) 746-4600 FAX: (425) 746-6747

PROJECT NO.	04204027.20	DES BY	S.G.
SCALE	AS SHOWN	CHK BY	D.V.
CAD FILE	FIGURE 4B	APP BY	D.V.

WATER LEVEL CONTOUR MAP  
 NOVEMBER 2017  
 OLYMPIC VIEW SANITARY LANDFILL  
 KITSAP COUNTY, WASHINGTON

DATE  
 FEBRUARY 2018  
 FIGURE  
**4B**

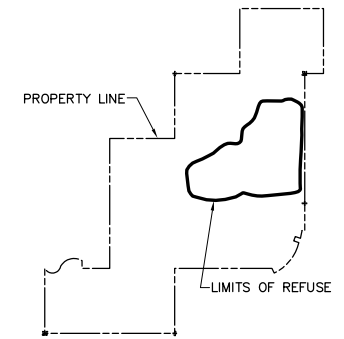
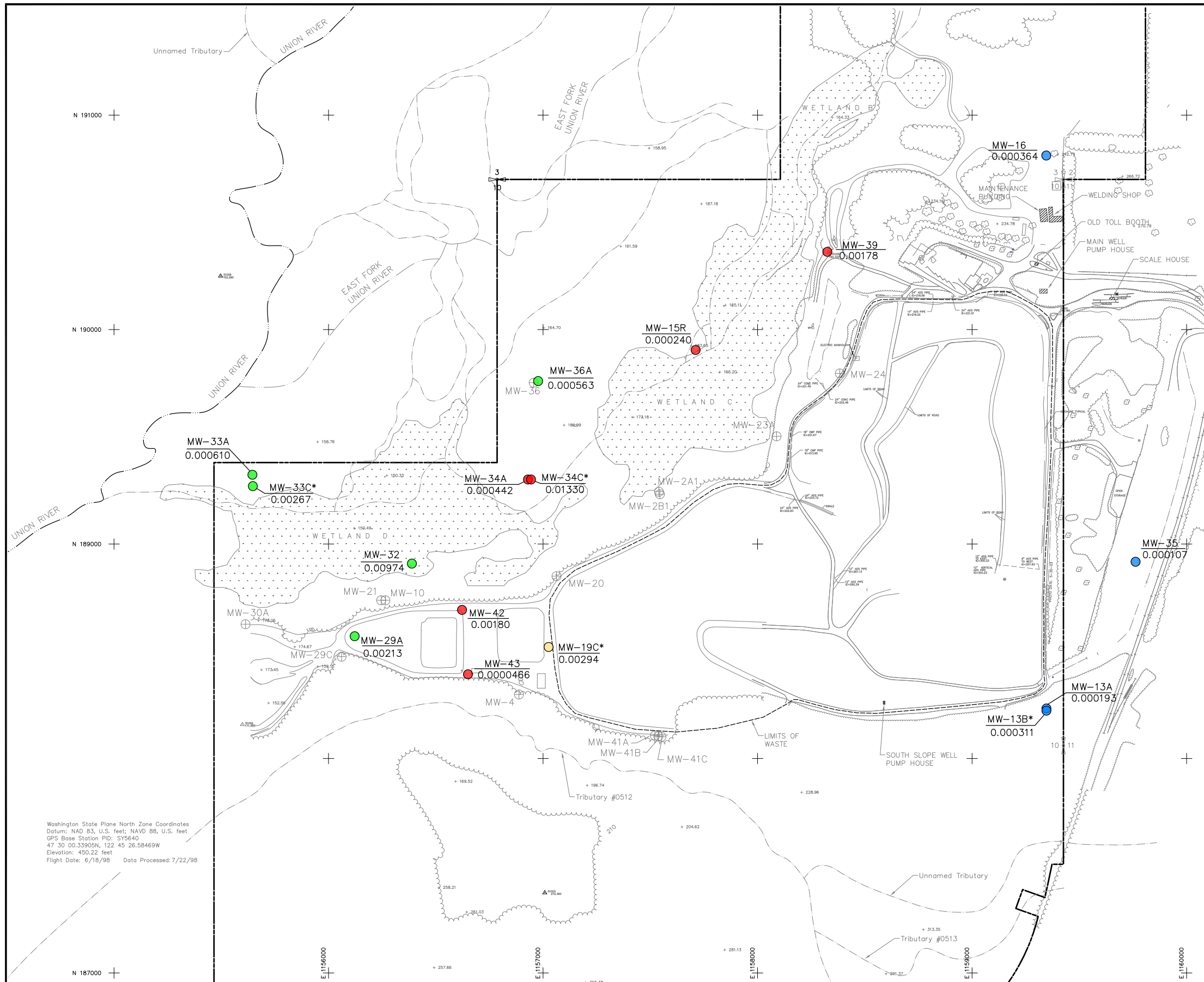
**Figure 5. Historical Groundwater Elevations**  
**2017 Annual Monitoring Report**  
**Olympic View Sanitary Landfill, Kitsap County, Washington**



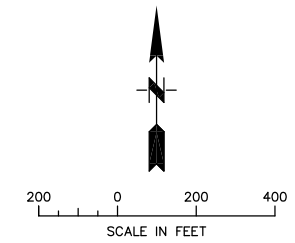




NOTES : Performance Well MW-19C and Downgradient Wells MW-29A, MW-33A, MW-33C and MW-36A are only sampled semi-annually and shown as NS when not sampled.



LEGEND	
	UPGRADIENT (BACKGROUND) GROUNDWATER MONITORING WELL
	DOWNGRADIENT GROUNDWATER MONITORING WELL
	PERFORMANCE GROUNDWATER MONITORING WELL
	COMPLIANCE GROUNDWATER MONITORING WELL
	GROUNDWATER MONITORING WELL (WATER LEVEL ONLY)
	SHALLOW MONITORING WELL ARSENIC, TOTAL (mg/L)
*	DEEP MONITORING WELL
---	PROPERTY LINE (ASSUMED)
NS	NOT SAMPLED



Washington State Plane North Zone Coordinates  
 Datum: NAD 83, U.S. feet; NAVD 88, U.S. feet  
 GPS Base Station PID: S79640  
 47 30 00.33905N, 122 45 26.58469W  
 Elevation: 450.22 feet  
 Flight Date: 6/18/98 Data Processed: 7/22/98

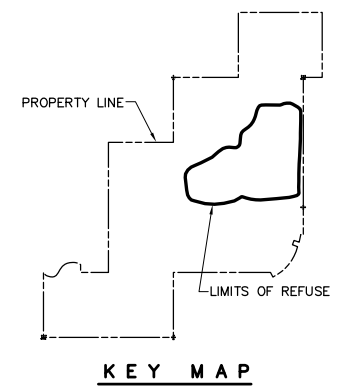
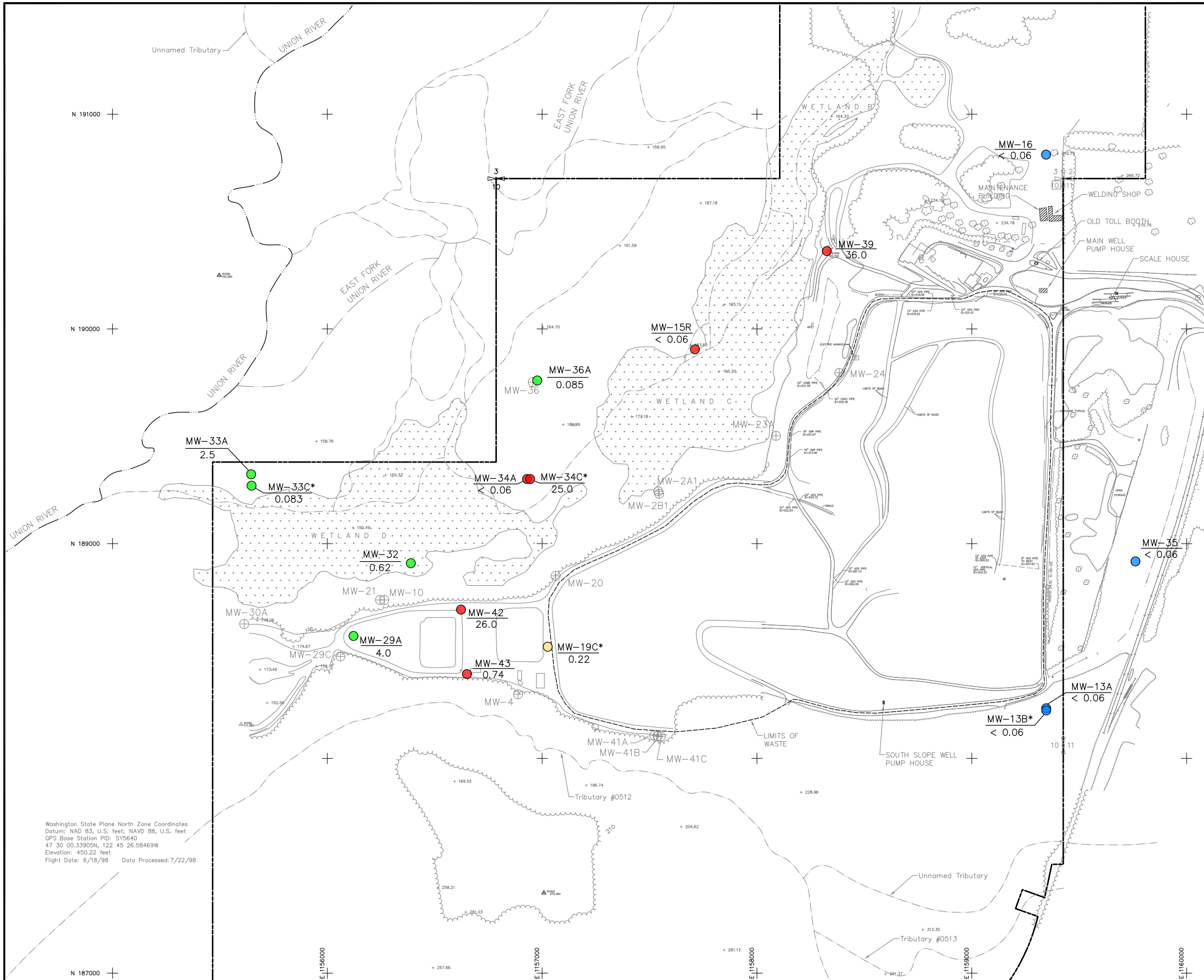
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 Environmental Consultants and Contractors  
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 Bellevue, Washington 98005  
 (425) 746-4600 FAX: (425) 746-6747

PROJECT NO.	04204027.20	DES BY	S.G.
SCALE	AS SHOWN	CHK BY	D.V.
CAD FILE	FIGURE 6A	APP BY	G.H.

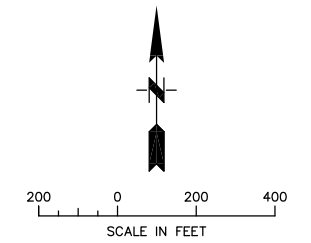
TOTAL ARSENIC CONCENTRATION MAP  
 NOVEMBER 2017  
 OLYMPIC VIEW SANITARY LANDFILL  
 KITSAP COUNTY, WASHINGTON

DATE  
 FEBRUARY 2018  
 FIGURE  
**6A**

NOTES : Performance Well MW-19C and Downgradient Wells MW-29A, MW-33A, MW-33C and MW-36A are only sampled semi-annually and shown as NS when not sampled.



LEGEND	
	UPGRADIENT (BACKGROUND) GROUNDWATER MONITORING WELL MW-35
	DOWNGRADIENT GROUNDWATER MONITORING WELL MW-32
	PERFORMANCE GROUNDWATER MONITORING WELL MW-19C
	COMPLIANCE GROUNDWATER MONITORING WELL MW-43
	GROUNDWATER MONITORING WELL (WATER LEVEL ONLY) MW-10
<u>MW-32</u> 0.62	<u>SHALLOW MONITORING WELL</u> IRON, TOTAL (mg/L)
*	DEEP MONITORING WELL
---	PROPERTY LINE (ASSUMED)
B	COMPOUND WAS FOUND IN THE BLANK AND THE SAMPLE
NS	NOT SAMPLED



Washington State Plane North Zone Coordinates  
 Datum: NAD 83, U.S. feet; NAVD 88, U.S. feet  
 GPS Base Station PID: S79640  
 47 30 00.33905N, 122 45 26.58469W  
 Elevation: 450.22 feet  
 Flight Date: 6/18/98 Data Processed: 7/22/98

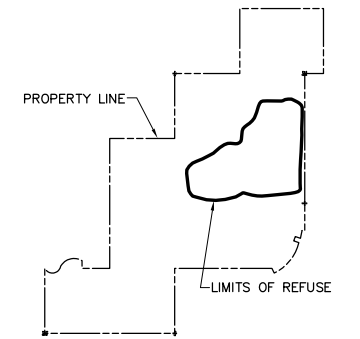
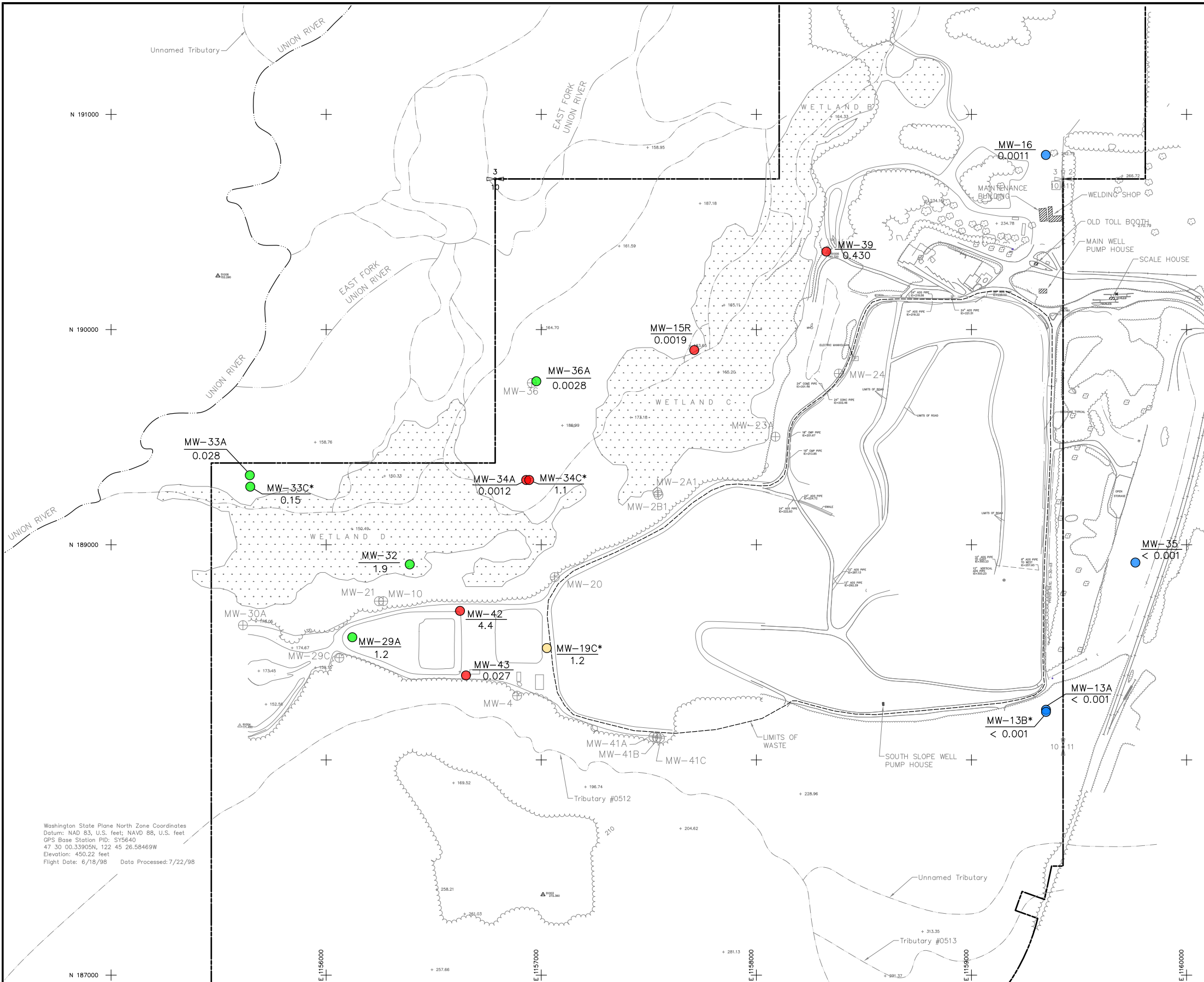
**SCS ENGINEERS**  
 Environmental Consultants and Contractors  
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 Bellevue, Washington 98005  
 (425) 746-4600 FAX: (425) 746-6747

PROJECT NO.	04204027.20	DES BY	S.G.
SCALE	AS SHOWN	CHK BY	D.V.
CAD FILE	FIGURE 6B	APP BY	G.H.

TOTAL IRON CONCENTRATION MAP  
 NOVEMBER 2017  
 OLYMPIC VIEW SANITARY LANDFILL  
 KITSAP COUNTY, WASHINGTON

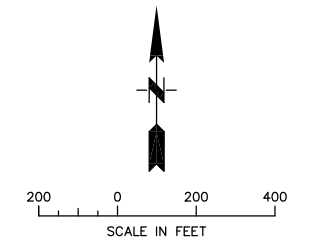
DATE	FEBRUARY 2018
FIGURE	6B

NOTES : Performance Well MW-19C and Downgradient Wells MW-29A, MW-33A, MW-33C and MW-36A are only sampled semi-annually and shown as NS when not sampled.



KEY MAP

LEGEND	
	UPGRADIENT (BACKGROUND) GROUNDWATER MONITORING WELL
	DOWNGRADIENT GROUNDWATER MONITORING WELL
	PERFORMANCE GROUNDWATER MONITORING WELL
	COMPLIANCE GROUNDWATER MONITORING WELL
	GROUNDWATER MONITORING WELL (WATER LEVEL ONLY)
<u>MW-32</u> 1.9	SHALLOW MONITORING WELL MANGANESE, TOTAL (mg/L)
*	DEEP MONITORING WELL
---	PROPERTY LINE (ASSUMED)
NS	NOT SAMPLED



Washington State Plane North Zone Coordinates  
 Datum: NAD 83, U.S. feet; NAVD 88, U.S. feet  
 GPS Base Station PID: S79640  
 47 30 00.33905N, 122 45 26.58469W  
 Elevation: 450.22 feet  
 Flight Date: 6/18/98 Data Processed: 7/22/98

**SCS ENGINEERS**  
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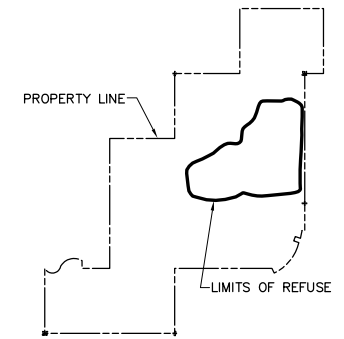
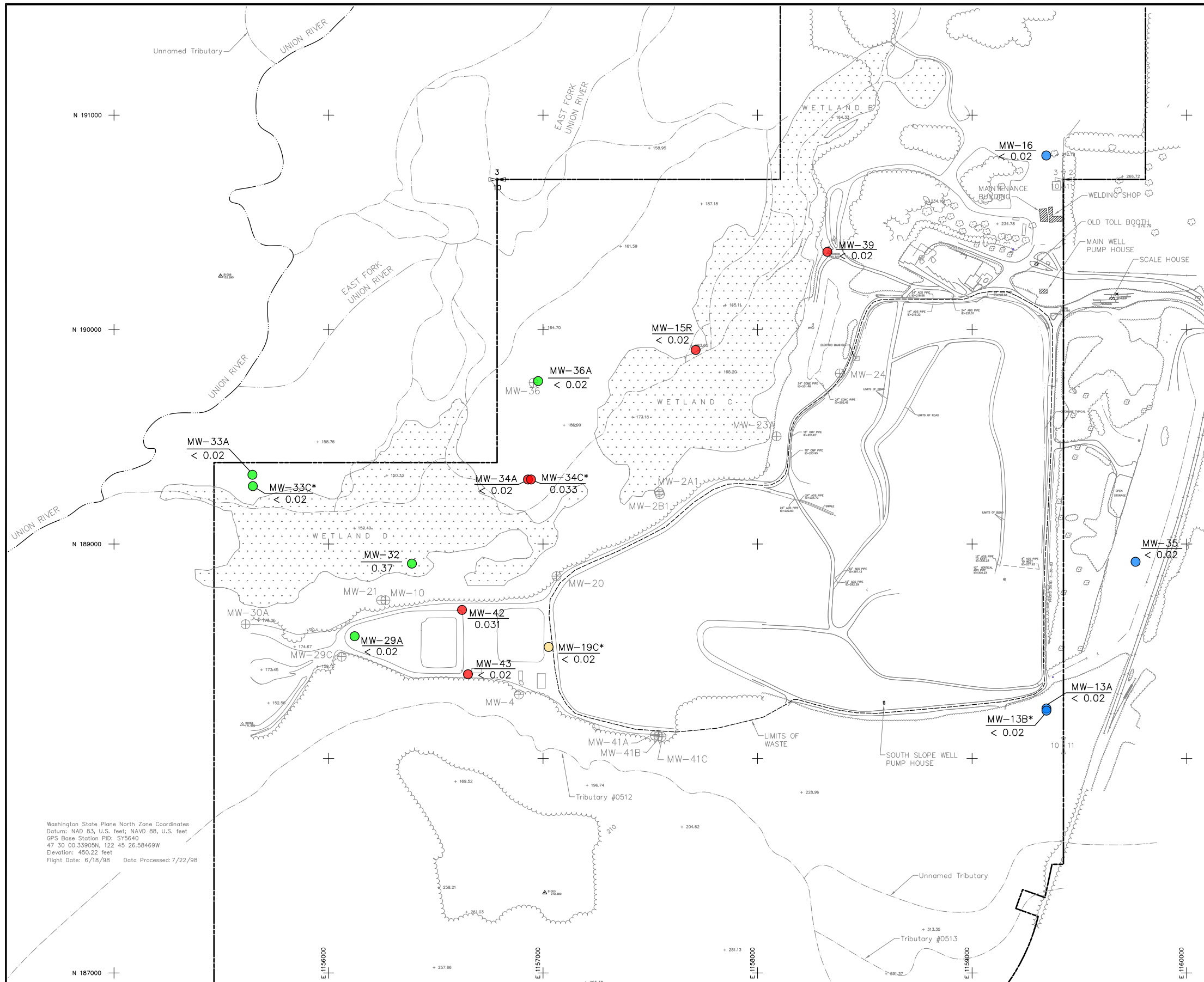
PROJECT NO.	04204027.20	DES BY	S.G.
SCALE	AS SHOWN	CHK BY	D.V.
CAD FILE	FIGURE 6C	APP BY	G.H.

TOTAL MANGANESE CONCENTRATION MAP  
 NOVEMBER 2017  
 OLYMPIC VIEW SANITARY LANDFILL  
 KITSAP COUNTY, WASHINGTON

DATE	FEBRUARY 2018
FIGURE	6C

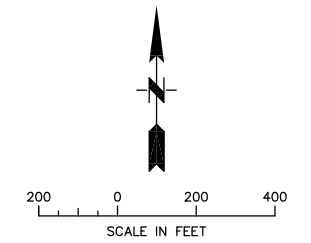


NOTES : Performance Well MW-19C and Downgradient Wells MW-29A, MW-33A, MW-33C and MW-36A are only sampled semi-annually and shown as NS when not sampled.



KEY MAP

LEGEND	
	UPGRADIENT (BACKGROUND) GROUNDWATER MONITORING WELL
	DOWNGRADIENT GROUNDWATER MONITORING WELL
	PERFORMANCE GROUNDWATER MONITORING WELL
	COMPLIANCE GROUNDWATER MONITORING WELL
	GROUNDWATER MONITORING WELL (WATER LEVEL ONLY)
	SHALLOW MONITORING WELL VINYL CHLORIDE, TOTAL (ug/L)
*	DEEP MONITORING WELL
---	PROPERTY LINE (ASSUMED)
NS	NOT SAMPLED



Washington State Plane North Zone Coordinates  
 Datum: NAD 83, U.S. feet; NAVD 88, U.S. feet  
 GPS Base Station PID: S79640  
 47 30 00.33905N, 122 45 26.58469W  
 Elevation: 450.22 feet  
 Flight Date: 6/18/98 Data Processed: 7/22/98

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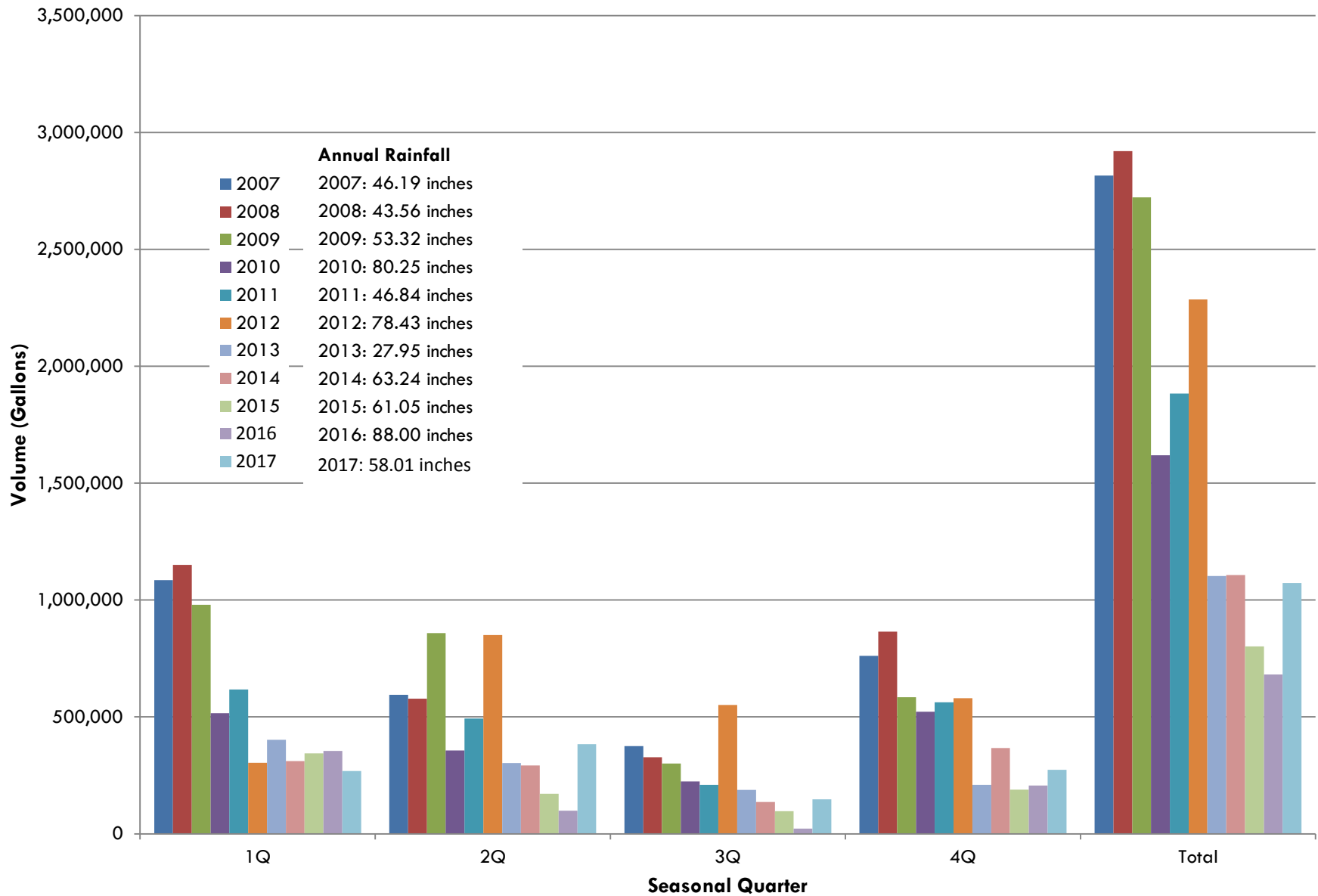
PROJECT NO.	04204027.20	DES BY	S.G.
SCALE	AS SHOWN	CHK BY	D.V.
CAD FILE	FIGURE 6D	APP BY	G.H.

VINYL CHLORIDE CONCENTRATION MAP  
 NOVEMBER 2017  
 OLYMPIC VIEW SANITARY LANDFILL  
 KITSAP COUNTY, WASHINGTON

DATE	FEBRUARY 2018
FIGURE	6D

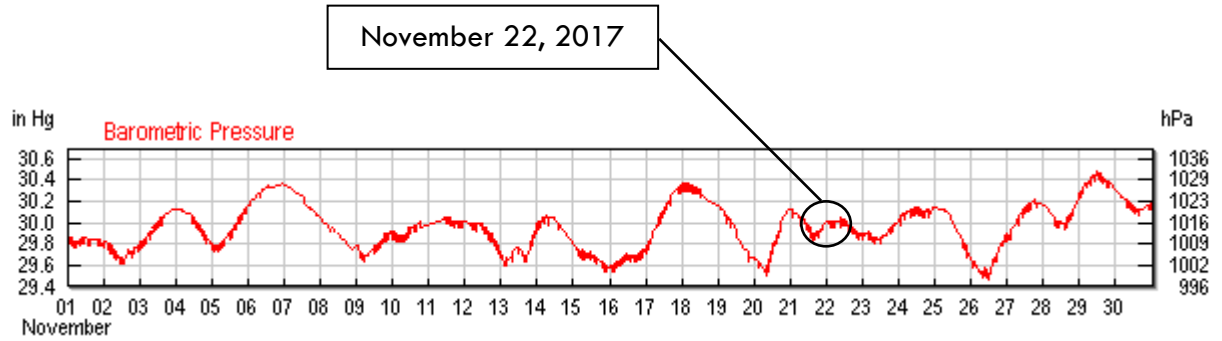


**Figure 7. Leachate Generation (2007 - 2017)**  
**2017 Annual Monitoring Report**  
**Olympic View Sanitary Landfill, Kitsap County, Washington**

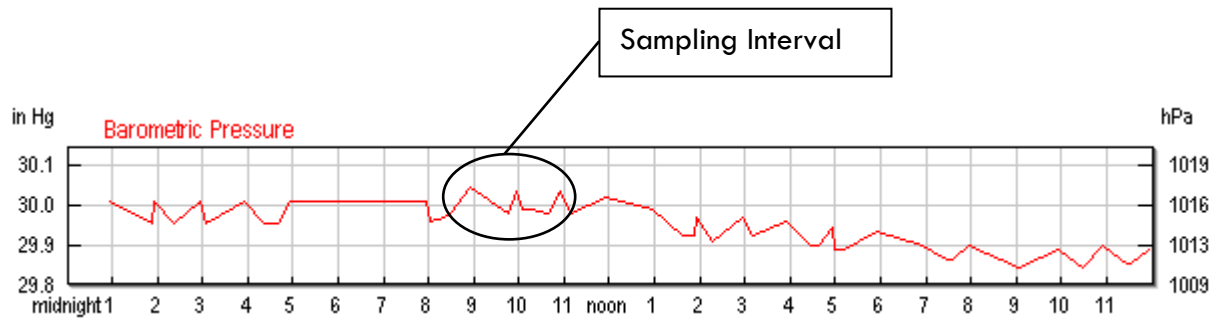


**Figure 8. Barometric Pressure during LFG Migration Monitoring – November 2017**  
**2017 Annual Monitoring Report**  
**Olympic View Sanitary Landfill, Kitsap County, Washington**

**Barometric Pressure Trend for November 2017**



**Barometric Pressure Trend for November 22, 2017**



Source: Bremerton National Airport, Station KPWT  
 Latitude 47.5, Longitude 122.75, Elevation 482 ft-AMSL

Data Sources:

[https://www.wunderground.com/history/airport/KPWT/2016/11/13/MonthlyHistory.html?req\\_city=&req\\_state=&req\\_statename=&reqdb.zip=&reqdb.magic=&reqdb.wmo=](https://www.wunderground.com/history/airport/KPWT/2016/11/13/MonthlyHistory.html?req_city=&req_state=&req_statename=&reqdb.zip=&reqdb.magic=&reqdb.wmo=)

APPENDIX A

FOURTH QUARTER 2017  
FIELD DOCUMENTATION

(FIELD DOCUMENTATION FROM Q1 THROUGH Q3 ON CD)



## SCS ENGINEERS

November 16, 2017  
File No. 04204027.20

**Subject: Fourth Quarter 2017 Compliance Monitoring Event  
Olympic View Sanitary Landfill, Kitsap County, Washington**

---

Sampling Event Dates: November 13-15, 2017  
Personnel: Sam Graber & Alexa Deep

### NOTES/SAMPLING DECODING:

- SCS sampled the revised list of wells approved by Ecology in their January 2017 Periodic Review report.
- The quarterly and semi-annual wells, and the annual leachate samples were collected during this quarter.
- The gate code to access the site is: 72369
- Dedicated pumps were used for purging and sampling all wells.
- Duplicate samples were collected at MW-34A (DUP 1) and MW-15R (DUP 2).
- The semi-annual water level survey was conducted during this event.
- Geotech and Solinst water level meters were used to record all water level elevations.
- The samples were sent to TestAmerica Denver for analysis at the close of each sampling day, except samples for low level arsenic which were held until the end of the sampling event and provided to Analytical Resources, Inc. in Tukwila, Washington.

Sample Date	Location ID	Sample ID	Comments
11/13/17	MW-13B	1117-01	
11/13/17	MW-13A	1117-02	
11/13/17	MW-16	1117-03	
11/13/17	MW-29A	1117-04	
11/13/17	MW-39	1117-05	
11/13/17	MW-42	1117-06	
11/13/17	MW-43	1117-07	
11/13/17	MW-19C	1117-08	
11/14/17	MW-34C	1117-09	
11/14/17	MW-36A	1117-10	
11/14/17	MW-34A	1117-11	

Sample Date	Location ID	Sample ID	Comments
11/14/17	MW-34A	1117-12	Dup 1
11/14/17	MW-33A	1117-13	
11/14/17	MW-33C	1117-14	
11/14/17	MW-15R	1117-15	
11/14/17	MW-15R	1117-16	Dup 2
11/15/17	MW-35	1117-17	
11/15/17	MW-32	1117-18	
11/15/17	OBWL-TD	1117-19	
11/15/17	L-INF	1117-20	
??	LP-LCD	1117-21	



# FIELD INFORMATION FORM



Site Name: OVSL  
 Site No.:       
 Sample Point: MW-13A  
 Sample ID:     

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:     

**PURGE INFO**  
 PURGE DATE (MM DD YY): 11/13/17  
 PURGE TIME (2400 Hr Clock):       
 ELAPSED HRS (hrs:min): 2:0  
 WATER VOL IN CASING (Gallons):       
 ACTUAL VOL PURGED (Gallons):       
 WELL VOL PURGED:     

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  Y or  N  
 Purging Device:  C A-Submersible Pump  D-Bailer  
 Sampling Device:  C C-QED Bladder Pump  F-Dipper/Bottle  
 X-Other:       
 Filter Device:  Y or  N 0.45 μ or      μ (circle or fill in)  
 Filter Type:  A  
 Sample Tube Type:  D  
 A-In-line Disposable C-Vacuum  
 B-Pressure X-Other:       
 A-Teflon C-PVC X-Other:       
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC):      (ft/msl)      Depth to Water (DTW) (from TOC): 58.54 (ft)  
 Groundwater Elevation (site datum, from TOC):      (ft/msl)  
 Total Well Depth (from TOC):      (ft)      Stick Up (from ground elevation):      (ft)  
 Casing ID: 02 (in)      Casing Material: PVC

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (μmhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
11:03	350 ML/min	6.37	171	9.52		16.37	118.11	
11:06		6.61	171	9.49		16.18	117.15	
11:09		6.69	172	9.48		16.14	116.65	
11:12		6.73	172	9.46		16.12	116.36	
11:15		6.75	171	9.46		16.11	116.21	
11:18		6.77	171	9.44		16.13	116.01	
11:21		6.79	171	9.41	1.69	16.11	115.84	58.54

Suggested range for 3 consec. readings or note Permit/State requirements:  
 pH: +/- 0.2      Conductance: +/- 3%      Temp: -      Turbidity: -      D.O.: +/- 10%      eH/ORP: +/- 25 mV      DTW: Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 11/13/17  
 pH (std): 6.79  
 CONDUCTANCE (umhos/cm @ 25°C): 171  
 TEMP. (°C): 9.41  
 TURBIDITY (ntu): 1.69  
 DO (mg/L-ppm): 6.11  
 eH/ORP (mV): 115.84  
 Other: DTW  
 Units: ft

**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: Clear      Odor: -      Color: -      Other: -  
 Weather Conditions (required daily, or as conditions change):           Direction/Speed: 4 mph N      Outlook: cloudy/rain      Precipitation:  Y or  N  
 Specific Comments (including purge/well volume calculations if required):     

**FIELD COMMENTS**  
      
      
      
    

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
11/13/17      Alexo Deep      Alexo Deep      SCS  
 Date      Name      Signature      Company



# FIELD INFORMATION FORM



Site Name: 0USC  
 Site No.:       
 Sample Point: MW-116  
 Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:                     

**PURGE INFO**  
 PURGE DATE (MM DD YY): 11 13 17  
 PURGE TIME (2400 Hr Clock): 12:35  
 ELAPSED HRS (hrs:min): 20  
 WATER VOL IN CASING (Gallons):       
 ACTUAL VOL PURGED (Gallons):       
 WELL VOLs PURGED:     

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  or   
 Purging Device: C A-Submersible Pump D-Bailer  
 Sampling Device: C B-Peristaltic Pump E-Piston Pump  
 X-Other:      C-QED Bladder Pump F-Dipper/Bottle  
 Filter Device:  or  0.45  $\mu$  or       $\mu$  (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other:       
 Sample Tube Type: D A-Teflon C-PVC X-Other:       
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC):      (ft/msl)  
 Depth to Water (DTW) (from TOC): 5907 (ft)  
 Groundwater Elevation (site datum, from TOC):      (ft/msl)  
 Total Well Depth (from TOC):      (ft)  
 Stick Up (from ground elevation):      (ft)  
 Casing ID: 02 (in) Casing Material: PVC

*Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) ( $\mu$ mhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
12:35	390	7.44	1108	9.39		1800	1090	
12:40		6.56	106	9.30		533	1190	
12:43		6.49	104	9.30		559	1200	
12:46		6.42	104	9.30		562	1180	
12:49		6.33	104	9.30		562	1160	
12:52		6.32	104	9.30		562	1150	
12:55	↓	6.35	104	9.30	1.71	561	1170	5915
:								
:								
:								

Suggested range for 3 consec. readings or note Permit/State requirements:  
 pH: +/- 0.2      Conductance: +/- 3%      Temp: --      Turbidity: --      D.O.: +/- 10%      eH/ORP: +/- 25 mV      DTW: Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. **If more fields above are needed, use separate sheet or form.**

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 11 13 17  
 pH (std): 6.35  
 CONDUCTANCE (umhos/cm @ 25°C): 104  
 TEMP. (°C): 9.30  
 TURBIDITY (ntu): 1.71  
 DO (mg/L-ppm): 5.61  
 eH/ORP (mV): 1170  
 Other: DTW  
 Units: FT  
5915

**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: Clear      Odor: None      Color: -      Other: -  
 Weather Conditions (required daily, or as conditions change):           Direction/Speed: 5 mph @ N      Outlook: Cloudy      Precipitation:  or   
 Specific Comments (including purge/well volume calculations if required):     

**FIELD COMMENTS**  
      
      
      
    

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
11/13/17      Sam Graber                SCS  
 Date      Name      Signature      Company

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

# FIELD INFORMATION FORM



Site Name: OVSL  
 Site No.:       
 Sample Point: NW-291A  
 Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID: \_\_\_\_\_

**PURGE INFO**  
 PURGE DATE (MM DD YY): 11/13/17 PURGE TIME (2400 Hr Clock): R:40 ELAPSED HRS (hrs:min): 1:20  
 WATER VOL IN CASING (Gallons):      ACTUAL VOL PURGED (Gallons):      WELL VOLS PURGED:     

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  Y or  N  
 Filter Device:  Y or  N 0.45 μ or \_\_\_\_\_ μ (circle or fill in)  
 Purging Device:  C A-Submersible Pump D-Bailer  
 Filter Type:  A A-In-line Disposable C-Vacuum  
 B-Peristaltic Pump E-Piston Pump B-Pressure X-Other \_\_\_\_\_  
 Sampling Device:  C C-QED Bladder Pump F-Dipper/Bottle  
 X-Other: \_\_\_\_\_ Sample Tube Type:  D A-Teflon C-PVC X-Other: \_\_\_\_\_  
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC) \_\_\_\_\_ (ft/msl) Depth to Water (DTW) (from TOC) 1267 (ft) Groundwater Elevation (site datum, from TOC) \_\_\_\_\_ (ft/msl)  
 Total Well Depth (from TOC) \_\_\_\_\_ (ft) Stick Up (from ground elevation) \_\_\_\_\_ (ft) Casing ID A (in) Casing Material \_\_\_\_\_  
*Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

Sample Time (2400 Hr Clock)	Rate/Unit (ft/min)	pH (std)	Conductance (SC/EC) (μmhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
13:40	350	6.50	88	10.95		3.5	-2108	
13:45		6.36	87	10.93		0.50	-167	
13:48		6.32	86	10.93		0.37	-316	
13:51		6.30	85	10.92		0.31	-0.8	
13:54		6.29	85	10.92		0.25	0.9	
13:57		6.27	85	10.90		0.85	1.8	
14:00		6.26	87	10.90	3.33	0.21	2.9	1357

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, D.O. +/- 10%, eH/ORP +/- 25 mV, DTW Stabilize  
**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. **If more fields above are needed, use separate sheet or form.**

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 11/13/17 pH (std): 6.26 CONDUCTANCE (umhos/cm @ 25°C): 87 TEMP. (°C): 10.90 TURBIDITY (ntu): 3.33 DO (mg/L - ppm): 0.21 eH/ORP (mV): 2.9 Other: DLW  
 Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site). Units: FT

Sample Appearance: clear Odor: \_\_\_\_\_ Color: \_\_\_\_\_ Other: \_\_\_\_\_  
 Weather Conditions (required daily, or as conditions change): \_\_\_\_\_ Direction/Speed: 6 mph Outlook: rain Precipitation:  Y or  N  
 Specific Comments (including purge/well volume calculations if required): \_\_\_\_\_

**FIELD COMMENTS**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
11/13/17 Alexa Deep Alexa Deep SCS  
 Date Name Signature Company

# FIELD INFORMATION FORM



Site Name: OSL  
 Site No.:       
 Sample Point: MW-39  
Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:                     

**PURGE INFO**  
 PURGE DATE (MM DD YY): 11/13/17  
 PURGE TIME (2400 Hr Clock): 14:00  
 ELAPSED HRS (hrs:min): 20  
 WATER VOL IN CASING (Gallons):       
 ACTUAL VOL PURGED (Gallons):       
 WELL VOL PURGED:     

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  or  N  
 Purging Device:  C A-Submersible Pump D-Bailer  
 Sampling Device:  C B-Peristaltic Pump E-Piston Pump  
 X-Other:                      C-QED Bladder Pump F-Dipper/Bottle  
 Filter Device:  Y or  N 0.45 μ or      μ (circle or fill in)  
 Filter Type:  A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other                       
 Sample Tube Type:  D A-Teflon C-PVC X-Other:                       
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC):      (ft/msl) Depth to Water (DTW) (from TOC) \* 2046 (ft)  
 Groundwater Elevation (site datum, from TOC):      (ft/msl)  
 Total Well Depth (from TOC):      (ft) Stick Up (from ground elevation):      (ft)  
 Casing ID: 02 (in) Casing Material: PVC  
Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (μmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1M:00	390	6.27	254	11.34	10	10.55	-2780	
1M:05		6.27	255	11.34		10.52	-27320	
1M:08		6.27	255	11.35		10.55	-27370	
1M:11		6.27	256	11.36		10.57	-27400	
1M:14		6.23	257	11.34		10.16	-27430	
1M:17		6.27	257	11.27		10.15	-27430	
1M:20		6.26	262	11.35	320	10.15	-27410	2730

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, D.O. +/- 10%, eH/ORP +/- 25 mV, DTW Stabilize

Stabilization Data Fields are Optional (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 11/13/17  
 pH (std): 6.26  
 CONDUCTANCE (umhos/cm @ 25°C): 262  
 TEMP. (°C): 11.25  
 TURBIDITY (ntu): 320  
 DO (mg/L-ppm): 0.15  
 eH/ORP (mV): -27410  
 Other: 2730  
 Units: FT

Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: Clear Odor: None Color: - Other: -  
 Weather Conditions (required daily, or as conditions change):      Direction/Speed: S 2 mph @ N Outlook: clear Precipitation:  Y or  N

Specific Comments (including purge/well volume calculations if required):  
\* used glass solinst w/ meter

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
11/13/17 Sam Cooper                                            
 Date Name Signature Company

# FIELD INFORMATION FORM



Site Name: DVSL  
 Site No.:       
 Sample Point: NW-42  
 Sample ID:     

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:     

**PURGE INFO**  
 PURGE DATE (MM DD YY): 11/13/17  
 PURGE TIME (2400 Hr Clock): 14:40  
 ELAPSED HRS (hrs:min): 01:20  
 WATER VOL IN CASING (Gallons):       
 ACTUAL VOL PURGED (Gallons):       
 WELL VOL PURGED:     

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  Y or  N  
 Purging Device:  C A-Submersible Pump  D-Bailer  
 Sampling Device:  C B-Peristaltic Pump  E-Piston Pump  
 X-Other:      C-QED Bladder Pump  F-Dipper/Bottle  
 Filter Device:  Y or  N 0.45 μ or      μ (circle or fill in)  
 Filter Type:  A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other:       
 Sample Tube Type:  D A-Teflon C-PVC X-Other:       
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC):      (ft/msl) Depth to Water (DTW) (from TOC): 2687 (ft)  
 Groundwater Elevation (site datum, from TOC):      (ft/msl)  
 Total Well Depth (from TOC):      (ft) Stick Up (from ground elevation):      (ft)  
 Casing ID (in):      Casing Material:     

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (μmhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
14:40	300	6.60	560	12.07		0.52	-4180	
14:45		6.70	560	12.07		0.29	-1677	
14:48		6.70	560	12.08		0.22	-715	
14:51		6.70	560	12.07		0.20	-744	
14:54		6.77	560	12.04		0.18	-761	
14:57		6.70	560	12.08		0.15	-780	
15:00		6.70	560	12.04	2.72	0.14	-790	26.95

Suggested range for 3 consec. readings or note Permit/State requirements:  
 pH: +/- 0.2      Conductance: +/- 3%      Temp: -      Turbidity: -      D.O.: +/- 10%      eH/ORP: +/- 25 mV      DTW: Stabilize

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 11/13/17  
 pH (std): 6.70  
 CONDUCTANCE (umhos/cm @ 25°C): 560  
 TEMP. (°C): 12.04  
 TURBIDITY (ntu): 2.72  
 DO (mg/L-ppm): 0.14  
 eH/ORP (mV): -790  
 Other: DTW  
 Units: ft

Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)  
 Sample Appearance: clear Odor:      Color:      Other:       
 Weather Conditions (required daily, or as conditions change):      Direction/Speed: 8 mph Outlook: fair Precipitation:  Y or  N  
 Specific Comments (including purge/well volume calculations if required):     

**FIELD COMMENTS**  
      
      
      
    

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
11/13/17 Alexo Depp            
 Date Name Signature Company

# FIELD INFORMATION FORM



Site Name: OVSL  
 Site No.:       
 Sample Point: MM-4131  
 Sample ID:     

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:     

**PURGE INFO**  
 PURGE DATE (MM DD YY): 11/13/17 PURGE TIME (2400 Hr Clock): 15:58 ELAPSED HRS (hrs:min): 02:0  
 WATER VOL IN CASING (Gallons):      ACTUAL VOL PURGED (Gallons):      WELL VOL PURGED:     

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  Y or  N  
 Purging Device:  C (A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump) or  D (D-Bailer, E-Piston Pump, F-Dipper/Bottle)  
 Sampling Device:  C or  D  
 X-Other:       
 Filter Device:  Y or  N, 0.45 μ or      μ (circle or fill in)  
 Filter Type:  A (A-In-line Disposable, B-Pressure) or  X-Other  
 Sample Tube Type:  D (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene) or  X-Other

**WELL DATA**  
 Well Elevation (at TOC) (ft/msl):      Depth to Water (DTW) (from TOC) (ft): 29.04 Groundwater Elevation (site datum, from TOC) (ft/msl):       
 Total Well Depth (from TOC) (ft):      Stick Up (from ground elevation) (ft):      Casing ID (in):      Casing Material:     

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate/Unit (mg/min)	pH (std)	Conductance (SC/EC) (μmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
15:58	300	6.57	52	11.27		0.95	327	
16:03		5.89	51	11.26		0.77	180.5	
16:06		5.76	51	11.27		0.78	197	
16:09		5.70	51	11.27		0.80	101.5	
16:12		5.65	51	11.25		0.80	108.2	
16:15		5.63	50	11.25		0.80	114.0	
16:18		5.62	50	11.27	2.23	0.80	118.7	27.20

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, Temp. --, Turbidity --, D.O. +/- 10%, eH/ORP +/- 25 mV, DTW Stabilize

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 11/13/17 pH (std): 5.62 CONDUCTANCE (umhos/cm @ 25°C): 50 TEMP. (°C): 11.27 TURBIDITY (ntu): 2.23 DO (mg/L-ppm): 0.80 eH/ORP (mV): 118.7 Other: DTW  
 Units: ft

Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)  
 Sample Appearance: Clear Odor:      Color:      Other:       
 Weather Conditions (required daily, or as conditions change):      Direction/Speed: 5 mph Outlook: rain Precipitation:  Y or  N  
 Specific Comments (including purge/well volume calculations if required):     

**FIELD COMMENTS**  
      
      
    

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
11/13/17 Alfred Lopez Anna Lopez SCS  
 Date Name Signature Company

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy



# FIELD INFORMATION FORM



Site Name: OSU  
 Site No.:                                          
 Sample Point: NW-14C  
 Sample ID:     

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:     

**PURGE INFO**  
 PURGE DATE (MM DD YY): 11/13/17  
 PURGE TIME (2400 Hr Clock): 1640  
 ELAPSED HRS (hrs:min):      20  
 WATER VOL IN CASING (Gallons):                                
 ACTUAL VOL PURGED (Gallons):                                
 WELL VOLS PURGED:                              

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  Y or  N  
 Purging Device: C A-Submersible Pump D-Bailer  
 Sampling Device: C B-Peristaltic Pump E-Piston Pump  
 X-Other:      C-QED Bladder Pump F-Dipper/Bottle  
 Filter Device:  Y or  N 0.45 μ or      μ (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other:       
 Sample Tube Type: D A-Teflon C-PVC X-Other:       
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC):      (ft/msl) Depth to Water (DTW) (from TOC): 3367 (ft) \*  
 Groundwater Elevation (site datum, from TOC):      (ft/msl)  
 Total Well Depth (from TOC):      (ft) Stick Up (from ground elevation):      (ft)  
 Casing ID: 02 (in) Casing Material: PVC  
 Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (μmhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
16:40	290	6.47	1157	10.15		0.20	-1710	
16:45		6.62	1166	10.13		0.21	-2110	
16:48		6.78	1175	10.11		0.21	-2150	
16:51		6.80	1174	10.11		0.27	-2130	
16:54		6.81	1173	10.12		0.24	-1720	
16:57		6.81	1173	10.10		0.23	-1740	
17:00	↓	6.82	1173	10.08	1.21	0.22	-1790	3370

Suggested range for 3 consec. readings or note Permit/State requirements:  
 pH: +/- 0.2    Conductance: +/- 3%    Temp: --    Turbidity: --    D.O.: +/- 10%    eH/ORP: +/- 25 mV    DTW: Stabilize

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 11/13/17 pH (std): 6.82 CONDUCTANCE (umhos/cm @ 25°C): 1173 TEMP. (°C): 10.08 TURBIDITY (ntu): 1.21 DO (mg/L-ppm): 0.22 eH/ORP (mV): -1790 Other: DTW  
 Units: Final 174  
 Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)

Sample Appearance: clear Odor: None Color:      Other:       
 Weather Conditions (required daily, or as conditions change):      Direction/Speed: S 240 W Outlook: fair Precipitation:  Y or  N  
 Specific Comments (including purge/well volume calculations if required):     

**FIELD COMMENTS**  
\* used black solinst well meter

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
11/13/17 Sam Carter [Signature] SCS  
 Date Name Signature Company

FIELD INFORMATION FORM



Site Name: 2VSL
Site No.:
Sample Point: MN-34C

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms...

Laboratory Use Only/Lab ID:

PURGE INFO: PURGE DATE (11/14/17), PURGE TIME (8:50), ELAPSED HRS (083), WATER VOL IN CASING, ACTUAL VOL PURGED, WELL VOLS PURGED

PURGE/SAMPLE EQUIPMENT: Purging and Sampling Equipment... Dedicated? (Y), Filter Device: (Y), Purging Device: (C), Sampling Device: (C), Filter Type: (A), Sample Tube Type: (D)

WELL DATA: Well Elevation, Depth to Water (DTW), Groundwater Elevation, Total Well Depth, Stick Up, Casing ID, Casing Material

Table with columns: Sample Time (2400 Hr Clock), Rate/Unit, pH (std), Conductance (SC/EC) (umhos/cm @ 25°C), Temp. (°C), Turbidity (ntu), D.O. (mg/L - ppm), eH/ORP (mV), DTW (ft). Includes handwritten data for stabilization readings.

Stabilization Data Fields are Optional (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site.

FIELD DATA: SAMPLE DATE (11/14/17), pH (std) (6.61), CONDUCTANCE (umhos/cm @ 25°C) (232), TEMP. (°C) (13.0), TURBIDITY (ntu) (158), DO (mg/L - ppm) (0.26), eH/ORP (mV) (-8.9), Other: (0.7), Units: (FT)

Sample Appearance: cloudy, Odor: -, Color: orange, Weather Conditions: cloudy/rainy, Direction/Speed: -, Outlook: cloudy/rainy, Precipitation: (Y) or N

Specific Comments (including purge/well volume calculations if required):

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):
11/14/17 Alex Depp Alex Depp SCS

# FIELD INFORMATION FORM



Site Name: WSC  
 Site No.: 111417 Sample Point: 943 Sample ID: 120

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID: \_\_\_\_\_

**PURGE INFO**  
 PURGE DATE (MM DD YY): 11/14/17 PURGE TIME (2400 Hr Clock): 9:43 ELAPSED HRS (hrs:min): 120  
 WATER VOL IN CASING (Gallons): \_\_\_\_\_ ACTUAL VOL PURGED (Gallons): \_\_\_\_\_ WELL VOLs PURGED: \_\_\_\_\_

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  Y or  N  
 Purging Device: C A-Submersible Pump D-Bailer  
 Sampling Device: C B-Peristaltic Pump E-Piston Pump  
 X-Other: \_\_\_\_\_ C-QED Bladder Pump F-Dipper/Bottle  
 Filter Device:  Y or  N 0.45 μ or \_\_\_\_\_ μ (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other \_\_\_\_\_  
 Sample Tube Type: D A-Teflon C-PVC X-Other: \_\_\_\_\_  
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC): \_\_\_\_\_ (ft/msl) Depth to Water (DTW) (from TOC) \* 3105 (ft) Groundwater Elevation (site datum, from TOC): \_\_\_\_\_ (ft/msl)  
 Total Well Depth (from TOC): \_\_\_\_\_ (ft) Stick Up (from ground elevation): \_\_\_\_\_ (ft) Casing ID: 02 (in) Casing Material: PVC  
 Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

Sample Time (2400 Hr Clock)	Rate (Unit)	pH (std)	Conductance (SC/EC) (μmhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
9:23	350	5.91	121	9.60		2.89	178.10	
9:28		5.90	122	9.66		3.25	178.10	
9:31		5.89	123	9.60		3.54	176.60	
9:34		5.92	123	9.60		3.19	176.60	
9:37		5.94	123	9.54		2.78	176.60	
9:40		5.92	123	9.60		3.05	176.60	
9:43		5.91	123	9.60	3.22	3.38	176.60	31.62

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, D.O. +/- 10%, eH/ORP +/- 25 mV, DTW Stabilize

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 11/14/17 pH (std): 5.91 CONDUCTANCE (umhos/cm @ 25°C): 123 TEMP. (°C): 9.60 TURBIDITY (ntu): 3.22 DO (mg/L-ppm): 3.38 eH/ORP (mV): 176.60 Other: FT Units: FT  
 Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: Clear Odor: None Color: - Other: -  
 Weather Conditions (required daily, or as conditions change): \_\_\_\_\_ Direction/Speed: - Outlook: Cloudy Precipitation:  Y or  N

Specific Comments (including purge/well volume calculations if required):  
I used glass solinst w/ meter

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
11/14/17 Sam Geaber [Signature] SCS  
 Date Name Signature Company



# FIELD INFORMATION FORM



Site Name: 0VS2

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Site No.: [ ] [ ] [ ] [ ] [ ] [ ]

Sample Point: MW-34A  
 Sample ID

Laboratory Use Only/Lab ID: [ ] [ ] [ ] [ ] [ ] [ ]

**PURGE INFO**

PURGE DATE (MM DD YY): 11/14/17      PURGE TIME (2400 Hr Clock): 19:55      ELAPSED HRS (hrs:min): 0:20      WATER VOL IN CASING (Gallons): [ ] [ ] [ ] [ ] [ ] [ ]      ACTUAL VOL PURGED (Gallons): [ ] [ ] [ ] [ ] [ ] [ ]      WELL VOL PURGED:

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.

**PURGE/SAMPLE EQUIPMENT**

Purging and Sampling Equipment... Dedicated:  Y or  N      Filter Device:  Y or  N      [ ] 0.45 μ or [ ] μ (circle or fill in)

Purging Device:  C      A-Submersible Pump      D-Bailer      Filter Type:  A      A-In-line Disposable      C-Vacuum

Sampling Device:  C      B-Peristaltic Pump      E-Piston Pump      B-Pressure      X-Other: [ ] [ ] [ ] [ ]

X-Other: [ ] [ ] [ ] [ ] [ ] [ ]      Sample Tube Type:  D      A-Teflon      C-PVC      X-Other: [ ] [ ] [ ] [ ]

B-Stainless Steel      D-Polypropylene

**WELL DATA**

Well Elevation (at TOC): [ ] [ ] [ ] [ ] [ ] [ ] (ft/msl)      Depth to Water (DTW) (from TOC): 399 (ft)      Groundwater Elevation (site datum, from TOC): [ ] [ ] [ ] [ ] [ ] [ ] (ft/msl)

Total Well Depth (from TOC): [ ] [ ] [ ] [ ] [ ] [ ] (ft)      Stick Up (from ground elevation): [ ] [ ] [ ] [ ] [ ] [ ] (ft)      Casing ID (in): [ ] [ ] [ ] [ ] [ ] [ ]      Casing Material: [ ] [ ] [ ] [ ] [ ] [ ]

Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (μmhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
19:55	300	6.12	201	12.35		0.51	713	
10:00		5.96	172	12.29		0.32	877	
10:03		5.93	171	12.27		0.30	926	
10:06		5.91	170	12.28		0.29	977	
10:09		5.91	169	12.28		0.38	1022	
10:12		5.90	163	12.27		0.59	1062	
10:15		5.89	162	12.25		0.69	1102	3955

Suggested range for 3 consec. readings or note Permit/State requirements:      +/- 0.2      +/- 3%      --      +/- 10%      +/- 25 mV      Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

**FIELD DATA**

SAMPLE DATE (MM DD YY): 11/14/17      pH (std): 5.89      CONDUCTANCE (umhos/cm @ 25°C): 162      TEMP. (°C): 12.25      TURBIDITY (ntu): 1.66      DO (mg/L-ppm): 0.69      eH/ORP (mV): 1102      Other: ORW      Units: FT

Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: clear      Odor: [ ]      Color: [ ]      Other: [ ]

Weather Conditions (required daily, or as conditions change): [ ]      Direction/Speed: [ ]      Outlook: rain      Precipitation:  Y or  N

**Specific Comments (including purge/well volume calculations if required):**

DUP taken at 10:25

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

11/14/17      Alexa Deep      Amy Deep      SCS

Date      Name      Signature      Company

# FIELD INFORMATION FORM



Site Name: OSL  
 Site No.:       
 Sample Point: MW-33A  
 Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:                     

**PURGE INFO**  
 PURGE DATE (MM DD YY): 11/14/17  
 PURGE TIME (2400 Hr Clock): 11:30  
 ELAPSED HRS (hrs:min): 20  
 WATER VOL IN CASING (Gallons):       
 ACTUAL VOL PURGED (Gallons):       
 WELL VOLS PURGED:     

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  or   
 Purging Device: C A-Submersible Pump D-Bailer  
 Sampling Device: C B-Peristaltic Pump E-Piston Pump  
 X-Other:      C-QED Bladder Pump F-Dipper/Bottle  
 Filter Device:  or  0.45 μ or      μ (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other       
 Sample Tube Type: D A-Teflon C-PVC X-Other:       
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC):      (ft/msl) Depth to Water (DTW) (from TOC): 402 (ft) \*  
 Groundwater Elevation (site datum, from TOC):      (ft/msl)  
 Total Well Depth (from TOC):      (ft) Stick Up (from ground elevation):      (ft)  
 Casing ID: 02 (in) Casing Material: PVC

*Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

STABILIZATION DATA (Optional)	Sample Time (2400 Hr Clock)	Rate/Unit (ml/min)	pH (std)	Conductance (SC/EC) (μmhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		11:30	350	6.40	83	9.92		11.46	630
	11:35		6.18	81	9.79		11.14	610	
	11:38		6.17	80	9.69		11.06	680	
	11:41		6.19	91	9.64		10.75	570	
	11:44		6.21	97	9.62		10.43	500	
	11:47		6.31	104	9.60		10.43	450	
	11:50	✓	6.33	109	9.60	386	10.39	520	640

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, Temp. --, Turbidity --, D.O. +/- 10%, eH/ORP +/- 25 mV, DTW Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. **If more fields above are needed, use separate sheet or form.**

FIELD DATA	SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: DTW
	11/14/17	6.33	109	9.60	386	0.39	520	640

**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: Clear Odor: None Color:      Other:       
 Weather Conditions (required daily, or as conditions change):      Direction/Speed:      Outlook: cloudy Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):     

**FIELD COMMENTS**  
\* used back against w/ meter

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
 Date: 11/14/17 Name: Sum Graber Signature: [Signature] Company: SCS

# FIELD INFORMATION FORM



Site Name: CSL  
 Site No.:      Sample Point: MW-33C  
 Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID: \_\_\_\_\_

**PURGE INFO**  
 PURGE DATE (MM DD YY): 11/14/17 PURGE TIME (2400 Hr Clock): 12:28 ELAPSED HRS (hrs:min): 20  
 WATER VOL IN CASING (Gallons): \_\_\_\_\_ ACTUAL VOL PURGED (Gallons): \_\_\_\_\_ WELL VOLS PURGED: \_\_\_\_\_  
*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  Y or  N Filter Device:  or  N 0.45 µ or \_\_\_\_\_ µ (circle or fill in)  
 Purging Device:  A-Submersible Pump  D-Bailer Filter Type:  A  B-In-line Disposable  C-Vacuum  
 B-Peristaltic Pump  E-Piston Pump  B-Pressure  X-Other \_\_\_\_\_  
 Sampling Device:  C-QED Bladder Pump  F-Dipper/Bottle Sample Tube Type:  O  A-Teflon  C-PVC  X-Other: \_\_\_\_\_  
 X-Other: \_\_\_\_\_

**WELL DATA**  
 Well Elevation (at TOC): \_\_\_\_\_ (ft/msl) Depth to Water (DTW) (from TOC): 163 \* (ft) Groundwater Elevation (site datum, from TOC): \_\_\_\_\_ (ft/msl)  
 Total Well Depth (from TOC): \_\_\_\_\_ (ft) Stick Up (from ground elevation): \_\_\_\_\_ (ft) Casing ID: 02 (in) Casing Material: PVC  
*Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
<u>12:28</u>	<u>300</u>	<u>6.52</u>	<u>157</u>	<u>9.22</u>		<u>1.54</u>	<u>220</u>	
<u>12:33</u>	<u> </u>	<u>6.82</u>	<u>157</u>	<u>9.17</u>		<u>1.01</u>	<u>-710</u>	
<u>12:36</u>	<u> </u>	<u>7.03</u>	<u>157</u>	<u>9.15</u>		<u>0.63</u>	<u>-1420</u>	
<u>12:39</u>	<u> </u>	<u>7.39</u>	<u>157</u>	<u>9.13</u>		<u>0.33</u>	<u>-2030</u>	
<u>12:42</u>	<u> </u>	<u>7.65</u>	<u>157</u>	<u>9.11</u>		<u>0.18</u>	<u>-2170</u>	
<u>12:45</u>	<u> </u>	<u>7.71</u>	<u>157</u>	<u>9.11</u>		<u>0.16</u>	<u>-2240</u>	
<u>12:48</u>	<u>√</u>	<u>7.81</u>	<u>157</u>	<u>9.11</u>	<u>221</u>	<u>0.16</u>	<u>-2300</u>	<u>165</u>

*Suggested range for 3 consec. readings or note Permit/State requirements:*  
 pH: +/- 0.2     Conductance: +/- 3%     Temp: --     Turbidity: --     D.O.: +/- 10%     eH/ORP: +/- 25 mV     DTW: Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. **If more fields above are needed, use separate sheet or form.**

**FIELD DATA**

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: DTW
<u>11/14/17</u>	<u>7.81</u>	<u>157</u>	<u>9.11</u>	<u>221</u>	<u>0.16</u>	<u>-2300</u>	<u>165</u>

**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)

Sample Appearance: Clear Odor: None Color: - Other: -  
 Weather Conditions (required daily, or as conditions change): \_\_\_\_\_ Direction/Speed: - Outlook: rain Precipitation:  Y or  N

Specific Comments (including purge/well volume calculations if required): \_\_\_\_\_

**FIELD COMMENTS**  
\* used black solinst w/ meter

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
11/14/17 Sam Graber \_\_\_\_\_ SCS  
 Date Name Signature Company

# FIELD INFORMATION FORM



Site Name: WJL  
 Site No.: 111417 Sample Point: MW-15R  
 Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:  
 \_\_\_\_\_

**PURGE INFO**  
 PURGE DATE (MM DD YY): 11/14/17 PURGE TIME (2400 Hr Clock): 1358 ELAPSED HRS (hrs:min): 20  
 WATER VOL IN CASING (Gallons): \_\_\_\_\_ ACTUAL VOL PURGED (Gallons): \_\_\_\_\_ WELL VOLS PURGED: \_\_\_\_\_  
 Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment ... Dedicated:  Y or  N  
 Purging Device: C A-Submersible Pump D-Bailer  
 Sampling Device: C B-Peristaltic Pump E-Piston Pump  
 X-Other: \_\_\_\_\_ C-QED Bladder Pump F-Dipper/Bottle  
 Filter Device:  Y or  N 0.45 μ or \_\_\_\_\_ μ (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other \_\_\_\_\_  
 Sample Tube Type: D A-Teflon C-PVC X-Other: \_\_\_\_\_  
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC): \_\_\_\_\_ (ft/msl) Depth to Water (DTW) (from TOC): X 1877 (ft) Groundwater Elevation (site datum, from TOC): \_\_\_\_\_ (ft/msl)  
 Total Well Depth (from TOC): \_\_\_\_\_ (ft) Stick Up (from ground elevation): \_\_\_\_\_ (ft) Casing ID: 02 (in) Casing Material: PVC  
 Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

Sample Time (2400 Hr Clock)	Rate/Unit (ml/min)	pH (std)	Conductance (SC/EC) (μmhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
13:58	350	7.27	153	10.14		2.26	930	
14:03		6.98	153	10.16		1.41	1010	
14:06		6.71	152	10.18		0.93	1030	
14:09		6.62	151	10.18		0.89	1130	
14:12		6.57	152	10.18		0.86	1140	
14:15		6.52	152	10.19	1.19	0.65	1170	
14:18	V	6.51	152	10.19	1.19	0.67	1180	1180
:								
:								
:								

Suggested range for 3 consec. readings or note Permit/State requirements:  
 pH: +/- 0.2    Conductance: +/- 3%    Temp: --    Turbidity: --    D.O.: +/- 10%    eH/ORP: +/- 25 mV    DTW: Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: DTW
11/14/17	6.51	152	10.19	1.19	0.67	1180	1180

Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: clear Odor: None Color: - Other: -  
 Weather Conditions (required daily, or as conditions change): \_\_\_\_\_ Direction/Speed: 5 mph @ SW Outlook: cloudy Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):  
Dup 2 collected here @ 1445  
\* used back against WL meter

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
11/14/17 Sam Graber [Signature] WJL  
 Date Name Signature Company

# FIELD INFORMATION FORM



Site Name: 05C  
 Site No.:                                          
 Sample Point: MW-35  
 Sample ID:     

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:     

**PURGE INFO**

PURGE DATE (MM DD YY): 11 15 17 PURGE TIME (2400 Hr Clock): 9:05 ELAPSED HRS (hrs:min):   20  
 WATER VOL IN CASING (Gallons):      ACTUAL VOL PURGED (Gallons):      WELL VOLS PURGED:     

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**

Purging and Sampling Equipment... Dedicated:  Y or  N  
 Filter Device:  or  N | 0.45 μ or      μ (circle or fill in)  
 Purging Device:  C A-Submersible Pump  D-Bailer A-In-line Disposable C-Vacuum  
 B-Peristaltic Pump  E-Piston Pump B-Pressure X-Other       
 Sampling Device:  C C-QED Bladder Pump  F-Dipper/Bottle  
 X-Other:      Filter Type: A  
 Sample Tube Type: D A-Teflon C-PVC X-Other:       
 B-Stainless Steel D-Polypropylene

**WELL DATA**

Well Elevation (at TOC)      (ft/mst) Depth to Water (DTW) (from TOC) 72.09 (ft) Groundwater Elevation (site datum, from TOC)      (ft/mst)  
 Total Well Depth (from TOC)      (ft) Stick Up (from ground elevation)      (ft) Casing ID 04 (in) Casing Material PVC  
*Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (μmhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
9:05	300	6.93	161	10.37		5.66	207.3	
9:10		6.69	161.0	9.87		5.66	189.5	
9:13		6.75	161	9.89		5.63	197.2	
9:16		6.92	161	9.84		5.60	186.7	
9:19		6.97	161.0	9.84		5.59	184.7	
9:22		6.93	161	9.84		5.59	193.2	
9:25		6.98	161	9.83	2.81	5.56	181.7	72.15

Suggested range for 3 consec. readings or note Permit/State requirements:  
 pH: +/- 0.2      Conductance: +/- 3%      Temp: --      Turbidity: --      D.O.: +/- 10%      eH/ORP: +/- 25 mV      DTW: Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. **If more fields above are needed, use separate sheet or form.**

**FIELD DATA**

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: <u>DTW</u>
11 15 17	6.98	161	9.83	2.81	5.56	181.7	72.15

Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: Clear Odor: None Color:    Other:     
 Weather Conditions (required daily, or as conditions change):    Direction/Speed:    Outlook: cloudy Precipitation: Y or N  
 Specific Comments (including purge/well volume calculations if required):   

**FIELD COMMENTS**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

11/15/17 Sam Graber [Signature] SCS  
 Date Name Signature Company



# FIELD INFORMATION FORM



Site Name: 652L  
 Site No.:       
 Sample Point: MW-32  
 Sample ID:     

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:     

**PURGE INFO**  
 PURGE DATE (MM DD YY): 11 15 17  
 PURGE TIME (2400 Hr Clock): 10:26  
 ELAPSED HRS (hrs:min): 20  
 WATER VOL IN CASING (Gallons):       
 ACTUAL VOL PURGED (Gallons):       
 WELL VOLs PURGED:     

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  Y or  N  
 Purging Device: C A-Submersible Pump D-Bailer  
 Sampling Device: C B-Peristaltic Pump E-Piston Pump  
 X-Other:      C-QED Bladder Pump F-Dipper/Bottle  
 Filter Device:  Y or  N 0.45 μ or      μ (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other       
 Sample Tube Type: D A-Teflon C-PVC X-Other:       
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC):      (ft/msl)  
 Depth to Water (DTW) (from TOC): 097 (ft)  
 Groundwater Elevation (site datum, from TOC):      (ft/msl)  
 Total Well Depth (from TOC):      (ft)  
 Stick Up (from ground elevation):      (ft)  
 Casing ID: 02 (in)  
 Casing Material: PVC

Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (μmhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
10:26	400	6.54	262	11.79		1260	1055	
10:31		6.99	262	11.85		1044	-117	
10:34		7.00	262	11.86		1031	-122	
10:37		7.01	262	11.88		1019	-284	
10:40		6.98	262	11.88		1018	-289	
10:43		7.00	262	11.89	1.90	1016	-337	
10:46		7.01	263	11.90	1.85	1015	-366	121
:								
:								
:								

Suggested range for 3 consec. readings or note Permit/State requirements:  
 pH: +/- 0.2    Conductance: +/- 3%    Temp: --    Turbidity: --    D.O.: +/- 10%    eH/ORP: +/- 25 mV    DTW: Stabilize

Stabilization Data Fields are Optional (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 11 15 17  
 pH (std): 7.01  
 CONDUCTANCE (umhos/cm @ 25°C): 263  
 TEMP. (°C): 11.90  
 TURBIDITY (ntu): 1.85  
 DO (mg/L-ppm): 0.15  
 eH/ORP (mV): -366  
 Other: DTW  
 Units: FT  
 Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)

Sample Appearance: clear    Odor: None    Color: -    Other: -  
 Weather Conditions (required daily, or as conditions change): -    Direction/Speed: -    Outlook: cloudy    Precipitation: Y or N  
 Specific Comments (including purge/well volume calculations if required):     

**FIELD COMMENTS**  
      
      
    

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
11/15/17    Sum Graber    [Signature]    SCS  
 Date    Name    Signature    Company

# FIELD INFORMATION FORM



Site Name: DUSC

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:  
 \_\_\_\_\_

Site No.: 08WLT0  
 Sample Point: 08WLT0  
 Sample ID

**PURGE INFO**

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
11/15/17					

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.

**PURGE/SAMPLE EQUIPMENT**

Purging and Sampling Equipment... Dedicated:  Y or  N

Purging Device:  A-Submersible Pump  D-Bailer  
 B-Peristaltic Pump  E-Piston Pump  
 Sampling Device:  D C-QED Bladder Pump  F-Dipper/Bottle  
 X-Other: \_\_\_\_\_

Filter Device:  0.45 μ or \_\_\_\_\_ μ (circle or fill in)  
 Filter Type:  A  
 Sample Tube Type: \_\_\_\_\_  
 A-In-line Disposable C-Vacuum  
 B-Pressure X-Other \_\_\_\_\_  
 A-Teflon C-PVC X-Other: \_\_\_\_\_  
 B-Stainless Steel D-Polypropylene

**WELL DATA**

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)
_____ (ft/msl)	_____ (ft)	_____ (ft/msl)
Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID (in)
_____ (ft)	_____ (ft)	Casing Material _____

Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (μmhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
11:40		1 <sup>st</sup> 9.7	4818	10.40	6.02	5.47	490.9	
		2 <sup>nd</sup>						
		3 <sup>rd</sup>						
		4 <sup>th</sup>						

Suggested range for 3 consec. readings or note Permit/State requirements:  
 pH: +/- 0.2  
 Conductance: +/- 3%  
 Temp: --  
 Turbidity: --  
 D.O.: +/- 10%  
 eH/ORP: +/- 25 mV  
 DTW: Stabilize

Stabilization Data Fields are Optional (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

**FIELD DATA**

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units
11/15/17	9.7	4818	10.40	6.02	5.47	490.9	

Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: clear Odor: yes Color: off-white Other: -  
 Weather Conditions (required daily, or as conditions change): \_\_\_\_\_ Direction/Speed: - Outlook: cloudy Precipitation:  Y or  N

**FIELD COMMENTS**

Specific Comments (including purge/well volume calculations if required):  
small to moderate amount of floating black particulate in sample.

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
11/15/17	Sara Graber	<i>[Signature]</i>	SCS

# FIELD INFORMATION FORM



Site Name: \_\_\_\_\_  
 Site No.: \_\_\_\_\_ Sample Point: L-INF  
Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:  
 \_\_\_\_\_

**PURGE INFO**

PURGE DATE (MM DD YY): 11/15/17 PURGE TIME (2400 Hr Clock): 11:45 ELAPSED HRS (hrs:min): 11:45 WATER VOL IN CASING (Gallons): \_\_\_\_\_ ACTUAL VOL PURGED (Gallons): \_\_\_\_\_ WELL VOLs PURGED: \_\_\_\_\_

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.

**PURGE/SAMPLE EQUIPMENT**

Purging and Sampling Equipment... Dedicated:  Y or  N Filter Device:  Y or  N 0.45  $\mu$  or \_\_\_\_\_  $\mu$  (circle or fill in)  
 Purging Device:  F A-Submersible Pump D-Bailer Filter Type: A A-In-line Disposable C-Vacuum  
 Sampling Device:  F B-Peristaltic Pump E-Piston Pump B-Pressure X-Other \_\_\_\_\_  
 X-Other: \_\_\_\_\_ C-QED Bladder Pump F-Dipper/Bottle A-Teflon C-PVC X-Other: \_\_\_\_\_  
 Sample Tube Type: \_\_\_\_\_ B-Stainless Steel D-Polypropylene

**WELL DATA**

Well Elevation (at TOC): \_\_\_\_\_ (ft/msl) Depth to Water (DTW) (from TOC): \_\_\_\_\_ (ft) Groundwater Elevation (site datum, from TOC): \_\_\_\_\_ (ft/msl)  
 Total Well Depth (from TOC): \_\_\_\_\_ (ft) Stick Up (from ground elevation): \_\_\_\_\_ (ft) Casing ID \_\_\_\_\_ (in) Casing Material: \_\_\_\_\_

Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) ( $\mu$ mhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
<u>11:45</u>		<u>7.28</u>	<u>4588</u>	<u>11.45</u>	<u>2802</u>	<u>1.56</u>	<u>930</u>	

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, DO +/- 10%, eH/ORP +/- 25 mV, DTW Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

**FIELD DATA**

SAMPLE DATE (MM DD YY): 11/15/17 pH (std): 7.28 CONDUCTANCE ( $\mu$ mhos/cm @ 25°C): 4588 TEMP. (°C): 11.45 TURBIDITY (ntu): 2802 DO (mg/L-ppm): 1.56 eH/ORP (mV): 930 Other: \_\_\_\_\_ Units: \_\_\_\_\_

Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: L. yellow Odor: yes Color: L. yellow Other: \_\_\_\_\_  
 Weather Conditions (required daily, or as conditions change): \_\_\_\_\_ Direction/Speed: --- Outlook: cloudy Precipitation:  Y or  N  
 Specific Comments (including purge/well volume calculations if required): \_\_\_\_\_

**FIELD COMMENTS**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

11/15/17 Sam Graber [Signature] SCS  
 Date Name Signature Company



**GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM**

Conductivity	pH4	pH 7	DO	Turbidity	Comments/Exceptions
Date	10/13/17				
Time	9:50				
Weather (sky or precip, temp)	Cloudy / L. rain				
Type of Calibration	Standard	Standard	Standard	Standard	Standard
Standard Value	1413	4.01	7.00	100% or ~8.5	1000, 10, 0.2 800, 100, 20, <0.1
Pre-Cal Reading	1407	3.62	6.96	10.01	
Post Cal Reading	1413	4.01	7.00	6.5	989.6, 11.43, 0.0
Discrepancy	No				
Calib. Successful?	Yes				
Calibration by	SEB				
Instrument Type, ID	MP20	/	YSI 556	MicoTPW / HACH2000	
Calibration Location	DUSL				

\* If Direct Reading is Unavailable, Assume pressure = 760 mm - 2.5 (altitude in ft/100)

**GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM**

	Conductivity	pH4	pH7	DO	Turbidity	Comments/Exceptions
Date	11/13/17					
Time	9:50					
Weather (sky or precip, temp)	cloudy rainy					
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.01	7.00	100% or ~8.5	1000, 10, 0.2 800, 100, 20, <0.1	
Pre-Cal Reading	1398	3.91	7.05		7.03, 9.63, 20.8, 1.13	
Post Cal Reading	1413	4.01	7.00	8.5		
Discrepancy	No					
Calib. Successful?	Yes					
Calibration by	ALXO DEEP					
Instrument Type, ID	MP20	/	YSI 556		MicoTPW / HACH2000	
Calibration Location	OVSL					

\* If Direct Reading is Unavailable, Assume pressure = 760 mm - 2.5 (altitude in ft/100)

**GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM**

	Conductivity	pH4	pH 7	DO	Turbidity	Comments/Exceptions
Date	11/14/17					
Time	7:15					
Weather (sky or precip, temp)	rainy					
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.01	7.00	100% or ~8.5	1000, 10, 0.2 800, 100, 20, <0.1	
Pre-Cal Reading	1426	4.26	7.22	9.32		
Post Cal Reading	1413	4.01	7.00	9.50	736.6, 10.14, 2.0	
Discrepancy	N.					
Calib. Successful?	yes					
Calibration by	SEB					
Instrument Type, ID	MP20 /		YSI 556		MicoTPW / HACH2000	
Calibration Location	OUSA					

\* If Direct Reading is Unavailable, Assume pressure = 760 mm - 2.5 (altitude in ft/100)

**GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM**

	Conductivity	pH4	pH7	DO	Turbidity	Comments/Exceptions
Date	11/14/17					
Time	745					
Weather (sky or precip, temp)	RAIN / OVERCAST					
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.01	7.00	100% or ~8.5	1000, 10, 0.2 800, 100, 20, <0.1	
Pre-Cal Reading	1432	3.95	6.94	9.53		
Post Cal Reading	1413	4.01	7.00	8.5	734.11, 30.2, 144	
Discrepancy	No					
Calib. Successful?	yes					
Calibration by	Alexa Deep					
Instrument Type, ID	MP20	/	YSI 556		MicoTPW / HACH2000	
Calibration Location	OVSL					

\* If Direct Reading is Unavailable, Assume pressure = 760 mm - 2.5 (altitude in ft/100)

**GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM**

Conductivity	pH4	pH 7	DO	Turbidity	Comments/Exceptions
Date	11/15/17				
Time	800				
Weather (sky or precip, temp)	cloudy / rainy				
Type of Calibration	Standard	Standard	Standard	Standard	Standard
Standard Value	1413	4.01	7.00	100% or ~8.5	1000, 10, 0.2 800, 100, 20, <0.1
Pre-Cal Reading	1407	3.91	7.00	8.32	
Post Cal Reading	1413	4.01	7.00	8.50	904.3, 1691, 0.91
Discrepancy	No				
Calib. Successful?	yes				
Calibration by	SEB				
Instrument Type, ID	MP20	/	XSI 556	MicoTPW / HACH2000	
Calibration Location	OBSL				

\* If Direct Reading is Unavailable, Assume pressure = 760 mm - 2.5 (altitude in ft/100)



## SCS ENGINEERS

February 27, 2017  
File No. 04204027.20

**Subject: First Quarter 2017 Compliance Monitoring Event  
Olympic View Sanitary Landfill, Kitsap County, Washington**

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Sampling Event Dates: 2/21/17 through 2/23/17  
Personnel: Sam Graber

### NOTES/SAMPLING DECODING:

- SCS sampled the revised list of wells approved by Ecology in their January 2017 Periodic Review report. A revised SAP will be issued for the OVSL prior to the second quarter 2017 monitoring event.
- Dedicated pumps were used for purging and sampling all wells.
- Duplicate samples were collected at MW-42 (DUP1) and MW-13A (DUP2).
- Geotech and Solinst water level meters were used to record all water level elevations.
- In addition to the monitoring wells where groundwater was collected for chemical analysis, additional wells were monitored for groundwater level elevations. A summary of measured water levels are included with the field documentation.
- Several well locks noted to need replacement on the site.
- The samples were sent to TestAmerica Denver for analysis at the close of each sampling day, except samples for low level arsenic which were held until the end of the sampling event and provided to Analytical Resources, Inc. in Tukwila, Washington.

Sample Date	Location ID	Sample ID	Comments
2/21/2017	MW-43	0217-01	
2/21/2017	MW-42	0217-02	
2/21/2017	MW-42	0217-03	DUP-1
2/21/2017	MW-15R	0217-04	
2/21/2017	MW-34C	0217-05	
2/21/2017	MW-34A	0217-06	
2/22/2017	MW-13A	0217-07	
2/22/2017	MW-13A	0217-08	DUP-2
2/22/2017	MW-13B	0217-09	
2/22/2017	MW-35	0217-10	

Sample Date	Location ID	Sample ID	Comments
2/22/2017	MW-16	0217-11	
2/22/2017	MW-39	0217-12	
2/22/2017	MW-32	0217-13	
2/20/2017	LP-LCD	0217-14	Pond liner underdrain sample



# FIELD INFORMATION FORM



Site Name: 022117  
 Site No.: 1000  
 Sample Point: MW-43  
 Sample ID: \_\_\_\_\_

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID: \_\_\_\_\_

**PURGE INFO**  
 PURGE DATE (MM DD YY): 022117  
 PURGE TIME (2400 Hr Clock): 10:00  
 ELAPSED HRS (hrs:min): 00:00  
 WATER VOL IN CASING (Gallons): \_\_\_\_\_  
 ACTUAL VOL PURGED (Gallons): \_\_\_\_\_  
 WELL VOLS PURGED: \_\_\_\_\_

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  Y or  N  
 Purging Device: C A-Submersible Pump D-Bailer  
 Sampling Device: C B-Peristaltic Pump E-Piston Pump  
 C-QED Bladder Pump F-Dipper/Bottle  
 X-Other: \_\_\_\_\_  
 Filter Device: R or  N | 0.45 μ or \_\_\_\_\_ μ (circle or fill in)  
 Filter Type: A  
 A-In-line Disposable C-Vacuum  
 B-Pressure X-Other: \_\_\_\_\_  
 A-Teflon C-PVC X-Other: \_\_\_\_\_  
 B-Stainless Steel D-Polypropylene  
 Sample Tube Type: D

**WELL DATA**  
 Well Elevation (at TOC): \_\_\_\_\_ (ft/msl)  
 Depth to Water (DTW) (from TOC): 2205 (ft)  
 Groundwater Elevation (site datum, from TOC): \_\_\_\_\_ (ft/msl)  
 Total Well Depth (from TOC): \_\_\_\_\_ (ft)  
 Stick Up (from ground elevation): \_\_\_\_\_ (ft)  
 Casing ID: \_\_\_\_\_ (in)  
 Casing Material: \_\_\_\_\_  
 Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

STABILIZATION DATA (Optional)	Sample Time (2400 Hr Clock)	Rate/Unit ml/min	pH (std)	Conductance (SC/EC) (μmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		<u>10:08</u>	<u>340</u>	<u>5.64</u>	<u>35</u>	<u>6.99</u>		<u>17.83</u>	<u>196.0</u>
	<u>10:13</u>		<u>5.78</u>	<u>35</u>	<u>6.96</u>		<u>17.93</u>	<u>191.8</u>	
	<u>10:16</u>		<u>5.81</u>	<u>35</u>	<u>6.95</u>	<u>7.38</u>	<u>17.87</u>	<u>191.9</u>	
	<u>10:19</u>		<u>5.85</u>	<u>35</u>	<u>6.95</u>		<u>17.90</u>	<u>192.0</u>	
	<u>10:22</u>		<u>5.87</u>	<u>35</u>	<u>6.95</u>	<u>1.23</u>	<u>17.93</u>	<u>191.9</u>	
	<u>10:23</u>		<u>5.88</u>	<u>35</u>	<u>6.95</u>		<u>17.90</u>	<u>193.1</u>	
	<u>10:28</u>		<u>5.89</u>	<u>35</u>	<u>6.95</u>	<u>5.85</u>	<u>17.86</u>	<u>191.4</u>	<u>2212</u>

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, D.O. +/- 10%, eH/ORP +/- 25 mV, DTW Stabilize

Stabilization Data Fields are Optional (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

FIELD DATA	SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: <u>Time</u>
	<u>022117</u>	<u>5.89</u>	<u>35</u>	<u>6.95</u>	<u>5.85</u>	<u>7.86</u>	<u>191.4</u>	<u>1028</u>

Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: Clear Odor: No Color: \_\_\_\_\_ Other: \_\_\_\_\_  
 Weather Conditions (required daily, or as conditions change): \_\_\_\_\_ Direction/Speed: \_\_\_\_\_ Outlook: \_\_\_\_\_ Precipitation: Y or  N  
 Specific Comments (including purge/well volume calculations if required): \_\_\_\_\_

**FIELD COMMENTS**  
Orange particulates in water at beginning, performed extended purge. water cleared up during purge. while filling sample jars water turned slightly orange for metals containers.

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
2,21,17 Sam Graber [Signature] SCS  
 Date Name Signature Company

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

# FIELD INFORMATION FORM



Site Name: OVSL  
 Site No.:       
 Sample Point: MW-42  
 Sample ID:     

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e., with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:     

**PURGE INFO**  
 PURGE DATE (MM DD YY): 022117  
 PURGE TIME (2400 Hr Clock): 11:07  
 ELAPSED HRS (hrs:min):   :23  
 WATER VOL IN CASING (Gallons):       
 ACTUAL VOL PURGED (Gallons):       
 WELL VOLs PURGED:     

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  (Y) or  (N)  
 Purging Device: C A-Submersible Pump D-Bailer  
 B-Peristaltic Pump E-Piston Pump  
 Sampling Device: C C-QED Bladder Pump F-Dipper/Bottle  
 X-Other:       
 Filter Device:  (Y) or  (N) 0.45 μ or      μ (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other:       
 Sample Tube Type: D A-Teflon C-PVC X-Other:       
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC)      (ft/msl) Depth to Water (DTW) (from TOC) 2611 (ft)  
 Groundwater Elevation (site datum, from TOC)      (ft/msl)  
 Total Well Depth (from TOC)      (ft) Stick Up (from ground elevation)      (ft)  
 Casing ID      (in) Casing Material       
*Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (μmhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
11:10	1 <sup>st</sup>	6.50	507	12.12		0.84	6.8	
11:15	2 <sup>nd</sup>	6.57	514	12.19		0.43	-297	
11:18	3 <sup>rd</sup>	6.57	513	12.21		0.35	-352	
11:21	4 <sup>th</sup>	6.58	512	12.20		0.32	-383	
11:24		6.58	510	12.19		0.29	-438	
11:27		6.58	510	12.19		0.26	-463	
11:30		6.58	509	12.20	2.03	0.22	-496	2615

Suggested range for 3 consec. readings or note Permit/State requirements:  
 pH: +/- 0.2      Conductance: +/- 3%      Temp: --      Turbidity: --      D.O.: +/- 10%      eH/ORP: +/- 25 mV      DTW: Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. **If more fields above are needed, use separate sheet or form.**

**FIELD DATA**

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: <u>fine</u>
022117	6.58	509	12.20	2.03	0.22	-496	Units: <u>1130</u>

**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: clear      Odor:           Color:           Other:       
 Weather Conditions (required daily, or as conditions change):           Direction/Speed:           Outlook:           Precipitation:  (Y) or  (N)

Specific Comments (including purge/well volume calculations if required):  
Dup 1 taken @ 1140

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
2/21/17      Sam Gabe                SCS  
 Date      Name      Signature      Company

# FIELD INFORMATION FORM



Site Name: OSL  
Site No.:                                
Sample Point: MW-15R  
Sample ID

**This Waste Management Field Information Form is Required**  
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:  
\_\_\_\_\_

PURGE INFO  
PURGE DATE (MM DD YY): 022117  
PURGE TIME (2400 Hr Clock): 1235  
ELAPSED HRS (hrs:min):      23  
WATER VOL IN CASING (Gallons):                 
ACTUAL VOL PURGED (Gallons):                 
WELL VOLS PURGED:                 
*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

PURGE/SAMPLE EQUIPMENT  
Purging and Sampling Equipment... Dedicated:  (Y) or  (N)  
Filter Device:  (Y) or  (N) | 0.45  $\mu$  or \_\_\_\_\_  $\mu$  (circle or fill in)  
Purging Device: C | A-Submersible Pump | D-Bailer  
Sampling Device: C | B-Peristaltic Pump | E-Piston Pump  
C-QED Bladder Pump | F-Dipper/Bottle  
X-Other: \_\_\_\_\_  
Filter Type: A | A-In-line Disposable | C-Vacuum  
B-Pressure | X-Other: \_\_\_\_\_  
Sample Tube Type: D | A-Teflon | C-PVC  
B-Stainless Steel | D-Polypropylene | X-Other: \_\_\_\_\_

WELL DATA  
Well Elevation (at TOC):                (ft/msl) | Depth to Water (DTW) (from TOC): 1778 (ft) | Groundwater Elevation (site datum, from TOC):                (ft/msl)  
Total Well Depth (from TOC):                (ft) | Stick Up (from ground elevation):                (ft) | Casing ID:      (in) | Casing Material: \_\_\_\_\_  
*Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

STABILIZATION DATA (Optional)	Sample Time (2400 Hr Clock)	Rate/Unit ml/min	pH (std)	Conductance (SC/EC) ( $\mu$ mhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		<u>12:37</u>	<u>390</u>	<u>6.94</u>	<u>160</u>	<u>10.19</u>		<u>12.42</u>	<u>901</u>
	<u>12:42</u>		<u>6.78</u>	<u>161</u>	<u>10.25</u>		<u>1.71</u>	<u>1032</u>	
	<u>12:45</u>		<u>6.71</u>	<u>162</u>	<u>10.27</u>		<u>1.08</u>	<u>1216</u>	
	<u>12:43</u>		<u>6.68</u>	<u>161</u>	<u>10.29</u>		<u>1.12</u>	<u>1288</u>	
	<u>12:51</u>		<u>6.67</u>	<u>161</u>	<u>10.28</u>		<u>1.15</u>	<u>1338</u>	
	<u>12:54</u>		<u>6.66</u>	<u>161</u>	<u>10.28</u>		<u>1.15</u>	<u>1376</u>	
	<u>12:57</u>	<u>↓</u>	<u>6.66</u>	<u>161</u>	<u>10.28</u>	<u>1.82</u>	<u>1.14</u>	<u>1408</u>	<u>17.82</u>

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, Temp. -, Turbidity -, DO +/- 10%, eH/ORP +/- 25 mV, DTW Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

FIELD DATA  
SAMPLE DATE (MM DD YY): 022117 | pH (std): 6.66 | CONDUCTANCE ( $\mu$ mhos/cm @ 25°C): 161 | TEMP. (°C): 10.28 | TURBIDITY (ntu): 1.82 | DO (mg/L-ppm): 1.14 | eH/ORP (mV): 1408 | Other: Time Units: \_\_\_\_\_  
**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: Clear | Odor: No | Color: - | Other: -  
Weather Conditions (required daily, or as conditions change): \_\_\_\_\_ | Direction/Speed: - | Outlook: - | Precipitation:  (Y) or  (N)  
Specific Comments (including purge/well volume calculations if required): \_\_\_\_\_

FIELD COMMENTS  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
2/21/17 | Sam Graber | [Signature] | SCS  
Date | Name | Signature | Company

# FIELD INFORMATION FORM



Site Name: 0VSL  
 Site No.:       
 Sample Point: MW-34C  
Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:                     

**PURGE INFO**  
 PURGE DATE (MM DD YY): 022117  
 PURGE TIME (2400 Hr Clock): 1338  
 ELAPSED HRS (hrs:min):      32  
 WATER VOL IN CASING (Gallons):                 
 ACTUAL VOL PURGED (Gallons):                 
 WELL VOLs PURGED:               

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  Y or  N  
 Purging Device: C A-Submersible Pump D-Bailer  
 B-Peristaltic Pump E-Piston Pump  
 Sampling Device: C C-QED Bladder Pump F-Dipper/Bottle  
 X-Other:                       
 Filter Device:  Y or  N 0.45 μ or      μ (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other:                       
 Sample Tube Type: D A-Teflon C-PVC X-Other:                       
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC)      (ft/msl) Depth to Water (DTW) (from TOC) 3991 (ft) Groundwater Elevation (site datum, from TOC)      (ft/msl)  
 Total Well Depth (from TOC)      (ft) Stick Up (from ground elevation)      (ft) Casing ID      (in) Casing Material       
Note: Total Well Depth, Stick Up, Casing Id, etc, are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

STABILIZATION DATA (Optional)	Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (μmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		13:40	350	6.78	244	12.78		0.94	634
	13:45		6.78	244	12.72		0.69	466	
	13:50		6.78	243	12.77	719.5	0.47	330	
	13:55		6.78	243	12.77		0.36	262	
	14:01		6.78	243	12.81	319.6	0.33	237	
	14:04		6.78	243	12.85		0.31	225	3995
	14:07		6.78	242	12.82	137.0	0.29	211	
	14:10	V	6.78	243	12.82	85.8	0.28	206	

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, Temp. --, Turbidity --, D.O. +/- 10%, eH/ORP +/- 25 mV, DTW Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. **If more fields above are needed, use separate sheet or form.**

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: <u>Time</u>
022117	6.78	243	12.82	85.8	0.28	206	1410

Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: Slightly cloudy yellow Odor:                      Color:                      Other:                       
 Weather Conditions (required daily, or as conditions change):                      Direction/Speed:                      Outlook:                      Precipitation: Y or  N

Specific Comments (including purge/well volume calculations if required):  
cloudy particulates in sample. Performing extended purge.

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
2,21,17 Sam Gruber [Signature] SCS  
 Date Name Signature Company

# FIELD INFORMATION FORM



Site Name:                          0VSL  
 Site No.:                           
 Sample Point: 1Mw-34A

Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:  
  

**PURGE INFO**

<u>022117</u>	<u>1442</u>	<u>22</u>	<u>                </u>	<u>                </u>	<u>                </u>
<b>PURGE DATE</b> <small>(MM DD YY)</small>	<b>PURGE TIME</b> <small>(2400 Hr Clock)</small>	<b>ELAPSED HRS</b> <small>(hrs:min)</small>	<b>WATER VOL IN CASING</b> <small>(Gallons)</small>	<b>ACTUAL VOL PURGED</b> <small>(Gallons)</small>	<b>WELL VOLS PURGED</b>

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.

**PURGE/SAMPLE EQUIPMENT**

Purging and Sampling Equipment... Dedicated: <input checked="" type="checkbox"/> Y or <input type="checkbox"/> N	Filter Device: <input checked="" type="checkbox"/> Y or <input type="checkbox"/> N	<u>0.45</u> $\mu$ or <u>        </u> $\mu$ (circle or fill in)
Purging Device: <input type="checkbox"/> C	A-Submersible Pump	D-Bailer
<input type="checkbox"/> A	B-Peristaltic Pump	E-Piston Pump
Sampling Device: <input type="checkbox"/> C	C-QED Bladder Pump	F-Dipper/Bottle
X-Other: <u>                        </u>	Filter Type: <u>A</u>	A-In-line Disposable
	Sample Tube Type: <u>D</u>	C-Vacuum
		B-Pressure
		X-Other: <u>                        </u>
		A-Teflon
		C-PVC
		B-Stainless Steel
		D-Polypropylene

**WELL DATA**

Well Elevation (at TOC): <u>                </u> (ft/msl)	Depth to Water (DTW) (from TOC): <u>3809</u> (ft)	Groundwater Elevation (site datum, from TOC): <u>                </u> (ft/msl)
Total Well Depth (from TOC): <u>                </u> (ft)	Stick Up (from ground elevation): <u>                </u> (ft)	Casing ID: <u>                </u> (in)
		Casing Material: <u>                </u>

Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate/Unit ml/min	pH (std)	Conductance (SC/EC) ( $\mu$ mhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
<u>14:44</u>	<u>350</u>	<u>6.38</u>	<u>97</u>	<u>11.96</u>	<u>                </u>	<u>8.36</u>	<u>157.5</u>	<u>                </u>
<u>14:49</u>	<u>                </u>	<u>6.14</u>	<u>101</u>	<u>11.99</u>	<u>                </u>	<u>7.75</u>	<u>192.3</u>	<u>                </u>
<u>14:52</u>	<u>                </u>	<u>6.12</u>	<u>104</u>	<u>12.01</u>	<u>                </u>	<u>7.51</u>	<u>201.8</u>	<u>                </u>
<u>14:55</u>	<u>                </u>	<u>6.12</u>	<u>105</u>	<u>12.01</u>	<u>                </u>	<u>7.46</u>	<u>205.7</u>	<u>                </u>
<u>14:58</u>	<u>                </u>	<u>6.10</u>	<u>106</u>	<u>12.05</u>	<u>                </u>	<u>7.39</u>	<u>213.0</u>	<u>                </u>
<u>15:01</u>	<u>                </u>	<u>6.09</u>	<u>106</u>	<u>12.01</u>	<u>                </u>	<u>7.31</u>	<u>222.4</u>	<u>                </u>
<u>15:04</u>	<u>                </u>	<u>6.09</u>	<u>106</u>	<u>12.00</u>	<u>2.13</u>	<u>7.29</u>	<u>225.4</u>	<u>3810</u>
<u>                </u>	<u>                </u>	<u>                </u>	<u>                </u>	<u>                </u>	<u>                </u>	<u>                </u>	<u>                </u>	<u>                </u>
<u>                </u>	<u>                </u>	<u>                </u>	<u>                </u>	<u>                </u>	<u>                </u>	<u>                </u>	<u>                </u>	<u>                </u>
<u>                </u>	<u>                </u>	<u>                </u>	<u>                </u>	<u>                </u>	<u>                </u>	<u>                </u>	<u>                </u>	<u>                </u>

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, Temp. -, Turbidity -, D.O. +/- 10%, eH/ORP +/- 25 mV, Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. **If more fields above are needed, use separate sheet or form.**

**FIELD DATA**

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: <u>time</u>
<u>022117</u>	<u>6.09</u>	<u>106</u>	<u>12.00</u>	<u>2.13</u>	<u>7.29</u>	<u>225.4</u>	<u>1504</u>

**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: clear      Odor:                       Color:                       Other:                 

Weather Conditions (required daily, or as conditions change):      Direction/Speed:                       Outlook:                       Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):   

**FIELD COMMENTS**

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I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

2, 21, 17      Sam Gruber      [Signature]      WMS

\_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_

Date      Name      Signature      Company

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

# FIELD INFORMATION FORM



Site Name: 0VSL  
 Site No.:      Sample Point: MW-13A  
Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:                     

**PURGE INFO**  
 PURGE DATE: 02/22/17 (MM DD YY)  
 PURGE TIME: 9:10 (2400 Hr Clock)  
 ELAPSED HRS:   :  :   (hrs:min)  
 WATER VOL IN CASING:      (Gallons)  
 ACTUAL VOL PURGED:      (Gallons)  
 WELL VOLS PURGED:     

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  Y or  N  
 Purging Device: C A-Submersible Pump D-Bailer  
 B-Peristaltic Pump E-Piston Pump  
 Sampling Device: C C-QED Bladder Pump F-Dipper/Bottle  
 X-Other:                       
 Filter Device:  Y or  N 0.45  $\mu$  or       $\mu$  (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other:                       
 Sample Tube Type: D A-Teflon C-PVC X-Other:                       
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC):      (ft/msl)      Depth to Water (DTW) (from TOC): 43.89 (ft)  
 Groundwater Elevation (site datum, from TOC):      (ft/msl)  
 Total Well Depth (from TOC):      (ft)      Stick Up (from ground elevation):      (ft)  
 Casing ID:      (in)      Casing Material:     

*Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate/Unit (ml/min)	pH (std)	Conductance (SC/EC) ( $\mu$ mhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
9:12	350	6.39	170	9.14		7.17	295.8	
9:17		6.83	172	9.14		7.60	292.8	
9:20		6.92	172	9.15		7.60	236.8	
9:23		6.93	171	9.16		7.58	234.8	
9:26		6.95	171	9.15		7.57	232.1	
9:29		6.96	171	9.12		7.57	278.0	
9:32		6.97	170	9.11	1.34	7.57	274.4	43.92

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, Temp. -, Turbidity -, D.O. +/- 10%, eH/ORP +/- 25 mV, Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 02/22/17      pH (std): 6.97  
 CONDUCTANCE ( $\mu$ mhos/cm @ 25°C): 170      TEMP. (°C): 9.11  
 TURBIDITY (ntu): 1.34      DO (mg/L-ppm): 7.57  
 eH/ORP (mV): 274.4      Other: None  
 Units: 93.2

**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: clear      Odor: -      Color: -      Other: -  
 Weather Conditions (required daily, or as conditions change):      Direction/Speed: -      Outlook: -      Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):  
Dup 2 taken @ 9:40

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
2, 22, 17      Sam Gaber      [Signature]      WMS  
 Date      Name      Signature      Company



# FIELD INFORMATION FORM



Site Name: 02SL  
 Site No.:     
 Sample Point: MW-13B  
 Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID: \_\_\_\_\_

**PURGE INFO**  
 PURGE DATE (MM DD YY): 022217  
 PURGE TIME (2400 Hr Clock): 1007  
 ELAPSED HRS (hrs:min):   :23  
 WATER VOL IN CASING (Gallons):     
 ACTUAL VOL PURGED (Gallons):     
 WELL VOLS PURGED:   

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  Y or  N  
 Purging Device: C A-Submersible Pump D-Bailer  
 B-Peristaltic Pump E-Piston Pump  
 Sampling Device: C C-QED Bladder Pump F-Dipper/Bottle  
 X-Other: \_\_\_\_\_  
 Filter Device:  Y or  N | 0.45  $\mu$  or \_\_\_\_\_  $\mu$  (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other \_\_\_\_\_  
 Sample Tube Type: D A-Teflon C-PVC X-Other: \_\_\_\_\_  
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC) \_\_\_\_\_ (ft/msl)    Depth to Water (DTW) (from TOC) 5705 (ft)    Groundwater Elevation (site datum, from TOC) \_\_\_\_\_ (ft/msl)  
 Total Well Depth (from TOC) \_\_\_\_\_ (ft)    Stick Up (from ground elevation) \_\_\_\_\_ (ft)    Casing ID \_\_\_\_\_ (in)    Casing Material \_\_\_\_\_  
*Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate/Unit (mL/min)	pH (std)	Conductance (SC/EC) ( $\mu$ mhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
10:10	340	6.910	171	8.79		16.84	2511	
10:15		7.111	171	8.91		17.25	2483	
10:18		7.38	171	9.03		17.85	2425	
10:21		7.57	171	9.03		18.00	2427	
10:24		7.61	171	9.06		18.02	2428	
10:27		7.64	172	9.04		18.06	2432	5730
10:30	V	7.65	171	9.06	1.25	18.07	2435	
:								
:								
:								

Suggested range for 3 consec. readings or note Permit/State requirements:  
 pH: +/- 0.2    Conductance: +/- 3%    Temp: -    Turbidity: -    D.O.: +/- 10%    eH/ORP: +/- 25 mV    DTW: Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 022217  
 pH (std): 7.65  
 CONDUCTANCE ( $\mu$ mhos/cm @ 25°C): 171  
 TEMP. (°C): 9.06  
 TURBIDITY (ntu): 1.25  
 DO (mg/L-ppm): 18.07  
 eH/ORP (mV): 2435  
 Other: Time  
 Units: \_\_\_\_\_  
**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)

**Sample Appearance:** clear    Odor:       Color:       Other:     
**Weather Conditions** (required daily, or as conditions change):    Direction/Speed:       Outlook:       Precipitation: Y or N  
**Specific Comments** (including purge/well volume calculations if required): \_\_\_\_\_

**FIELD COMMENTS**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
2,22,17    Sam Gruber    [Signature]    SLC  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 Date    Name    Signature    Company

# FIELD INFORMATION FORM



Site Name: CSL  
 Site No.:         
 Sample Point: MW-35  
Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:  
 \_\_\_\_\_

**PURGE INFO**  
 PURGE DATE (MM DD YY): 022217  
 PURGE TIME (2400 Hr Clock): 1120  
 ELAPSED HRS (hrs:min): 22  
 WATER VOL IN CASING (Gallons):         
 ACTUAL VOL PURGED (Gallons):         
 WELL VOLS PURGED:       

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  or  N  
 Purging Device: C A-Submersible Pump D-Bailer  
 B-Peristaltic Pump E-Piston Pump  
 Sampling Device: C C-QED Bladder Pump F-Dipper/Bottle  
 X-Other: \_\_\_\_\_  
 Filter Device:  or  N 0.45 μ or \_\_\_\_\_ μ (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other: \_\_\_\_\_  
 Sample Tube Type: D A-Teflon C-PVC X-Other: \_\_\_\_\_  
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC)        (ft/msl) Depth to Water (DTW) (from TOC) 6944 (ft)  
 Groundwater Elevation (site datum, from TOC)        (ft/msl)  
 Total Well Depth (from TOC)        (ft) Stick Up (from ground elevation)        (ft)  
 Casing ID        (in) Casing Material       

*Note: Total Well Depth, Stick Up, Casing Id, etc, are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

Sample Time (2400 Hr Clock)	Rate/Unit (ml/min)	pH (std)		Conductance (SC/EC) (μmhos/cm @ 25°C)		Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1 <sup>st</sup>	2 <sup>nd</sup>	1 <sup>st</sup>	2 <sup>nd</sup>					
11:22	380	7.53		130	246	9.27		19.10	242.4	
11:27		7.32			161	10.27		17.38	240.6	
11:30		7.38			161	9.97		17.49	241.6	
11:33		7.38			161	9.96		17.51	242.6	
11:36		7.39			160	9.95		17.51	243.1	
11:39		7.39			160	9.94		17.51	243.8	
11:42		7.38			161	9.95	11.23	17.48	244.0	69.55

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, Temp. --, Turbidity --, D.O. +/- 10%, eH/ORP +/- 25 mV, DTW Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. **If more fields above are needed, use separate sheet or form.**

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: <u>Time</u>
022217	7.38	161	9.95	1.23	7.48	244.0	1842

**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: clear Odor: — Color: — Other: —  
 Weather Conditions (required daily, or as conditions change): \_\_\_\_\_ Direction/Speed: — Outlook: — Precipitation: Y or  N

Specific Comments (including purge/well volume calculations if required): \_\_\_\_\_

**FIELD COMMENTS**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
2/22/17 \_\_\_\_\_ Sam Graber \_\_\_\_\_ \_\_\_\_\_ SCS  
 Date Name Signature Company

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client. PINK - Field Copy



# FIELD INFORMATION FORM



Site Name: OVSL  
 Site No.:       
 Sample Point: MW-116  
Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID: \_\_\_\_\_

**PURGE INFO**  
 PURGE DATE (MM DD YY): 022217  
 PURGE TIME (2400 Hr Clock): 1225  
 ELAPSED HRS (hrs:min):   123  
 WATER VOL IN CASING (Gallons):       
 ACTUAL VOL PURGED (Gallons):       
 WELL VOLs PURGED:     

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  or  N  
 Purging Device: C A-Submersible Pump D-Bailer  
 Sampling Device: C B-Peristaltic Pump E-Piston Pump  
 X-Other: \_\_\_\_\_ C-QED Bladder Pump F-Dipper/Bottle  
 Filter Device:  or  N 0.45 μ or \_\_\_\_\_ μ (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other \_\_\_\_\_  
 Sample Tube Type: D A-Teflon C-PVC X-Other: \_\_\_\_\_  
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC): \_\_\_\_\_ (ft/msl) Depth to Water (DTW) (from TOC): 5461 (ft)  
 Groundwater Elevation (site datum, from TOC): \_\_\_\_\_ (ft/msl)  
 Total Well Depth (from TOC): \_\_\_\_\_ (ft) Stick Up (from ground elevation): \_\_\_\_\_ (ft)  
 Casing ID: \_\_\_\_\_ (in) Casing Material: \_\_\_\_\_  
Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate/Unit (ml/min)	pH (std)	Conductance (SC/EC) (umhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
12:28	350	7.52	109	9.04		9.44	2342	
12:33		6.57	98	9.00		8.87	2488	
12:36		6.49	96	9.01		8.93	2524	
12:39		6.45	96	8.99		8.94	2567	
12:42		6.42	96	8.98		8.94	2605	
12:45		6.42	96	9.03		8.91	2623	5470
12:48	V	6.42	47	9.01	1.61	8.92	2643	

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, D.O. +/- 10%, eH/ORP +/- 25 mV, DTW Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

**FIELD DATA**

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: <u>Time</u>
022217	6.42	97	9.01	1.61	8.92	2643	1248

**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

**Sample Appearance:** clear Odor: - Color: - Other: -  
**Weather Conditions** (required daily, or as conditions change): Direction/Speed: - Outlook: - Precipitation: Y or  N

**Specific Comments (including purge/well volume calculations if required):**  
Little thin straight particulates in water. Possibly organics?

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
2,22,17 Sam Graber [Signature] SCS  
 Date Name Signature Company



# FIELD INFORMATION FORM



Site Name: USL  
 Site No.:       
 Sample Point: MW-32  
 Sample ID:     

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:     

**PURGE INFO**  
 PURGE DATE (MM DD YY): 022217  
 PURGE TIME (2400 Hr Clock): 1430  
 ELAPSED HRS (hrs:min):   22  
 WATER VOL IN CASING (Gallons):       
 ACTUAL VOL PURGED (Gallons):       
 WELL VOLS PURGED:     

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  Y or  N  
 Purging Device: C A-Submersible Pump D-Bailer  
 Sampling Device: C B-Peristaltic Pump E-Piston Pump  
 X-Other:      C-QED Bladder Pump F-Dipper/Bottle  
 Filter Device: C or  N 0.45 μ or      μ (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other:       
 Sample Tube Type: D A-Teflon C-PVC X-Other:       
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC)      (ft/msl) Depth to Water (DTW) (from TOC) 088 (ft)  
 Groundwater Elevation (site datum, from TOC)      (ft/msl)  
 Total Well Depth (from TOC)      (ft) Stick Up (from ground elevation)      (ft)  
 Casing ID      (in) Casing Material       
*Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

STABILIZATION DATA (Optional)	Sample Time (2400 Hr Clock)	Rate/Unit (ml/min)	pH (std)	Conductance (SC/EC) (umhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		14:32	350	6.37	236	11.79		13.20	96.0
	14:37		6.70	231	11.77		1.00	26.6	
	14:40		6.72	230	11.67		10.83	19.1	
	14:43		6.73	231	11.64		10.67	14.4	
	14:46		6.74	232	11.66		10.91	11.3	
	14:49		6.77	232	11.66		10.78	10.9	
	14:52	0	6.77	231	11.64	235	10.70	11.1	
	:								
	:								
	:								

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, Temp. --, Turbidity --, D.O. +/- 10%, eH/ORP +/- 25 mV, DTW Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. **If more fields above are needed, use separate sheet or form.**

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 022217  
 pH (std): 6.77  
 CONDUCTANCE (umhos/cm @ 25°C): 231  
 TEMP. (°C): 11.64  
 TURBIDITY (ntu): 235  
 DO (mg/L-ppm): 0.70  
 eH/ORP (mV): 11.1  
 Other: 1452 Units

**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: clear Odor: - Color: - Other: -  
 Weather Conditions (required daily, or as conditions change): Direction/Speed: - Outlook: - Precipitation:  or  N

Specific Comments (including purge/well volume calculations if required):  
\* Could use clearing \*

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
2,22,17 Sam Gato [Signature] SCS  
 Date Name Signature Company

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client. PINK - Field Copy



## GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM

	Conductivity	pH4	pH 7	DO	Turbidity	Comments/Exceptions
Date	2/21/17					
Time	905					
Weather (sky or precip, temp)	overcast					
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.01	7.00	100% or ~8.5	1000, 10, 0.2 800, 100, 20, <0.1	
Pre-Cal Reading	1355	3.94	7.03			
Post Cal Reading	1413	4.01	7.00	10.12	799, 104, 22.0, 1.64	
Discrepancy	No					
Calib. Successful?	Yes					
Calibration by	SEB					
Instrument Type, ID	MP20 / YSI 556			MicoTPW / HACH2000		
Calibration Location	OUSL					

\* If Direct Reading is Unavailable, Assume pressure = 760 mm - 2.5 (altitude in ft/100)

## GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM

	Conductivity	pH4	pH 7	DO	Turbidity	Comments/Exceptions
Date	2/22/17					
Time	820					
Weather (sky or precip, temp)	overcast					
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.01	7.00	100% or ~8.5	1000, 10, 0.2 800, 100, 20, <0.1	
Pre-Cal Reading	1453	4.25	6.85			
Post Cal Reading	1413	4.01	7.00	11.36	793, 101, 21.4, 1.34	
Discrepancy	No					
Calib. Successful?	Yes					
Calibration by	SEB					
Instrument Type, ID	MP20 / YSI 556			MicoTPW / HACH2000		
Calibration Location	OUSL					

\* If Direct Reading is Unavailable, Assume pressure = 760 mm - 2.5 (altitude in ft/100)

## SCS ENGINEERS

May 26, 2017

File No. 04204027.20

**Subject: Second Quarter 2017 Compliance Monitoring Event  
Olympic View Sanitary Landfill, Kitsap County, Washington**

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Sampling Event Dates: 5/23/17 through 5/25/17

Personnel: Sam Graber & Alexa Deep

### NOTES/SAMPLING DECODING:

- SCS sampled the revised list of wells approved by Ecology in their January 2017 Periodic Review report.
- Dedicated pumps were used for purging and sampling all wells.
- Duplicate samples were collected at MW-42 (DUP 1) and MW-19C (DUP 2).
- Geotech and Solinst water level meters were used to record all water level elevations.
- In addition to the monitoring wells where groundwater was collected for chemical analysis, additional wells were monitored for groundwater level elevations. A summary of measured water levels are included with the field documentation.
- Several well locks noted to need replacement on the site.
- The samples were sent to TestAmerica Denver for analysis at the close of each sampling day, except samples for low level arsenic which were held until the end of the sampling event and provided to Analytical Resources, Inc. in Tukwila, Washington.

Sample Date	Location ID	Sample ID	Comments
5/23/2017	MW-33A	0517-01	
5/23/2017	MW-33C	0517-02	
5/23/2017	MW-42	0517-03	

Sample Date	Location ID	Sample ID	Comments
5/23/2017	MW-42	0517-04	DUP 1
5/24/2017	MW-35	0517-05	
5/24/2017	MW-16	0517-06	
5/24/2017	MW-39	0517-07	
5/24/2017	MW-15R	0517-08	
5/24/2017	MW-36A	0517-09	
5/24/2017	MW-43	0517-10	
5/24/2017	MW-13A	0517-11	
5/24/2017	MW-13B	0517-12	
5/25/2017	MW-34C	0517-13	
5/25/2017	MW-34A	0517-14	
5/25/2017	MW-32	0517-15	
5/25/2017	MW-29A	0517-16	
5/25/2017	MW-19C	0517-17	
5/25/2017	MW-19C	0517-18	DUP 2
5/31/2017	LP-LCD	0517-19	
5/31/2017	LR-1	0517-20	
5/31/2017	LR-2	0517-21	
5/31/2017	LR-3	0517-22	
5/31/2017	LR-4	0517-23	



# FIELD INFORMATION FORM



Site Name: AW 33A OUSL  
 Site No.:      Sample Point: MW-33A  
Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID: \_\_\_\_\_

**PURGE INFO**  
 PURGE DATE (MM DD YY): 052317 PURGE TIME (2400 Hr Clock): 1228 ELAPSED HRS (hrs:min): 20  
 WATER VOL IN CASING (Gallons):      ACTUAL VOL PURGED (Gallons):      WELL VOLs PURGED:       
Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  Y or  N  
 Purging Device:  C A-Submersible Pump  D-Bailer  
 Sampling Device:  C B-Peristaltic Pump  E-Piston Pump  
 X-Other: \_\_\_\_\_ C-QED Bladder Pump  F-Dipper/Bottle  
 Filter Device:  Y or  N 0.45 μ or \_\_\_\_\_ μ (circle or fill in)  
 Filter Type:  A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other \_\_\_\_\_  
 Sample Tube Type:  D A-Teflon C-PVC X-Other: \_\_\_\_\_  
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC) \_\_\_\_\_ (ft/msl) Depth to Water (DTW) (from TOC) 499 (ft) Groundwater Elevation (site datum, from TOC) \_\_\_\_\_ (ft/msl)  
 Total Well Depth (from TOC) \_\_\_\_\_ (ft) Stick Up (from ground elevation) \_\_\_\_\_ (ft) Casing ID 02 (in) Casing Material PVC  
Note: Total Well Depth, Stick Up, Casing Id, etc, are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

Sample Time (2400 Hr Clock)	Rate/Unit (ml/min)	pH (std)	Conductance (SC/EC) (μmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1228	400	7.06	133	8.78		7.50	-420	
1233		6.55	99	9.01		3.96	158	
1236		6.57	114	8.97		3.02	126	
1239		6.71	123	8.94		2.65	-54	
1242		6.84	130	8.94	1350	2.42	-1516	
1245		6.97	134	9.01		2.27	-252	
1248	✓	7.07	137	9.05	352	2.14	-318	

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, D.O. +/- 10%, eH/ORP +/- 25 mV, DTW Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. **If more fields above are needed, use separate sheet or form.**

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 052317 pH (std): 7.07 CONDUCTANCE (umhos/cm @ 25°C): 137 TEMP. (°C): 9.05 TURBIDITY (ntu): 352 DO (mg/L-ppm): 2.14 eH/ORP (mV): -318 Other: time Units: 1248  
**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: Clear Odor: None Color: - Other: -  
 Weather Conditions (required daily, or as conditions change): \_\_\_\_\_ Direction/Speed: - Outlook: Sunny Precipitation:  Y or  N  
 Specific Comments (including purge/well volume calculations if required): \_\_\_\_\_

**FIELD COMMENTS**  
orange color to sample at beginning of purge  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
5/23/17 Sam Gruber [Signature] SUS  
 Date Name Signature Company  
**DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy**

# FIELD INFORMATION FORM



Site Name: OSL  
 Site No.:       
 Sample Point: MW-33C  
 Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:     

**PURGE INFO**  
 PURGE DATE (MM DD YY): 052317  
 PURGE TIME (2400 Hr Clock): 1322  
 ELAPSED HRS (hrs:min): 20  
 WATER VOL IN CASING (Gallons):       
 ACTUAL VOL PURGED (Gallons):       
 WELL VOLS PURGED:     

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  Y or  N  
 Purging Device: C A-Submersible Pump D-Bailer  
 Sampling Device: C B-Peristaltic Pump E-Piston Pump  
 X-Other:      C-QED Bladder Pump F-Dipper/Bottle  
 Filter Device:  Y or  N 0.45 μ or      μ (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other       
 Sample Tube Type: D A-Teflon C-PVC X-Other:       
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC):      (ft/msl) Depth to Water (DTW) (from TOC): 175 (m)  
 Groundwater Elevation (site datum, from TOC):      (ft/msl)  
 Total Well Depth (from TOC):      (ft) Stick Up (from ground elevation):      (ft)  
 Casing ID: 02 (in) Casing Material: PVC  
 Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

STABILIZATION DATA (Optional)	Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (μmhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		<u>13:22</u>	<u>300 ml/min</u>	<u>7.59</u>	<u>1163</u>	<u>10.43</u>		<u>11.48</u>	<u>-63</u>
	<u>13:27</u>		<u>7.68</u>	<u>1163</u>	<u>9.56</u>		<u>2.58</u>	<u>-22.7</u>	
	<u>13:30</u>		<u>8.07</u>	<u>1164</u>	<u>9.54</u>		<u>2.16</u>	<u>-59.7</u>	
	<u>13:33</u>		<u>8.17</u>	<u>1164</u>	<u>9.54</u>	<u>2.70</u>	<u>1.93</u>	<u>-79.7</u>	
	<u>13:36</u>		<u>8.25</u>	<u>1163</u>	<u>9.54</u>		<u>1.79</u>	<u>-90.5</u>	
	<u>13:39</u>		<u>8.31</u>	<u>1163</u>	<u>9.56</u>		<u>1.60</u>	<u>-99.1</u>	
	<u>13:42</u>		<u>8.34</u>	<u>1163</u>	<u>9.57</u>	<u>1.15</u>	<u>1.60</u>	<u>-104.0</u>	

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, Temp. -, Turbidity --, D.O. +/- 10%, eH/ORP +/- 25 mV, DTW Stabilize

Stabilization Data Fields are Optional (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 052317  
 pH (std): 8.34  
 CONDUCTANCE (μmhos/cm @ 25°C): 1163  
 TEMP. (°C): 9.57  
 TURBIDITY (ntu): 1.15  
 DO (mg/L-ppm): 1.60  
 eH/ORP (mV): +1040  
 Other: fine  
 Units: 1342  
 Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: Clear Odor: None Color: - Other: -  
 Weather Conditions (required daily, or as conditions change):      Direction/Speed: - Outlook: Sunny Precipitation: Y or N  
 Specific Comments (including purge/well volume calculations if required):     

**FIELD COMMENTS**  
      
      
      
    

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
5.23.17 Sam Graber [Signature] SCS  
 Date Name Signature Company

# FIELD INFORMATION FORM



Site Name: ASL  
 Site No.:       
 Sample Point: MW-42  
 Sample ID:     

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:     

**PURGE INFO**  
 PURGE DATE (MM DD YY): 052317  
 PURGE TIME (2400 Hr Clock): 1453  
 ELAPSED HRS (hrs:min):      20  
 WATER VOL IN CASING (Gallons):       
 ACTUAL VOL PURGED (Gallons):       
 WELL VOLs PURGED:     

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  or  N  
 Purging Device:  C A-Submersible Pump  D-Bailer  
 Sampling Device:  C B-Peristaltic Pump  E-Piston Pump  
 X-Other:      C-QED Bladder Pump  F-Dipper/Bottle  
 Filter Device:  or  N 0.45 μ or      μ (circle or fill in)  
 Filter Type:  A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other:       
 Sample Tube Type:  D A-Teflon C-PVC X-Other:       
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC)      (ft/mst) Depth to Water (DTW) (from TOC) 2662 (ft)  
 Groundwater Elevation (site datum, from TOC)      (ft/mst)  
 Total Well Depth (from TOC)      (ft) Stick Up (from ground elevation)      (ft)  
 Casing ID 02 (in) Casing Material PUC  
*Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

Sample Time (2400 Hr Clock)	Rate/Unit (ml/min)	pH (std)	Conductance (SC/EC) (umhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
14:53	300	7.24	486	12.41		4.84	-74.9	
14:58		7.12	440	12.42		3.21	-75.1	
15:01		7.05	492	12.44		2.19	-75.7	
15:04		7.02	489	12.27		1.87	-76.8	
15:07		7.00	489	12.38		1.74	-76.9	
15:10		6.93	487	12.31		1.63	-75.3	
15:13	✓	6.92	484	12.31	5.00	1.55	-76.1	

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, Temp. -, Turbidity --, D.O. +/- 10%, eH/ORP +/- 25 mV, DTW Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. **If more fields above are needed, use separate sheet or form.**

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 052317  
 pH (std): 6.92  
 CONDUCTANCE (umhos/cm @ 25°C): 484  
 TEMP. (°C): 12.31  
 TURBIDITY (ntu): 5.00  
 DO (mg/L-ppm): 1.55  
 eH/ORP (mV): -76.1  
 Other: Time  
 Units: 1513

**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: clear, offwhite Odor: - Color: slightly yellow Other: -  
 Weather Conditions (required daily, or as conditions change): - Direction/Speed: - Outlook: sunny Precipitation: Y or  N

**Specific Comments (including purge/well volume calculations if required):**  
Dup 1 taken @ 1523

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
5.23.17 Sam Graham [Signature] SCS  
 Date Name Signature Company

# FIELD INFORMATION FORM



Site Name: USL  
 Site No.:                                
 Sample Point: 4W-35  
 Sample ID:                  

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID: \_\_\_\_\_

**PURGE INFO**  
 PURGE DATE (MM DD YY): 052417  
 PURGE TIME (2400 Hr Clock): 9:27  
 ELAPSED HRS (hrs:min):                    
 WATER VOL IN CASING (Gallons):                    
 ACTUAL VOL PURGED (Gallons):                    
 WELL VOLs PURGED:                  

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  Y or  N  
 Purging Device: C A-Submersible Pump D-Bailer  
 Sampling Device: C B-Peristaltic Pump E-Piston Pump  
 X-Other: \_\_\_\_\_ C-QED Bladder Pump F-Dipper/Bottle  
 Filter Device:  Y or  N              $\mu$  (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other \_\_\_\_\_  
 Sample Tube Type: D A-Teflon C-PVC X-Other: \_\_\_\_\_  
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC):             (ft/msl)  
 Depth to Water (DTW) (from TOC): 7049 (ft)  
 Groundwater Elevation (site datum, from TOC):             (ft/msl)  
 Total Well Depth (from TOC):             (ft)  
 Stick Up (from ground elevation):             (ft)  
 Casing ID: 02 (in)  
 Casing Material: PVC

*Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate/Unit (ml/min)	pH (std)	Conductance (SC/EC) ( $\mu$ mhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
9:27	350	6.81	1179	10.51		11.32	1127.3	
9:32		6.70	1166	10.12		8.83	1134.8	
9:35		6.92	1166	10.04		8.59	1121.8	
9:38		7.04	1165	10.01		8.42	1113.0	
9:41		7.10	1166	10.01	0.69	8.39	1106.8	
9:44		7.18	1166	10.01		8.30	1102.2	
9:47		7.23	1166	9.99	0.50	8.30	1100.2	

Suggested range for 3 consec. readings or note Permit/State requirements:  
 pH: +/- 0.2      Conductance: +/- 3%      Temp: -      Turbidity: -      D.O.: +/- 10%      eH/ORP: +/- 25 mV      DTW: Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 052417  
 pH (std): 7.23  
 CONDUCTANCE ( $\mu$ mhos/cm @ 25°C): 1166  
 TEMP. (°C): 9.99  
 TURBIDITY (ntu): 0.50  
 DO (mg/L-ppm): 8.30  
 eH/ORP (mV): 1002  
 Other: fine  
 Units: 947

**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: clear      Odor: none      Color: -      Other: -  
 Weather Conditions (required daily, or as conditions change): \_\_\_\_\_  
 Direction/Speed: 3 mph W      Outlook: sunny      Precipitation: Y or  N  
 Specific Comments (including purge/well volume calculations if required): \_\_\_\_\_

**FIELD COMMENTS**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
5/24/17      Sam Grator      \_\_\_\_\_      USL  
 Date      Name      Signature      Company

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client. PINK - Field Copy

# FIELD INFORMATION FORM



Site Name: 052417  
 Site No.: 1070  
 Sample Point: 14W-116  
 Sample ID: \_\_\_\_\_

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID: \_\_\_\_\_

**PURGE INFO**  
 PURGE DATE (MM DD YY): 052417  
 PURGE TIME (2400 Hr Clock): 1030  
 ELAPSED HRS (hrs:min): 20  
 WATER VOL IN CASING (Gallons): \_\_\_\_\_  
 ACTUAL VOL PURGED (Gallons): \_\_\_\_\_  
 WELL VOLS PURGED: \_\_\_\_\_

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  Y or  N  
 Purging Device: C A-Submersible Pump D-Bailer  
 Sampling Device: C B-Peristaltic Pump E-Piston Pump  
 X-Other: \_\_\_\_\_ C-QED Bladder Pump F-Dipper/Bottle  
 Filter Device:  Y or  N 0.45 μ or \_\_\_\_\_ μ (circle or fill in)  
 Filter Type: A  
 Sample Tube Type: D  
 A-In-line Disposable C-Vacuum  
 B-Pressure X-Other \_\_\_\_\_  
 A-Teflon C-PVC X-Other \_\_\_\_\_  
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC): \_\_\_\_\_ (ft/msl)  
 Depth to Water (DTW) (from TOC): 5073 (ft)  
 Groundwater Elevation (site datum, from TOC): \_\_\_\_\_ (ft/msl)  
 Total Well Depth (from TOC): \_\_\_\_\_ (ft)  
 Stick Up (from ground elevation): \_\_\_\_\_ (ft)  
 Casing ID: 02 (in)  
 Casing Material: PVC

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate/Unit (g/L/min)	pH (std)	Conductance (SC/EC) (μmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
10:30	3.00	7.07	1103	9.03		11.47	182.8	
10:35		6.36	9.9	9.38		8.89	122.6	
10:38		6.33	9.8	9.36		8.80	126.3	
10:41		6.34	9.8	9.36		8.77	127.0	
10:44		6.37	9.7	9.39		8.78	127.5	
10:47		6.38	9.8	9.35		8.79	128.6	
10:50		6.35	9.7	9.35	0.76	8.74	130.7	50.75
:								
:								
:								

Suggested range for 3 consec. readings or note Permit/State requirements:  
 pH: +/- 0.2  
 Conductance: +/- 3%  
 Temp: --  
 Turbidity: --  
 D.O.: +/- 10%  
 eH/ORP: +/- 25 mV  
 DTW: Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

**FIELD DATA**

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: <u>-line</u>
052417	6.35	9.7	9.35	0.76	8.74	130.7	Units: <u>1050</u>

**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: clear Odor: - Color: - Other: -  
 Weather Conditions (required daily, or as conditions change): \_\_\_\_\_ Direction/Speed: - Outlook: SUNNY Precipitation: Y or  N

Specific Comments (including purge/well volume calculations if required):  
Particulates in sample, small brown, some narrow string like shape, up to 3 cm long.

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
 Date: 5/24/17 Name: Sam Graber Signature: [Signature] Company: SLC

# FIELD INFORMATION FORM



Site Name: DVSL  
 Site No.:       
 Sample Point: 4W-39  
 Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:                     

**PURGE INFO**  
 PURGE DATE (MM DD YY): 05/24/17  
 PURGE TIME (2400 Hr Clock): 11:27  
 ELAPSED HRS (hrs:min): 20  
 WATER VOL IN CASING (Gallons):       
 ACTUAL VOL PURGED (Gallons):       
 WELL VOLS PURGED:     

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  or   
 Purging Device: C A-Submersible Pump D-Bailer  
 Sampling Device: C B-Peristaltic Pump E-Piston Pump  
 X-Other:      C-QED Bladder Pump F-Dipper/Bottle  
 Filter Device:  or  0.45 μ or      μ (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other       
 Sample Tube Type: D A-Teflon C-PVC X-Other:       
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC):      (ft/msl)      Depth to Water (DTW) (from TOC): 17.82 (ft)  
 Groundwater Elevation (site datum, from TOC):      (ft/msl)  
 Total Well Depth (from TOC):      (ft)      Stick Up (from ground elevation):      (ft)  
 Casing ID: 02 (in)      Casing Material: PVC  
*Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

STABILIZATION DATA (Optional)	Sample Time (2400 Hr Clock)	Rate/Unit ml/min	pH (std)	Conductance (SC/EC) (umhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		11:27	330	6.79	269	19.74		5.93	-431
	11:32	1	6.89	270	19.57		12.62	-508	
	11:35		6.88	270	19.56		12.36	-511	
	11:38		6.86	271	19.58		12.10	-507	
	11:41		6.86	267	19.57		11.95	-506	
	11:44		6.82	263	19.62		11.79	-491	
	11:47	✓	6.80	260	19.65	4.39	1.70	-479	20.71

Suggested range for 3 consec. readings or note Permit/State requirements:      +/- 0.2      +/- 3%      --      --      +/- 10%      +/- 25 mV      Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. **If more fields above are needed, use separate sheet or form.**

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 05/24/17  
 pH (std): 6.80  
 CONDUCTANCE (umhos/cm @ 25°C): 260  
 TEMP. (°C): 19.65  
 TURBIDITY (ntu): 4.39  
 DO (mg/L-ppm): 1.70  
 eH/ORP (mV): -479  
 Other: Time  
 Units: 1147  
**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: clear      Odor: No      Color: -      Other: -  
 Weather Conditions (required daily, or as conditions change):           Direction/Speed: -      Outlook: sunny      Precipitation: Y or  N  
 Specific Comments (including purge/well volume calculations if required):     

**FIELD COMMENTS**  
      
      
      
    

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
5/24/17      Sam Graber                SCS  
 Date      Name      Signature      Company



# FIELD INFORMATION FORM



Site Name: CSL  
 Site No.:                             
 Sample Point: MW-15R  
 Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID: \_\_\_\_\_

**PURGE INFO**  
 PURGE DATE: 052417 (MM DD YY)  
 PURGE TIME: 1232 (2400 Hr Clock)  
 ELAPSED HRS:          (hrs:min)  
 WATER VOL IN CASING:          (Gallons)  
 ACTUAL VOL PURGED:          (Gallons)  
 WELL VOLS PURGED:         

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ "Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged". Mark changes, record field data, below.

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  Y or  N  
 Purging Device: C A-Submersible Pump D-Bailer  
 Sampling Device: C B-Peristaltic Pump E-Piston Pump  
 X-Other: \_\_\_\_\_ C-QED Bladder Pump F-Dipper/Bottle  
 Filter Device:  Y or  N 0.45  $\mu$  or \_\_\_\_\_  $\mu$  (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other \_\_\_\_\_  
 Sample Tube Type: D A-Teflon C-PVC X-Other: \_\_\_\_\_  
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC): \_\_\_\_\_ (ft/msl)  
 Depth to Water (DTW) (from TOC): 1787 (ft)  
 Groundwater Elevation (site datum, from TOC): \_\_\_\_\_ (ft/msl)  
 Total Well Depth (from TOC): \_\_\_\_\_ (ft)  
 Stick Up (from ground elevation): \_\_\_\_\_ (ft)  
 Casing ID: \_\_\_\_\_ (in) Casing Material: \_\_\_\_\_

Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

Sample Time (2400 Hr Clock)	Rate/Unit (ml/min)	pH (std)	Conductance (SC/EC) ( $\mu$ mhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1 <sup>st</sup>	1 <sup>st</sup>	1 <sup>st</sup>	1 <sup>st</sup>	1 <sup>st</sup>	1 <sup>st</sup>	1 <sup>st</sup>
12:32	350	7.08	1166	10.41		5.16	111.2	
12:37		7.00	1164	10.39		3.86	22.6	
12:40		6.91	1163	10.37		2.28	37.5	
12:43		6.90	1162	10.38		2.02	43.9	
12:46		6.91	1161	10.37		1.95	46.2	
12:49		6.90	1162	10.37		1.94	50.2	118.07
12:52	✓	6.89	1161	10.36	1.31	1.79	54.1	

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, Temp. --, Turbidity --, D.O. +/- 10%, eH/ORP +/- 25 mV, DTW Stabilize

Stabilization Data Fields are Optional (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE ( $\mu$ mhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: <u>Time</u>
052417	6.89	1161	10.36	1.31	1.79	54.1	1252

Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: Clear Odor: None Color: \_\_\_\_\_ Other: \_\_\_\_\_  
 Weather Conditions (required daily, or as conditions change): \_\_\_\_\_ Direction/Speed: \_\_\_\_\_ Outlook: overcast Precipitation: Y or  N  
 Specific Comments (including purge/well volume calculations if required): \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
5, 24, 17 Sam Graber [Signature] SCS  
 Date Name Signature Company

# FIELD INFORMATION FORM



Site Name: DUSL

**This Waste Management Field Information Form is Required**  
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:  
\_\_\_\_\_

Site No.: [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]  
Sample Point: MW-36A

Sample ID

PURGE INFO	PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOL'S PURGED
	052417	1333 5.6	20			

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

PURGE/SAMPLE EQUIPMENT	Purging and Sampling Equipment, . . . Dedicated: <input checked="" type="checkbox"/> Y or <input type="checkbox"/> N	Filter Device: <input checked="" type="checkbox"/> Y or <input type="checkbox"/> N   0.45 $\mu$ or _____ $\mu$ (circle or fill in)
	Purging Device: <input checked="" type="checkbox"/> C   A-Submersible Pump   D-Bailer <input checked="" type="checkbox"/> C   B-Peristaltic Pump   E-Piston Pump <input type="checkbox"/> C-QED Bladder Pump   F-Dipper/Bottle X-Other: _____	Filter Type: <input checked="" type="checkbox"/> A <input type="checkbox"/> B-Pressure   X-Other: _____ <input type="checkbox"/> C-PVC   X-Other: _____ <input type="checkbox"/> D-Polypropylene Sample Tube Type: <input checked="" type="checkbox"/> D

WELL DATA	Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)
	[ ] [ ] [ ] [ ] [ ] [ ] (ft/msl)	[ ] [ ] [ ] [ ] [ ] [ ] (ft)	[ ] [ ] [ ] [ ] [ ] [ ] (ft/msl)
Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID (in)	Casing Material
[ ] [ ] [ ] [ ] [ ] [ ] (ft)	[ ] [ ] [ ] [ ] [ ] [ ] (ft)	[ ] [ ] [ ] (in)	[ ] [ ] [ ] [ ] [ ] [ ]

*Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

STABILIZATION DATA (Optional)	Sample Time (2400 Hr Clock)	Rate/Unit (mL/min)	pH (std)	Conductance (SC/EC) ( $\mu$ hos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		13:33	350	6.40	1136	9.72		6.37	47.5
	13:38		6.20	1138	9.65		4.71	113.2	
	13:41		6.17	1138	9.65		4.34	117.8	
	13:44		6.19	1139	9.64		4.22	113.9	
	13:47		6.20	1139	9.64		4.08	120.2	
	13:50		6.21	1133	9.64		4.04	120.7	
	13:53	√	6.22	1133	9.64	0.75	3.97	121.7	30.70
	:								
	:								
	:								

**Suggested range for 3 consec. readings or note Permit/State requirements:**     pH +/- 0.2     Conductance +/- 3%     Temp. -     Turbidity -     D.O. +/- 10%     eH/ORP +/- 25 mV     DTW Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. **If more fields above are needed, use separate sheet or form.**

FIELD DATA	SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE ( $\mu$ hos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: <u>Time</u>
	052417	6.22	138	9.64	0.75	3.97	121.7	1353

**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: Clear     Odor: None     Color: -     Other: -  
 Weather Conditions (required daily, or as conditions change):     Direction/Speed: -     Outlook: overcast     Precipitation: Y or  N

Specific Comments (including purge/well volume calculations if required):  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

5/24/17     Sam Graber     [Signature]     SLS  
 Date                    Name                    Signature                    Company

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client. PINK - Field Copy



# FIELD INFORMATION FORM



Site Name: 052417  
 Site No.: 1437  
 Sample Point: MW-43  
 Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms, The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID: \_\_\_\_\_

**PURGE INFO**  
 PURGE DATE (MM DD YY): 05/24/17  
 PURGE TIME (2400 Hr Clock): 1437  
 ELAPSED HRS (hrs:min): 20  
 WATER VOL IN CASING (Gallons): \_\_\_\_\_  
 ACTUAL VOL PURGED (Gallons): \_\_\_\_\_  
 WELL VOLs PURGED: \_\_\_\_\_

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  Y or  N  
 Purging Device: C A-Submersible Pump D-Bailer  
 Sampling Device: C B-Peristaltic Pump E-Piston Pump  
 X-Other: \_\_\_\_\_  
 Filter Device:  Y or  N 0.45 μ or \_\_\_\_\_ μ (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other \_\_\_\_\_  
 Sample Tube Type: D A-Teflon C-PVC X-Other: \_\_\_\_\_  
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC): \_\_\_\_\_ (ft/msl)  
 Depth to Water (DTW) (from TOC): 2343 (ft)  
 Groundwater Elevation (site datum, from TOC): \_\_\_\_\_ (ft/msl)  
 Total Well Depth (from TOC): \_\_\_\_\_ (ft)  
 Stick Up (from ground elevation): \_\_\_\_\_ (ft)  
 Casing ID (in): \_\_\_\_\_ Casing Material: \_\_\_\_\_

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate/Unit (g/L/min)	pH (std)	Conductance (SC/EC) (μmhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L-ppm)	eH/ORP (mV)	DTW (ft)
1437	390	6.119	410	8.83		5.76	1053	
1442		5.918	39	8.79	1440	3.21	1158	
1445		5.71	38	8.75		2.50	1234	
1448		5.72	38	8.75		2.46	1230	
1451		5.79	38	8.70		2.50	1204	
1454		5.83	33	8.73	175	2.26	1191	2363
1457		5.89	37	8.72	162	2.12	1194	

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, D.O. +/- 10%, eH/ORP +/- 25 mV, DTW Stabilize

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 052417  
 pH (std): 5.89  
 CONDUCTANCE (umhos/cm @ 25°C): 37  
 TEMP. (°C): 8.72  
 TURBIDITY (ntu): 162  
 DO (mg/L-ppm): 2.12  
 eH/ORP (mV): 1194  
 Other: Time  
 Units: \_\_\_\_\_

Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: UPW Odor: - Color: - Other: -  
 Weather Conditions (required daily, or as conditions change): \_\_\_\_\_ Direction/Speed: - Outlook: overcast Precipitation: Y or  N  
 Specific Comments (including purge/well volume calculations if required): overcast

**FIELD COMMENTS**  
orange particulates in sample during beginning of purge. Came back towards end of purge as well. sample water turned slightly. Slight amount of orange particulates in TSS + UOC samples.

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
5/24/17 Sam Gaber [Signature] SCS  
 Date Name Signature Company

# FIELD INFORMATION FORM



Site Name: 052417  
 Site No.: 1643 Sample Point: MW-13A  
 Sample ID: 20

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID: \_\_\_\_\_

**PURGE INFO**  
 PURGE DATE (MM DD YY): 052417 PURGE TIME (2400 Hr Clock): 1643 ELAPSED HRS (hrs:min): 20  
 WATER VOL IN CASING (Gallons): \_\_\_\_\_ ACTUAL VOL PURGED (Gallons): \_\_\_\_\_ WELL VOLs PURGED: \_\_\_\_\_  
*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  or   
 Purging Device: C A-Submersible Pump D-Bailer  
 Sampling Device: C B-Peristaltic Pump E-Piston Pump  
 X-Other: \_\_\_\_\_ C-QED Bladder Pump F-Dipper/Bottle  
 Filter Device:  or  0.45 μ or \_\_\_\_\_ μ (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other \_\_\_\_\_  
 Sample Tube Type: D A-Teflon C-PVC X-Other: \_\_\_\_\_  
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC): \_\_\_\_\_ (ft/msl) Depth to Water (DTW) (from TOC): 4394 (ft) Groundwater Elevation (site datum, from TOC): \_\_\_\_\_ (ft/msl)  
 Total Well Depth (from TOC): \_\_\_\_\_ (ft) Stick Up (from ground elevation): \_\_\_\_\_ (ft) Casing ID: \_\_\_\_\_ (in) Casing Material: \_\_\_\_\_  
*Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

Sample Time (2400 Hr Clock)	Rate/Unit (ML/min)	pH (std)	Conductance (SC/EC) (μmhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
16:43	350	6.85	1175	19.91		10.78	975	
16:48		7.07	1178	19.68		8.83	963	
16:51		7.09	1176	19.64		8.43	943	
16:54		7.15	1176	19.61		8.28	909	
16:57		7.15	1176	19.60		8.23	903	
17:00		7.17	1175	19.60		8.16	896	
17:03		7.17	1175	19.59	0.38	8.10	894	4395

Suggested range for 3 consec. readings or note Permit/State requirements:  
 pH: +/- 0.2    Conductance: +/- 3%    Temp: -    Turbidity: -    D.O.: +/- 10%    eH/ORP: +/- 25 mV    DTW: Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. **If more fields above are needed, use separate sheet or form.**

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 052417 pH (std): 7.17 CONDUCTANCE (umhos/cm @ 25°C): 1175 TEMP. (°C): 19.59 TURBIDITY (ntu): 0.38 DO (mg/L-ppm): 8.10 eH/ORP (mV): 894 Other: None  
 Units: 1703  
**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: clear Odor: none Color: - Other: -  
 Weather Conditions (required daily, or as conditions change): \_\_\_\_\_ Direction/Speed: - Outlook: overcast Precipitation: Y or N  
 Specific Comments (including purge/well volume calculations if required): \_\_\_\_\_

**FIELD COMMENTS**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
5/24/17 Sam Graber [Signature] SCS  
 Date Name Signature Company

# FIELD INFORMATION FORM



Site Name: OSL  
Site No.:      Sample Point: MW-13B Sample ID  
**This Waste Management Field Information Form is Required**  
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID: \_\_\_\_\_

**PURGE INFO**  
PURGE DATE (MM DD YY): 052417 PURGE TIME (2400 Hr Clock): 1733 ELAPSED HRS (hrs:min): 20  
WATER VOL IN CASING (Gallons): \_\_\_\_\_ ACTUAL VOL PURGED (Gallons): \_\_\_\_\_ WELL VOL PURGED (Gallons): \_\_\_\_\_

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**  
Purging and Sampling Equipment... Dedicated:  Y or  N  
Filter Device:  Y or  N | 0.45 μ | or \_\_\_\_\_ μ (circle or fill in)  
Filter Type: A  
Purging Device: C A-Submersible Pump D-Bailer  
B-Peristaltic Pump E-Piston Pump  
C-QED Bladder Pump F-Dipper/Bottle  
Sampling Device: C  
X-Other: \_\_\_\_\_  
Sample Tube Type: D  
A-In-line Disposable C-Vacuum  
B-Pressure X-Other \_\_\_\_\_  
A-Teflon C-PVC X-Other \_\_\_\_\_  
B-Stainless Steel D-Polypropylene

**WELL DATA**  
Well Elevation (at TOC) \_\_\_\_\_ (ft/msl) Depth to Water (DTW) (from TOC) 56.14 (ft)  
Groundwater Elevation (site datum, from TOC) \_\_\_\_\_ (ft/msl)  
Total Well Depth (from TOC) \_\_\_\_\_ (ft) Stick Up (from ground elevation) \_\_\_\_\_ (ft)  
Casing ID \_\_\_\_\_ (in) Casing Material \_\_\_\_\_

*Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate/Unit <i>M/L/min</i>	pH (std)	Conductance (SC/EC) (μmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
17:33	390	6.92	176	16.14		8.33	73.7	
17:38		7.45	175	19.41		8.40	78.7	
17:41		7.62	176	19.82		8.27	73.2	
17:44		7.66	176	19.79		8.19	71.2	
17:47		7.70	176	19.74		8.13	69.5	
17:50		7.72	176	19.76		8.07	67.6	
17:53	↓	7.76	175	19.76	0.56	8.03	66.5	56.14

Suggested range for 3 consec. readings or note Permit/State requirements:  
pH: +/- 0.2    Conductance: +/- 3%    Temp: --    Turbidity: --    D.O.: +/- 10%    eH/ORP: +/- 25 mV    DTW: Stabilize

**Final Field Readings are required** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: <u>None</u>
052417	7.76	175	19.76	0.56	8.03	66.5	Units: 1753

Sample Appearance: Clear    Odor: None    Color: -    Other: -  
Weather Conditions (required daily, or as conditions change): \_\_\_\_\_    Direction/Speed: -    Outlook: Cloudy    Precipitation: Y or  N

Specific Comments (including purge/well volume calculations if required): \_\_\_\_\_

**FIELD COMMENTS**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

5/24/17    Sam Graber    \_\_\_\_\_    \_\_\_\_\_  
Date    Name    Signature    Company

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

# FIELD INFORMATION FORM



Site Name: DVSC  
 Site No.:       
 Sample Point: MW-34C  
Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:     

**PURGE INFO**  
 PURGE DATE: 05/25/17 (MM DD YY)  
 PURGE TIME: 9:15 (2400 Hr Clock)  
 ELAPSED HRS:      : 20 (hrs:min)  
 WATER VOL IN CASING:      (Gallons)  
 ACTUAL VOL PURGED:      (Gallons)  
 WELL VOLS PURGED:     

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  Y or  N  
 Purging Device:  C A-Submersible Pump  D-Bailer  
 Sampling Device:  C B-Peristaltic Pump  E-Piston Pump  
 X-Other:      C-QED Bladder Pump  F-Dipper/Bottle  
 Filter Device:  Y or  N 0.45  $\mu$  or       $\mu$  (circle or fill in)  
 Filter Type: A  
 Sample Tube Type: D  
 A-In-line Disposable C-Vacuum  
 B-Pressure X-Other:       
 A-Teflon C-PVC X-Other:       
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC):      (ft/msl)  
 Depth to Water (DTW) (from TOC): 4033 (ft)  
 Groundwater Elevation (site datum, from TOC):      (ft/msl)  
 Total Well Depth (from TOC):      (ft)  
 Stick Up (from ground elevation):      (ft)  
 Casing ID:      (in)  
 Casing Material:     

Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

Sample Time (2400 Hr Clock)	Rate/Unit $\mu$ /min	pH (std)	Conductance (SC/EC) ( $\mu$ mhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
9:15	390	6.25	237	13.13		6.00	707	
9:20		6.77	236	13.12	9.78	2.87	818	
9:23		6.89	235	13.13		2.41	-29	
9:26		6.93	234	13.16	3.35	2.20	-68	
9:29		6.94	235	13.17	2.19	2.09	-85	
9:32		6.95	234	13.17	1.56	1.97	-101	
9:35		6.96	235	13.16	4.98	1.85	-116	4038

Suggested range for 3 consec. readings or note Permit/State requirements: +/- 0.2, +/- 3%, +/- 10%, +/- 25 mV, Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. **If more fields above are needed, use separate sheet or form.**

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 05/25/17  
 pH (std): 6.96  
 CONDUCTANCE ( $\mu$ mhos/cm @ 25°C): 235  
 TEMP. (°C): 13.16  
 TURBIDITY (ntu): 4.98  
 DO (mg/L-ppm): 1.85  
 eH/ORP (mV): -116  
 Other: time  
 Units: 935

**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: Clear Odor: None Color:      Other:       
 Weather Conditions (required daily, or as conditions change):      Direction/Speed:      Outlook: Cloudy Precipitation: Y or  N  
 Specific Comments (including purge/well volume calculations if required):     

**FIELD COMMENTS**  
      
      
      
    

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
5/25/17 Sam Graber      SCS  
 Date Name Signature Company

# FIELD INFORMATION FORM



Site Name: 052517  
 Site No.: 11015  
 Sample Point: MW-34A  
 Sample ID: \_\_\_\_\_

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID: \_\_\_\_\_

**PURGE INFO**  
 PURGE DATE (MM DD YY): 052517  
 PURGE TIME (2400 Hr Clock): 11015  
 ELAPSED HRS (hrs:min): 20  
 WATER VOL IN CASING (Gallons): \_\_\_\_\_  
 ACTUAL VOL PURGED (Gallons): \_\_\_\_\_  
 WELL VOLS PURGED: \_\_\_\_\_

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  or  N  
 Purging Device: C A-Submersible Pump D-Bailer  
 B-Peristaltic Pump E-Piston Pump  
 Sampling Device: C C-QED Bladder Pump F-Dipper/Bottle  
 X-Other: \_\_\_\_\_  
 Filter Device:  or  N 0.45 μ or \_\_\_\_\_ μ (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other \_\_\_\_\_  
 Sample Tube Type: D A-Teflon C-PVC X-Other: \_\_\_\_\_  
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC): \_\_\_\_\_ (ft/msl) Depth to Water (DTW) (from TOC): 38.51 (ft)  
 Groundwater Elevation (site datum, from TOC): \_\_\_\_\_ (ft/msl)  
 Total Well Depth (from TOC): \_\_\_\_\_ (ft) Stick Up (from ground elevation): \_\_\_\_\_ (ft)  
 Casing ID: \_\_\_\_\_ (in) Casing Material: \_\_\_\_\_

*Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

Sample Time (2400 Hr Clock)	Rate/Unit (ml/min)	pH (std)	Conductance (SC/EC) (μmhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
10:15	350	6.12	1111	12.70		11.00	1163	
10:20		5.95	1111	12.70		9.30	1308	
10:23		5.73	1111	12.70		8.83	1430	
10:26		5.59	1111	12.77		8.57	1536	
10:29		5.69	1111	12.74		8.42	1513	
10:32		5.77	1111	12.81		8.33	1494	
10:33	✓	5.80	1111	12.77	1.68	8.26	1503	38.55
:								
:								
:								

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, Temp. -, Turbidity -, D.O. +/- 10%, eH/ORP +/- 25 mV, DTW Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. **If more fields above are needed, use separate sheet or form.**

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 052517 pH (std): 5.80 CONDUCTANCE (umhos/cm @ 25°C): 1111 TEMP. (°C): 12.77 TURBIDITY (ntu): 1.68 DO (mg/L-ppm): 8.26 eH/ORP (mV): 1503 Other: fine  
 Units: \_\_\_\_\_

**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: clear Odor: None Color: - Other: -  
 Weather Conditions (required daily, or as conditions change): \_\_\_\_\_ Direction/Speed: - Outlook: sunny Precipitation: Y or  N

Specific Comments (including purge/well volume calculations if required): \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
5/25/17 Sam Graber [Signature] SCS  
 Date Name Signature Company

# FIELD INFORMATION FORM



Site Name: 0V52  
 Site No.: 14W-32  
 Sample Point: 14W-32  
 Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID: \_\_\_\_\_

**PURGE INFO**  
 PURGE DATE (MM DD YY): 05/25/17  
 PURGE TIME (2400 Hr Clock): 11:35  
 ELAPSED HRS (hrs:min): \_\_\_\_\_  
 WATER VOL IN CASING (Gallons): \_\_\_\_\_  
 ACTUAL VOL PURGED (Gallons): \_\_\_\_\_  
 WELL VOLs PURGED: \_\_\_\_\_

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  or   
 Purging Device: C A-Submersible Pump D-Bailer  
 Sampling Device: C B-Peristaltic Pump E-Piston Pump  
 X-Other: \_\_\_\_\_ C-QED Bladder Pump F-Dipper/Bottle  
 Filter Device:  or  0.45 μ or \_\_\_\_\_ μ (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other \_\_\_\_\_  
 Sample Tube Type: D A-Teflon C-PVC X-Other: \_\_\_\_\_  
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC): \_\_\_\_\_ (ft/msl) Depth to Water (DTW) (from TOC): 108 (ft)  
 Groundwater Elevation (site datum, from TOC): \_\_\_\_\_ (ft/msl)  
 Total Well Depth (from TOC): \_\_\_\_\_ (ft) Stick Up (from ground elevation): \_\_\_\_\_ (ft)  
 Casing ID: \_\_\_\_\_ (in) Casing Material: \_\_\_\_\_  
 Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

Sample Time (2400 Hr Clock)	Rate/Unit ml/min	pH (std)	Conductance (SC/EC) (umhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
11:35	160	6.07	245	12.39		6.52	410	
11:40		6.98	244	12.21		4.81	112	
11:43		7.07	244	12.12		2.84	-197	
11:46		7.10	245	12.12		2.56	-251	
11:49		7.15	243	12.11		2.29	-310	
11:52		7.16	245	12.14	6.72	2.10	-346	
11:55	✓	7.15	244	12.10	2.03	1.98	-363	

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, D.O. +/- 10%, eH/ORP +/- 25 mV, DTW Stabilize

Stabilization Data Fields are Optional (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

**FIELD DATA**

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: <u>fine</u> Units
05/25/17	7.15	244	12.10	2.03	1.98	-363	1155

Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: clear Odor: None Color: - Other: -  
 Weather Conditions (required daily, or as conditions change): \_\_\_\_\_ Direction/Speed: - Outlook: Sunny Precipitation: Y or  N  
 Specific Comments (including purge/well volume calculations if required): \_\_\_\_\_

**FIELD COMMENTS**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
5/25/17 Sam Galzer [Signature] SCS  
 Date Name Signature Company



# FIELD INFORMATION FORM



Site Name: 052517  
 Site No.: 1248 Sample Point: MW-29A  
Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e., with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID: \_\_\_\_\_

**PURGE INFO**  
 PURGE DATE (MM DD YY): 052517 PURGE TIME (2400 Hr Clock): 1248 ELAPSED HRS (hrs:min): 20  
 WATER VOL IN CASING (Gallons): \_\_\_\_\_ ACTUAL VOL PURGED (Gallons): \_\_\_\_\_ WELL VOLs PURGED: \_\_\_\_\_

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  or   
 Purging Device: C A-Submersible Pump D-Bailer  
 Sampling Device: C B-Peristaltic Pump E-Piston Pump  
 X-Other: \_\_\_\_\_ C-QED Bladder Pump F-Dipper/Bottle  
 Filter Device:  or  0.45  $\mu$  or \_\_\_\_\_  $\mu$  (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other \_\_\_\_\_  
 Sample Tube Type: D A-Teflon C-PVC X-Other: \_\_\_\_\_  
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC): \_\_\_\_\_ (ft/msl) Depth to Water (DTW) (from TOC): 1273 (ft) Groundwater Elevation (site datum, from TOC): \_\_\_\_\_ (ft/msl)  
 Total Well Depth (from TOC): \_\_\_\_\_ (ft) Stick Up (from ground elevation): \_\_\_\_\_ (ft) Casing ID: \_\_\_\_\_ (in) Casing Material: \_\_\_\_\_

Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) ( $\mu$ hos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
12:48	350	7.86	83	8.58		9.82	-534	
12:53		7.22	83	8.45		5.38	-219	
12:56		6.49	83	8.36		3.84	4.2	
12:59		6.47	83	8.34		3.15	7.5	
13:02		6.50	84	8.34		2.93	6.7	
13:05		6.53	83	8.33		2.63	7.0	1320
13:08	✓	6.53	84	8.33	2.99	2.50	8.7	1325

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, Temp. -, Turbidity --, D.O. +/- 10%, eH/ORP +/- 25 mV, DTW Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. **If more fields above are needed, use separate sheet or form.**

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 052517 pH (std): 6.53 CONDUCTANCE (umhos/cm @ 25°C): 84 TEMP. (°C): 8.33 TURBIDITY (ntu): 2.99 DO (mg/L-ppm): 2.50 eH/ORP (mV): 8.7 Other: Time  
 Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site). Units: 1308

Sample Appearance: Clear Odor: None Color: - Other: -  
 Weather Conditions (required daily, or as conditions change): \_\_\_\_\_ Direction/Speed: - Outlook: Sunny Precipitation: Y or  N

**FIELD COMMENTS**  
 Specific Comments (including purge/well volume calculations if required): \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
5/25/17 Sam Graber [Signature] SCS  
 Date Name Signature Company

# FIELD INFORMATION FORM



Site Name: 052  
 Site No.: 119C  
 Sample Point: MW-19C  
 Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:  
 \_\_\_\_\_

PURGE INFO: 052517     1357     20     \_\_\_\_\_     \_\_\_\_\_  
 PURGE DATE (MM DD YY)     PURGE TIME (2400 Hr Clock)     ELAPSED HRS (hrs:min)     WATER VOL IN CASING (Gallons)     ACTUAL VOL PURGED (Gallons)     WELL VOLS PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.

PURGE/SAMPLE EQUIPMENT: Purging and Sampling Equipment... Dedicated:  or   
 Purging Device: C A-Submersible Pump D-Bailer     Filter Device:  or  0.45  $\mu$  or \_\_\_\_\_  $\mu$  (circle or fill in)  
 Sampling Device: C B-Peristaltic Pump E-Piston Pump     Filter Type: A A-In-line Disposable C-Vacuum  
 X-Other: \_\_\_\_\_ C-QED Bladder Pump F-Dipper/Bottle     B-Pressure X-Other \_\_\_\_\_  
 Sample Tube Type: D A-Teflon C-PVC X-Other: \_\_\_\_\_  
 B-Stainless Steel D-Polypropylene

WELL DATA: Well Elevation (at TOC) \_\_\_\_\_ (ft/msl)     Depth to Water (DTW) (from TOC) 3141 (ft)     Groundwater Elevation (site datum, from TOC) \_\_\_\_\_ (ft/msl)  
 Total Well Depth (from TOC) \_\_\_\_\_ (ft)     Stick Up (from ground elevation) \_\_\_\_\_ (ft)     Casing ID \_\_\_\_\_ (in)     Casing Material \_\_\_\_\_

Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

Sample Time (2400 Hr Clock)	Rate/Unit (g/L/Min)	pH (std)	Conductance (SC/EC) ( $\mu$ mhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
<u>1357</u>	<u>350</u>	<u>6.88</u>	<u>1141</u>	<u>10.76</u>		<u>12.96</u>	<u>444</u>	
<u>1402</u>		<u>6.96</u>	<u>1140</u>	<u>10.78</u>		<u>12.51</u>	<u>351</u>	
<u>1405</u>		<u>7.02</u>	<u>1141</u>	<u>10.72</u>		<u>12.27</u>	<u>283</u>	
<u>1408</u>		<u>7.04</u>	<u>1139</u>	<u>10.73</u>		<u>12.05</u>	<u>245</u>	
<u>1411</u>		<u>7.06</u>	<u>1140</u>	<u>10.69</u>		<u>11.83</u>	<u>203</u>	
<u>1414</u>		<u>7.06</u>	<u>1140</u>	<u>10.64</u>		<u>11.75</u>	<u>193</u>	
<u>1417</u>	<u>✓</u>	<u>7.06</u>	<u>1139</u>	<u>10.62</u>	<u>2.44</u>	<u>11.63</u>	<u>170</u>	<u>3146</u>

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, Temp. -, Turbidity --, D.O. +/- 10%, eH/ORP +/- 25 mV, DTW Stabilize

FIELD DATA: SAMPLE DATE (MM DD YY) 052517     pH (std) 7.06     CONDUCTANCE (umhos/cm @ 25°C) 1139     TEMP. (°C) 10.62     TURBIDITY (ntu) 2.44     DO (mg/L-ppm) 11.63     eH/ORP (mV) 170     Other: time  
 Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: clear     Odor: None     Color: \_\_\_\_\_     Other: \_\_\_\_\_  
 Weather Conditions (required daily, or as conditions change): \_\_\_\_\_     Direction/Speed: -     Outlook: sunny     Precipitation: Y or  N

Specific Comments (including purge/well volume calculations if required):  
Dup 2 taken at 1425  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
5/25/17     Sam Gruber     \_\_\_\_\_     SCS  
 \_\_\_\_\_  
 \_\_\_\_\_  
 Date     Name     Signature     Company



GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM

	Conductivity	pH4	pH 7	DO	Turbidity	Comments/Exceptions
Date	9/23/17					
Time	1125					
Weather (sky or precip, temp)	Sunny					
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.01	7.00	100% or ~8.5	1000, 10, 0.2 800, 100, 20, <0.1	
Pre-Cal Reading	1412	4.03	7.02			
Post Cal Reading	1413	4.01	7.00	7.67	739, 101, 22.0, 1.34	
Discrepancy	No					
Calib. Successful?	yes					
Calibration by	SEB					
Instrument Type, ID	MP20 / YSI 556			MicoTPW / HACH2000		
Calibration Location	DSL					

\* If Direct Reading is Unavailable, Assume pressure = 760 mm - 2.5 (altitude in ft/100)

## GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM

	Conductivity	pH4	pH 7	DO	Turbidity	Comments/Exceptions
Date	5/24/17					
Time	800					
Weather (sky or precip, temp)	sunny					
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.01	7.00	100% or ~8.5	1000, 10, 0.2 800, 100, 20, <0.1	
Pre-Cal Reading	1401	4.01	6.98	10.21		
Post Cal Reading	1413	4.01	7.00	8.5	792, 101, 21.3, 0.2	
Discrepancy	No					
Calib. Successful?	yes					
Calibration by	SEB					
Instrument Type, ID	MP20 / YSI 556			MicoTPW / HACH2000		
Calibration Location	OUSL					

\* If Direct Reading is Unavailable, Assume pressure = 760 mm - 2.5 (altitude in ft/100)

## GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM

	Conductivity	pH4	pH 7	DO	Turbidity	Comments/Exceptions
Date	5/25/17					
Time	8:55					
Weather (sky or precip, temp)	Sunny					
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.01	7.00	100% or ~8.5	1000, 10, 0.2 800, 100, 20, <0.1	
Pre-Cal Reading	1403	4.02	7.01	11.3%		
Post Cal Reading	1413	4.01	7.00		789, 99.1, 20.2, 1.29	
Discrepancy	0.					
Calib. Successful?	yes					
Calibration by	SEB					
Instrument Type, ID	MP20 / YSI 556			MicoTPW / HACH2000		
Calibration Location	JUSL					

\* If Direct Reading is Unavailable, Assume pressure = 760 mm - 2.5 (altitude in ft/100)



## SCS ENGINEERS

September 11, 2017

File No. 04204027.20

**Subject: Third Quarter 2017 Compliance Monitoring Event  
Olympic View Sanitary Landfill, Kitsap County, Washington**

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Sampling Event Dates: August 30 & 31, 2017

Personnel: Sam Graber

### NOTES/SAMPLING DECODING:

- SCS sampled the revised list of wells approved by Ecology in their January 2017 Periodic Review report.
- The gate code to access the site is: 72369
- Dedicated pumps were used for purging and sampling all wells.
- Duplicate samples were collected at MW-34A (DUP 1) and MW-15R(DUP 2).
- Geotech and Solinst water level meters were used to record all water level elevations.
- Several well locks noted to need replacement on the site.
- The samples were sent to TestAmerica Denver for analysis at the close of each sampling day, except samples for low level arsenic which were held until the end of the sampling event and provided to Analytical Resources, Inc. in Tukwila, Washington.

Sample Date	Location ID	Sample ID	Comments
8/30/2017	MW-13A	0817-01	
8/30/2017	MW-13B	0817-02	
8/30/2017	MW-35	0817-03	
8/30/2017	MW-16	0817-04	

Sample Date	Location ID	Sample ID	Comments
8/30/2017	MW-39	0817-05	
8/30/2017	MW-43	0817-06	
8/30/2017	MW-42	0817-07	
8/31/2017	MW-32	0817-08	
8/31/2017	MW-34C	0817-09	
8/31/2017	MW-34A	0817-10	
8/31/2017	MW-34A	0817-11	Dup 1
8/31/2017	MW-15R	0817-12	
8/31/2017	MW-15R	0817-13	Dup 2
8/21/2017	LP-LCD	0817-14	

# FIELD INFORMATION FORM



Site Name: OSL  
 Site No.:       
 Sample Point: MW-13A  
 Sample ID:     

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:     

**PURGE INFO**  
 PURGE DATE (MM DD YY): 083017  
 PURGE TIME (2400 Hr Clock): 1625  
 ELAPSED HRS (hrs:min):     :20  
 WATER VOL IN CASING (Gallons):       
 ACTUAL VOL PURGED (Gallons):       
 WELL VOLS PURGED:     

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment Dedicated:  Y or  N  
 Filter Device:  0.45 µ or  µ (circle or fill in)  
 Purging Device:  C A-Submersible Pump D-Bailer  
 B-Peristaltic Pump E-Piston Pump  
 Sampling Device:  C C-QED Bladder Pump F-Dipper/Bottle  
 Filter Type:  A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other  
 X-Other:      Sample Tube Type:  D A-Teflon C-PVC X-Other:       
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC)      (ft/mst) Depth to Water (DTW) (from TOC) 4544 (ft)  
 Groundwater Elevation (site datum, from TOC)      (ft/mst)  
 Total Well Depth (from TOC)      (ft) Stick Up (from ground elevation)      (ft)  
 Casing ID 02 (in) Casing Material PVC

*Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by State/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

STABILIZATION DATA (Optional)	Sample Time (2400 Hr Clock)	Rate/Unit <u>ml/min</u>	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		<u>10:25</u>	<u>350</u>	<u>6.07</u>	<u>178</u>	<u>10.25</u>		<u>9.38</u>	<u>190.3</u>
	<u>10:30</u>	<u>↓</u>	<u>6.59</u>	<u>177</u>	<u>9.95</u>		<u>7.75</u>	<u>17.93</u>	
	<u>10:33</u>	<u>↓</u>	<u>6.88</u>	<u>176</u>	<u>9.91</u>		<u>7.42</u>	<u>16.36</u>	
	<u>10:36</u>	<u>↓</u>	<u>6.94</u>	<u>176</u>	<u>9.91</u>		<u>7.30</u>	<u>15.77</u>	
	<u>10:39</u>	<u>↓</u>	<u>6.98</u>	<u>175</u>	<u>9.88</u>		<u>7.31</u>	<u>15.56</u>	
	<u>10:42</u>	<u>↓</u>	<u>6.99</u>	<u>175</u>	<u>9.87</u>		<u>7.28</u>	<u>15.45</u>	<u>45.55</u>
	<u>10:45</u>	<u>↓</u>	<u>7.00</u>	<u>175</u>	<u>9.85</u>	<u>1.28</u>	<u>7.25</u>	<u>15.23</u>	<u>    </u>
	<u>    </u>								
	<u>    </u>								
	<u>    </u>								
	<u>    </u>								

Suggested range for 3 consec. readings or note Permit/State requirements: pH ±0.2, Conductance ±3%, Temp. ±0.2, Turbidity ±10%, eH/ORP ±25 mV, DTW Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/State. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 083017  
 pH (std): 7.00  
 CONDUCTANCE (µmhos/cm @ 25°C): 175  
 TEMP. (°C): 9.85  
 TURBIDITY (ntu): 1.28  
 DO (mg/L - ppm): 7.25  
 eH/ORP (mV): 15.23  
 Other: ftu  
 Units: 1045

**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/State)

Sample Appearance: clear Odor:      Color:      Other:       
 Weather Conditions (required daily, or as conditions change):      Direction/Speed:      Outlook: cloudy Precipitation:  Y or  N  
 Specific Comments (including purge/well volume calculations if required):     

**FIELD COMMENTS**  
      
      
      
    

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
8,30,17 Sam Guber      SCS  
 Date Name Signature Company

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

# FIELD INFORMATION FORM



Site Name: OUSL  
 Site No.:       
 Sample Point: MW-13B  
 Sample ID:     

**This Waste Management Field Information Form is Required!**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e., with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:     

PURGE INFO  
 PURGE DATE (MM DD YY): 083017  
 PURGE TIME (2400 Hr Clock): 1112  
 ELAPSED HRS (hrs:min): 20  
 WATER VOL IN CASING (Gallons):       
 ACTUAL VOL PURGED (Gallons):       
 WELL VOLS PURGED:     

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ "Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

PURGE/SAMPLE EQUIPMENT  
 Purging and Sampling Equipment... Dedicated:  Y or  N  
 Filter Device:  or  N 0.45 μ or      μ (circle or fill in)  
 Purging Device: C A-Submersible Pump D-Bailer  
 B-Peristaltic Pump E-Piston Pump  
 Sampling Device: C C-QED Bladder Pump F-Dipper/Bottle  
 X-Other:       
 Filter Type: 4  
 A-In-line Disposable C-Vacuum  
 B-Pressure X-Other:       
 A-Teflon C-PVC X-Other:       
 B-Stainless Steel D-Polypropylene  
 Sample Tube Type: D

WELL DATA  
 Well Elevation (at TOC)      (ft/mst)      Depth to Water (DTW) (from TOC) 5817 (ft)  
 Groundwater Elevation (site datum, from TOC)      (ft/mst)  
 Total Well Depth (from TOC)      (ft)      Stick Up (from ground elevation)      (ft)  
 Casing ID      (in)      Casing Material     

*Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by State/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

STABILIZATION DATA (Optional)	Sample Time (2400 Hr Clock)	Rate/Unit ml/min	pH (std)	Conductance (SC/EC) (μmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		<u>11:12</u>	<u>300</u>	<u>6.94</u>	<u>179</u>	<u>10.87</u>		<u>9.00</u>	<u>142.3</u>
	<u>11:17</u>		<u>7.11</u>	<u>178</u>	<u>10.43</u>		<u>7.61</u>	<u>140.7</u>	
	<u>11:20</u>		<u>7.22</u>	<u>178</u>	<u>10.35</u>		<u>7.55</u>	<u>139.2</u>	
	<u>11:23</u>		<u>7.30</u>	<u>179</u>	<u>10.35</u>		<u>7.45</u>	<u>137.9</u>	
	<u>11:26</u>		<u>7.37</u>	<u>178</u>	<u>10.28</u>		<u>7.31</u>	<u>136.5</u>	
	<u>11:29</u>		<u>7.39</u>	<u>178</u>	<u>10.31</u>		<u>7.22</u>	<u>135.9</u>	<u>58.45</u>
	<u>11:32</u>	<u>10</u>	<u>7.41</u>	<u>178</u>	<u>10.27</u>	<u>2.15</u>	<u>7.16</u>	<u>135.6</u>	

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2      Conductance +/- 3%      Temp. --      Turbidity --      D.O. +/- 10%      eH/ORP +/- 25 mV      DTW Stabilize

**Stabilization Data Fields are Optional** (i.e., complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. **If more fields above are needed, use separate sheet or form.**

FIELD DATA	SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (μmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: <u>Time</u>
	<u>083017</u>	<u>7.41</u>	<u>178</u>	<u>10.27</u>	<u>2.15</u>	<u>7.16</u>	<u>135.6</u>	Units: <u>1132</u>

**Final Field Readings are required** (i.e., record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: Clear      Odor: -      Color: -      Other: -  
 Weather Conditions (required daily, or as conditions change):           Direction/Speed: -      Outlook: overcast      Precipitation: Y or N  
 Specific Comments (including purge/well volume calculations if required):     

FIELD COMMENTS  
      
      
      
    

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
8,30,17      Sam Gruber      [Signature]      SCS  
 Date      Name      Signature      Company

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy



# FIELD INFORMATION FORM



Site Name: 0USL  
 Site No.:       
 Sample Point: MW-35  
 Sample ID:     

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:     

**PURGE INFO**  
 PURGE DATE (MM DD YY): 083017  
 PURGE TIME (2400 Hr Clock): 12:23  
 ELAPSED HRS (hrs:min):      20  
 WATER VOL IN CASING (Gallons):       
 ACTUAL VOL PURGED (Gallons):       
 WELL VOLS PURGED:     

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment:  Dedicated or  N  
 Purging Device: C A-Submersible Pump D-Bailer  
 Sampling Device: C B-Peristaltic Pump E-Piston Pump  
 X-Other:      C-QED Bladder Pump F-Dipper/Bottle  
 Filter Device:  Y or  N 0.45  $\mu$  or       $\mu$  (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other       
 Sample Tube Type: D A-Teflon C-PVC X-Other:       
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC)      (ft/msl) Depth to Water (DTW) (from TOC) 7172 (ft)  
 Groundwater Elevation (site datum, from TOC)      (ft/msl)  
 Total Well Depth (from TOC)      (ft) Stick Up (from ground elevation)      (ft)  
 Casing ID 04 (in) Casing Material PVC  
*Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by State/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

STABILIZATION DATA (Optional)	Sample Time (2400 Hr Clock)	Rate/Unit mL/min	pH (std)	Conductance (SC/EC) ( $\mu$ mhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		12:23	300	7.53	169	12.75		9.70	122.5
	12:28		7.38	167	11.91		8.45	124.4	
	12:31		7.21	166	11.39		7.24	126.9	
	12:34		7.24	167	11.42		7.23	123.5	
	12:37		7.27	166	11.12		7.26	122.4	
	12:40		7.26	166	11.32		7.13	121.4	
	12:43	✓	7.29	167	11.63	4.71	6.99	117.3	71.75
	:								
	:								
	:								

Suggested range for 3 consec. readings or note Permit/State requirements: +/- 0.2

+/- 0.2

+/- 3%

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+/- 10%

+/- 25 mV

Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 083017  
 pH (std): 7.29  
 CONDUCTANCE (umhos/cm @ 25°C): 167  
 TEMP. (°C): 11.63  
 TURBIDITY (ntu): 4.71  
 DO (mg/L - ppm): 6.99  
 eH/ORP (mV): 117.3  
 Other: Time  
 Units: 1243  
**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: clear Odor: - Color: - Other: -  
 Weather Conditions (required daily, or as conditions change):      Direction/Speed: - Outlook: sunny Precipitation: Y or N  
 Specific Comments (including purge/well volume calculations if required):     

**FIELD COMMENTS**  
      
      
    

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
8/30/17 Sam Graber [Signature] SCS  
 Date Name Signature Company

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

# FIELD INFORMATION FORM


 Site Name: DUSEL  
 Site No.: 1111  
 Sample Point: MW-16  
 Sample ID: \_\_\_\_\_

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID: \_\_\_\_\_

PURGE INFO	PURGE DATE (MM DD YY) <u>083017</u>	PURGE TIME (2400 Hr Clock) <u>1336</u>	ELAPSED HRS (hrs:min) <u>20</u>	WATER VOL IN CASING (Gallons) _____	ACTUAL VOL PURGED (Gallons) _____	WELL VOLS PURGED _____
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*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

PURGE/SAMPLE EQUIPMENT	Purging and Sampling Equipment: Dedicated: <input checked="" type="radio"/> Y or <input type="radio"/> N	Filter Device: <input checked="" type="radio"/> Y or <input type="radio"/> N	0.45 μ or _____ μ (circle or fill in)
Purging Device: <u>C</u>	A-Submersible Pump	D-Bailer	A-In-line Disposable C-Vacuum
Sampling Device: <u>C</u>	B-Peristaltic Pump	E-Piston Pump	B-Pressure X-Other: _____
X-Other: _____	C-QED Bladder Pump	F-Dipper/Bottle	A-Teflon C-PVC X-Other: _____
		Sample Tube Type: <u>D</u>	B-Stainless Steel D-Polypropylene

WELL DATA	Well Elevation (at TOC): _____ (ft/msl)	Depth to Water (DTW) (from TOC): <u>5631</u> (ft)	Groundwater Elevation (site datum, from TOC): _____ (ft/msl)
Total Well Depth (from TOC): _____ (ft)	Stick Up (from ground elevation): _____ (ft)	Casing ID: <u>02</u> (in)	Casing Material: <u>PVC</u>

*Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by State/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

STABILIZATION DATA (Optional)	Sample Time (2400 Hr Clock)	Rate/Unit (μL/min)	pH (std)	Conductance (SC/EC) (μmhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
	<u>1336</u>	<u>300</u>	<u>7.21</u>	<u>115</u>	<u>10.35</u>		<u>8.0</u>	<u>124.4</u>	
	<u>1341</u>		<u>6.51</u>	<u>117</u>	<u>9.93</u>		<u>6.32</u>	<u>155.7</u>	
	<u>1344</u>		<u>6.18</u>	<u>114</u>	<u>9.86</u>		<u>6.46</u>	<u>164.9</u>	
	<u>1347</u>		<u>6.09</u>	<u>113</u>	<u>9.81</u>		<u>6.65</u>	<u>170.9</u>	
	<u>1350</u>		<u>6.08</u>	<u>113</u>	<u>9.76</u>		<u>6.67</u>	<u>172.5</u>	
	<u>1353</u>		<u>6.11</u>	<u>113</u>	<u>9.75</u>		<u>6.68</u>	<u>172.9</u>	
	<u>1356</u>		<u>6.17</u>	<u>114</u>	<u>9.70</u>	<u>2.50</u>	<u>6.67</u>	<u>172.1</u>	<u>5635</u>
	...								

Suggested range for 3 consec. readings or note Permit/State requirements: pH ±0.2, Conductance ±3%, D.O. ±10%, eH/ORP ±25 mV, Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by W/M, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

FIELD DATA	SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (μmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: <u>pH</u>
	<u>083017</u>	<u>6.17</u>	<u>114</u>	<u>9.70</u>	<u>2.50</u>	<u>6.67</u>	<u>172.1</u>	Units: <u>1356</u>

*Final Field Readings are required* (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: clear      Odor: -      Color: -      Other: -  
 Weather Conditions (required daily, or as conditions change): \_\_\_\_\_      Direction/Speed: -      Outlook: clear      Precipitation: Y or N  
 Specific Comments (including purge/well volume calculations if required): \_\_\_\_\_

FIELD COMMENTS

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I certify that sampling procedures were in accordance with applicable EPA, State, and W/M protocols (if more than one sampler, all should sign):

<u>8/30/17</u>	<u>Sam Graber</u>	<u>[Signature]</u>	<u>SCS</u>
_____ Date	_____ Name	_____ Signature	_____ Company

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

# FIELD INFORMATION FORM



Site Name: DUSC  
 Site No.:       
 Sample Point: MW-39  
Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:     

**PURGE INFO**  
 PURGE DATE: 083017 (MM DD YY)  
 PURGE TIME: 1442 (2400 Hr Clock)  
 ELAPSED HRS: 20 (hrs:min)  
 WATER VOL IN CASING:      (Gallons)  
 ACTUAL VOL PURGED:      (Gallons)  
 WELL VOLs PURGED:     

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment:  Dedicated;  or  N  
 Filter Device:  or  N 0.45  $\mu$  or       $\mu$  (circle or fill in)  
 Purging Device: C A-Submersible Pump D-Bailer  
 B-Peristaltic Pump E-Piston Pump  
 Sampling Device: C C-QED Bladder Pump F-Dipper/Bottle  
 X-Other:       
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other:       
 Sample Tube Type: D A-Teflon C-PVC X-Other:       
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC):      (ft/msl)  
 Depth to Water (DTW) (from TOC): 2109 (ft)  
 Groundwater Elevation (site datum, from TOC):      (ft/msl)  
 Total Well Depth (from TOC):      (ft)  
 Stick Up (from ground elevation):      (ft)  
 Casing ID: 02 (in)  
 Casing Material: PVC

Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate/Unit (ml/min)	pH (std)	Conductance (SC/EC) ( $\mu$ mhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
14:42	300	6.69	266	11.56		2.30	-678	
14:47		6.53	264	11.49		0.73	-598	
14:50		6.53	264	11.40		0.49	-634	
14:53		6.53	264	11.34		0.35	-665	
14:56		6.51	265	11.30		0.35	-686	
14:59		6.49	264	11.31		0.30	-695	
15:02		6.47	264	11.32	2.21	0.26	-704	2115
!								
!								
!								

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, Temp. +/- 0.2, Turbidity +/- 10%, eH/ORP +/- 25 mV, Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. **If more fields above are needed, use separate sheet or form.**

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 083017  
 pH (std): 6.47  
 CONDUCTANCE ( $\mu$ mhos/cm @ 25°C): 264  
 TEMP. (°C): 11.32  
 TURBIDITY (ntu): 2.21  
 DO (mg/L - ppm): 0.26  
 eH/ORP (mV): -704  
 Other: Time  
 Units: 1502

**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: clear Odor: - Color: - Other: -  
 Weather Conditions (required daily, or as conditions change):      Direction/Speed: - Outlook: Sunny Precipitation: Y or N  
 Specific Comments (including purge/well volume calculations if required):     

**FIELD COMMENTS**  
      
      
      
    

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
08/30/17 Sam Brater [Signature] SCS  
 Date Name Signature Company

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

# FIELD INFORMATION FORM



Site Name: DUSL  
 Site No.:       
 Sample Point: MW-43  
 Sample ID:     

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:     

**PURGE INFO**  
 PURGE DATE (MM DD YY): 083017  
 PURGE TIME (2400 Hr Clock): 1635  
 ELAPSED HRS (hrs:min): 16:28  
 WATER VOL IN CASING (Gallons):       
 ACTUAL VOL PURGED (Gallons):       
 WELL VOLs PURGED:     

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment:  Dedicated;  or  N  
 Filter Device:  or  N; 0.45  $\mu$  or       $\mu$  (circle or fill in)  
 Purging Device: C A-Submersible Pump D-Bailer  
 B-Peristaltic Pump E-Piston Pump  
 Sampling Device: E C-QLD Bladder Pump F-Dipper/Bottle  
 X-Other:       
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other:       
 Sample Tube Type: D A-Teflon C-PVC X-Other:       
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC):      (ft/mst) Depth to Water (DTW) (from TOC): 2528 (ft) Groundwater Elevation (site datum, from TOC):      (ft/mst)  
 Total Well Depth (from TOC):      (ft) Stick Up (from ground elevation):      (ft) Casing ID: 02 (in) Casing Material: PVC

*Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by State/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

STABILIZATION DATA (Optional)	Sample Time (2400 Hr Clock)	Rate/Unit (ml/min)	pH (std)	Conductance (SC/EC) ( $\mu$ mhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		16:35	300	6.24	49	10.86		1.75	1073
	16:40	↓	5.49	48	10.65		0.55	1425	
	16:43	↓	5.47	48	10.63		0.42	1438	
	16:46	↓	5.45	48	10.61		0.38	1442	
	16:49	↓	5.45	47	10.60		0.32	1456	
	16:52	↓	5.45	47	10.59		0.27	1464	
	16:55	↓	5.50	47	10.57	402	0.26	1429	2538
	:								
	:								
	:								

*Suggested range for 3 consec. readings or note Permit/State requirements: pH: +/- 0.2; Conductance: +/- 3%; Temp: --; Turbidity: --; D.O.: +/- 10%; eH/ORP: +/- 25 mV; DTW: Stabilize*

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. **If more fields above are needed, use separate sheet or form.**

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 083017  
 pH (std): 5.50  
 CONDUCTANCE (umhos/cm @ 25°C): 47  
 TEMP. (°C): 10.57  
 TURBIDITY (ntu): 4.02  
 DO (mg/L - ppm): 0.26  
 eH/ORP (mV): 1429  
 Other: 7.24  
 Units: 1655

**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: Clear Odor: - Color: - Other: -  
 Weather Conditions (required daily, or as conditions change): - Direction/Speed: - Outlook: sunny Precipitation: Y or  N

Specific Comments (including purge/well volume calculations if required):  
orange haze in water at beginning of purge.

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
8/30/17 Sam Graber [Signature] SCS  
 Date Name Signature Company

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy



# FIELD INFORMATION FORM



Site Name: 056  
 Site No.: 140-32  
 Sample Point: 140-32  
 Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e., with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID: \_\_\_\_\_

**PURGE INFO**  
 PURGE DATE (MM DD YY): 083117  
 PURGE TIME (2400 Hr Clock): 1017  
 ELAPSED HRS (hrs:min): 20  
 WATER VOL IN CASING (Gallons): \_\_\_\_\_  
 ACTUAL VOL PURGED (Gallons): \_\_\_\_\_  
 WELL VOLs PURGED: \_\_\_\_\_

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment:  Dedicated;  or  N  
 Purging Device: C A-Submersible Pump D-Bailer  
 Sampling Device: C B-Peristaltic Pump E-Piston Pump  
 C-QED Bladder Pump F-Dipper/Bottle  
 X-Other: \_\_\_\_\_  
 Filter Device:  or  N 0.45  $\mu$  or \_\_\_\_\_  $\mu$  (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other: \_\_\_\_\_  
 Sample Tube Type: 0 A-Teflon C-PVC X-Other: \_\_\_\_\_  
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC): \_\_\_\_\_ (ft/msl)  
 Depth to Water (DTW) (from TOC): 179 (ft)  
 Groundwater Elevation (site datum, from TOC): \_\_\_\_\_ (ft/msl)  
 Total Well Depth (from TOC): \_\_\_\_\_ (ft)  
 Stick Up (from ground elevation): \_\_\_\_\_ (ft)  
 Casing ID: 02 (in) Casing Material: PVC  
*Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by State/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

Sample Time (2400 Hr Clock)	Rate/Unit (ml/min)	pH (std)	Conductance (SC/EC) ( $\mu$ mhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
10:17	300	5.96	249	12.59		2.84	79.1	
10:22		6.58	251	12.45		0.98	-4.2	
10:25		6.79	250	12.43		0.77	-23.0	
10:28		6.85	250	12.38		0.39	-29.2	
10:31		6.90	250	12.41		0.68	-33.6	
10:34		6.90	251	12.41		0.64	-34.5	
10:37		6.91	251	12.42	3.41	0.59	-35.6	1.81
:								
:								
:								

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, D.O. +/- 10%, eH/ORP +/- 25 mV, DTW Stabilize

**Stabilization Data Fields are Optional** (i.e., complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 083117  
 pH (std): 6.91  
 CONDUCTANCE ( $\mu$ mhos/cm @ 25°C): 251  
 TEMP. (°C): 12.42  
 TURBIDITY (ntu): 3.41  
 DO (mg/L - ppm): 0.59  
 eH/ORP (mV): -35.6  
 Other: None  
 Units: \_\_\_\_\_  
 Final Field Readings are required (i.e., record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site)

Sample Appearance: clear Odor: \_\_\_\_\_ Color: \_\_\_\_\_ Other: \_\_\_\_\_  
 Weather Conditions (required daily, or as conditions change): \_\_\_\_\_ Direction/Speed: \_\_\_\_\_ Outlook: overcast Precipitation: Y or  N  
 Specific Comments (including purge/well volume calculations if required): \_\_\_\_\_

**FIELD COMMENTS**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
8/31/17 Sam Graber [Signature] SLC  
 Date Name Signature Company

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy



# FIELD INFORMATION FORM



Site Name: JUSC  
 Site No.:       
 Sample Point: W6-34C  
 Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:     

**PURGE INFO**  
 PURGE DATE (MM DD YY): 083117  
 PURGE TIME (2400 Hr Clock): 11:30  
 ELAPSED HRS (hrs:min):   30  
 WATER VOL IN CASING (Gallons):       
 ACTUAL VOL PURGED (Gallons):       
 WELL VOLS PURGED:     

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  (Y) or  (N)  
 Filter Device:  (Y) or  (N) 0.45 μ or      μ (circle or fill in)  
 Purging Device: C A-Submersible Pump D-Bailer  
 B-Peristaltic Pump E-Piston Pump  
 Sampling Device: C C-QED Bladder Pump F-Dipper/Bottle  
 X-Other:       
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other:       
 Sample Tube Type: D A-Teflon C-PVC X-Other:       
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC)      (ft/msl) Depth to Water (DTW) (from TOC) 4174 (ft)  
 Groundwater Elevation (site datum, from TOC)      (ft/msl)  
 Total Well Depth (from TOC)      (ft) Stick Up (from ground elevation)      (ft)  
 Casing ID 04 (in) Casing Material PVC

*Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

STABILIZATION DATA (Optional)	Sample Time (2400 Hr Clock)	Rate/Unit (ML/MIN)	pH (std)	Conductance (SC/EC) (μmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		11:30	300	7.08	242	13.50		3.44	2.6
	11:35		6.73	246	13.48		0.70	3.0	
	11:40		6.72	246	13.50		0.48	0.1	
	11:45		6.72	246	13.52		0.37	-2.9	
	11:48		6.71	245	13.52		0.35	-1.1	
	11:51		6.70	244	13.52	539.4	0.33	0.3	
	11:54		6.70	244	13.51	409.6	0.31	-1.5	
	11:57		6.70	244	13.51	342.2	0.29	-2.9	
	12:00		6.69	244	13.53	300.2	0.27	-5.7	41.80

*Suggested range for 3 consec. readings or note Permit/State requirements: pH: ±0.2, Conductance: ±3%, DO: ±10%, eH/ORP: ±25 mV, Stabilize*

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. **If more fields above are needed, use separate sheet or form.**

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 083117  
 pH (std): 6.69  
 CONDUCTANCE (μmhos/cm @ 25°C): 244  
 TEMP. (°C): 13.53  
 TURBIDITY (ntu): 300.2  
 DO (mg/L - ppm): 0.27  
 eH/ORP (mV): -5.7  
 Other: Time  
 Units: 1200

**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: cloudy Odor:      Color: slightly orange Other:       
 Weather Conditions (required daily, or as conditions change):      Direction/Speed:      Outlook: cloudy Precipitation: Y or (N)  
 Specific Comments (including purge/well volume calculations if required):     

**FIELD COMMENTS**  
extended purge.  
sample was cloudy, slightly orange. had fluffy white particulates & small dark particulates.

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
8/31/17 Sam Gruber            
 Date Name Signature Company

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

# FIELD INFORMATION FORM



Site Name: WKL  
 Site No.:       
 Sample Point: MW-34A  
 Sample ID:     

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e., with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:     

**PURGE INFO**  
 PURGE DATE (MM DD YY): 08/31/17  
 PURGE TIME (2400 Hr Clock): 12:40  
 ELAPSED HRS (hrs:min):      20  
 WATER VOL IN CASING (Gallons):       
 ACTUAL VOL PURGED (Gallons):       
 WELL VOL PURGED:     

Purging and Sampling Equipment: Dedicated:  Y or  N  
 Purging Device: C A-Submersible Pump D-Bailer  
 Sampling Device: C B-Peristaltic Pump E-Piston Pump  
 X-Other:      C-QED Bladder Pump F-Dipper/Bottle  
 Filter Device:  Y or  N 0.45  $\mu$  or       $\mu$  (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other:       
 Sample Tube Type: D A-Teflon C-PVC X-Other:       
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC):      (ft/mst) Depth to Water (DTW) (from TOC): 39.93 (ft) Groundwater Elevation (site datum, from TOC):      (ft/mst)  
 Total Well Depth (from TOC):      (ft) Stick Up (from ground elevation):      (ft) Casing ID:      (in) Casing Material:       
*Note: Total Well Depth, Stick Up, Casing Id, etc., are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

STABILIZATION DATA (Optional)	Sample Time (2400 Hr Clock)	Rate/Unit (ML/min)	pH (std)	Conductance (SC/EC) ( $\mu$ mhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	cH/ORP (mV)	DTW (ft)
		12:40	300	6.74	108	12.70		8.60	913
	12:45	↓	5.91	106	12.60		5.58	1387	
	12:48	↓	5.77	107	12.39		5.35	1440	
	12:51	↓	5.76	110	12.60		5.11	1474	
	12:54	↓	5.76	109	12.57		5.10	1492	
	12:57	↓	5.76	111	12.60		5.02	1506	
	13:00	↓	5.76	111	12.57	3.51	4.99	1535	39.93

**Stabilization Data Fields are Optional** (i.e., complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 08/31/17  
 pH (std): 5.76  
 CONDUCTANCE ( $\mu$ mhos/cm @ 25°C): 111  
 TEMP. (°C): 12.57  
 TURBIDITY (ntu): 3.51  
 DO (mg/L - ppm): 4.99  
 cH/ORP (mV): 1535  
 Other: 1300  
 Units:     

Sample Appearance: clear Odor:      Color:      Other:       
 Weather Conditions (required daily, or as conditions change):      Direction/Speed:      Outlook: cloudy Precipitation: Y or N  
 Specific Comments (including purge/well volume calculations if required):     

**FIELD COMMENTS**  
Dup 1 taken at 1315

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
08/31/17 Sam Graber      SCS  
 Date Name Signature Company

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy



# FIELD INFORMATION FORM



Site Name: OUSL  
 Site No.:       
 Sample Point: AW-1512  
 Sample ID:     

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:     

**PURGE INFO**  
 PURGE DATE (MM DD YY): 09/31/17  
 PURGE TIME (2400 Hr Clock): 14:28  
 ELAPSED HRS (hrs:min):       
 WATER VOL IN CASING (Gallons):       
 ACTUAL VOL PURGED (Gallons):       
 WELL VOL PURGED:     

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vol Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment: Dedicated  or  N  
 Filter Device:  or  N 0.45  $\mu$  or       $\mu$  (circle or fill in)  
 Purging Device: C A-Submersible Pump D-Bailer  
 B-Peristaltic Pump E-Piston Pump  
 Sampling Device: C C-QED Bladder Pump F-Dipper/Bottle  
 X-Other:       
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other:       
 Sample Tube Type: D A-Teflon C-PVC X-Other:       
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC):      (ft/mst) Depth to Water (DTW) (from TOC): 1903 (ft)  
 Groundwater Elevation (site datum, from TOC):      (ft/mst)  
 Total Well Depth (from TOC):      (ft) Stick Up (from ground elevation):      (ft)  
 Casing ID: 02 (in) Casing Material: PVC

*Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by State/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate/Unit (ML/min)	pH (std)	Conductance (SC/EC) ( $\mu$ mhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
14:28	300	6.64	162	10.51		2.72	118.6	
14:33		6.39	162	10.46		1.49	128.8	
14:36		6.42	162	10.50		1.41	126.1	
14:39		6.43	161	10.48		1.35	124.8	
14:42		6.44	161	10.47		1.28	123.8	
14:45		6.44	161	10.48		1.28	123.6	
14:48	↓	6.45	161	10.47	2.31	1.25	123.4	19.11
:								
:								
:								

*Suggested range for 3 consec. readings or note Permit/State requirements: pH: +/- 0.2; Conductance: +/- 3%; Temp: --; Turbidity: --; D.O.: +/- 10%; eH/ORP: +/- 25 mV; DTW: Stabilize*

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. **If more fields above are needed, use separate sheet or form.**

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 09/31/17  
 pH (std): 6.45  
 CONDUCTANCE ( $\mu$ mhos/cm @ 25°C): 161  
 TEMP. (°C): 10.47  
 TURBIDITY (ntu): 2.31  
 DO (mg/L - ppm): 1.25  
 eH/ORP (mV): 123.4  
 Other: time  
 Units: 1448

**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: clear Odor:      Color:      Other:       
 Weather Conditions (required daily, or as conditions change):      Direction/Speed:      Outlook: cloudy Precipitation: Y or N  
 Specific Comments (including purge/well volume calculations if required):     

**FIELD COMMENTS**  
Dup 2 taken at 1500

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
09/31/17 Sam Graber [Signature] OUSL  
 Date Name Signature Company

# FIELD INFORMATION FORM



Site Name: 0VSL

**This Waste Management Field Information Form is Required**

This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Site No. 503702

Sample Point: 49LGD  
Sample ID

Laboratory Use Only/Lab ID: \_\_\_\_\_

PURGE INFO	PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLS PURGED
	<u>8/21/17</u>	<u>11:30</u>	<u>0:18</u>			

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

PURGE/SAMPLE EQUIPMENT	Purging and Sampling Equipment ... Dedicated: <input checked="" type="radio"/> or <input type="radio"/>	Filter Device: <input type="checkbox"/> or <input type="checkbox"/> <input type="checkbox"/> or <input type="checkbox"/> <input type="checkbox"/> $\mu$ (circle or fill in)
	Purging Device: <u>Bellows</u> A-Submersible Pump B-Peristaltic Pump Sampling Device: <u>Bellows</u> C-QED Bladder Pump X-Other: _____	D-Bailer E-Piston Pump F-Dipper/Bottle Filter Type: _____ Sample Tube Type: _____ A-In-line Disposable B-Pressure C-Vacuum X-Other: _____ A-Teflon B-Stainless Steel C-PVC D-Polypropylene X-Other: _____

WELL DATA	Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)
	____ (ft/msl)	____ (ft)	____ (ft/msl)
	Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID (in)
	____ (ft)	____ (ft)	____ (in)

*Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

STABILIZATION DATA (Optional)	Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) ( $\mu$ mhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		<u>12:00</u>	1"				<u>6.24</u>		
	2"								
	3"								
	4"								
	5"								
	6"								
	7"								
	8"								
	9"								
	10"								
	11"								
	12"								

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, Temp. --, Turbidity --, D.O. +/- 10%, eH/ORP +/- 25 mV, DTW Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. **If more fields above are needed, use separate sheet or form.**

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE ( $\mu$ mhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units
<u>08/21/17</u>	<u>6.84</u>	<u>3477</u>	<u>24.5</u>	<u>6.24</u>	<u>5.9</u>	<u>58</u>	

*Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).*

Sample Appearance: \_\_\_\_\_ Odor: \_\_\_\_\_ Color: Light Tan Other: \_\_\_\_\_

Weather Conditions (required daily, or as conditions change): \_\_\_\_\_ Direction/Speed: N Outlook: Clear Precipitation: Y or

Specific Comments (including purge/well volume calculations if required): \_\_\_\_\_

FIELD COMMENTS \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

8/21/17 Stéphane H. Roy [Signature] SLC-FS

\_\_\_\_\_  
Date Name Signature Company

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client. PINK - Field Copy

**GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM**

		Conductivity	pH4	pH 7	DO	Turbidity	Comments/Exceptions
Date	8/30/17						
Time	940						
Weather (sky or precip, temp)	overcast						
Type of Calibration	Standard	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.01	7.00	100% or ~8.5	1000, 10, 0.2 800, 100, 20, <0.1		
Pre-Cal Reading	1414	4.04	6.97	7.68			
Post Cal Reading	1413	4.01	7.00	8.50	786, 98.4, 10.6, 0.73		
Discrepancy	No						
Calib. Successful?	No						
Calibration by	SEB						
Instrument Type, ID	MP20 /	YSI 556	MicoTPW / HACH2000				
Calibration Location	DUSL						

\* If Direct Reading is Unavailable, Assume pressure = 760 mm - 2.5 (altitude in ft/100)

**GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM**

Conductivity	pH4	pH 7	DO	Turbidity	Comments/Exceptions
Date	8/31/17				
Time	845				
Weather (sky or precip. temp)	overcast				
Type of Calibration	Standard	Standard	Standard	Standard	
Standard Value	1413	4.01	7.00	1000, 10, 0.2 800, 100, 20, <0.1	
Pre-Cal Reading	1396	4.06	6.96		
Post Cal Reading	1413	4.01	7.00	789, 97.1, 19.2, 0.73	
Discrepancy	No				
Calib. Successful?	yes				
Calibration by	SEL				
Instrument Type, ID	MP20 / YSI 556	MicoTPW / HACH2000			
Calibration Location	BWSL				

\* If Direct Reading is Unavailable, Assume pressure = 760 mm - 2.5 (altitude in ft/100)

APPENDIX B

FOURTH QUARTER 2017 DATA VALIDATION  
AND  
ANALYTICAL DATA REPORTS

(ANALYTICAL DATA REPORTS AVAILABLE ON CD)



## DATA VALIDATION REPORT – OLYMPIC VIEW SANITARY LANDFILL FOURTH QUARTER 2017

### Project Details

<b>Project No.</b>	04204027.20	<b>Site Name</b>	Olympic View Sanitary Landfill
<b>Data Validator</b>	Sam Adlington	<b>Data Level</b>	Level II
<b>Date</b>	12/28/2017	<b>DV Tier</b>	Tier I
<b>QA Document</b>	Olympic View Sanitary Landfill Sampling Analysis Plan, April 30, 2013		

### Sample Login Summary

Sample Group	Sample Login Comments	Analytical Lab (Primary)
280-103543-1	No comments.	TestAmerica, Denver CO
280-103614-1	Nitrite analysis performed outside of holding limit. See case narrative.	TestAmerica, Denver CO
280-103730-1	Nitrite analysis performed outside of holding limit. See case narrative.	TestAmerica, Denver CO
280-103734-1	No comments.	TestAmerica, Denver CO
280-103956-1	BOD analysis performed outside of holding time. See case narrative.	TestAmerica, Denver CO
280-104027-1	No comments.	TestAmerica, Denver CO
280-104250-1	No comments.	Analytical Resources, Inc.

### Analytical Summary

Sample Group	Analyses						
	Qtrly General Chemistry <sup>1</sup>	Qtrly Metals	Qtrly VOCs	As <sup>2</sup>	TSS	BOD/COD	App III Analytes <sup>3</sup>
280-103543-1	X	X	X	--	X	--	X
280-103614-1	X	X	X	--	X	--	X
280-103730-1	X	X	X	--	X	--	X
280-103734-1	X	X	X	--	X	--	X
280-103956-1	X	--	--	--	X	X	X
280-104027-1	--	--	--	--	--	X	--
280-104250-1	--	--	--	X	--	--	--

<sup>1</sup> General Chemistry (NO<sub>3</sub>, Cl, SO<sub>4</sub>, NH<sub>4</sub>, Alkalinity, TDS, TOC)

<sup>2</sup> Arsenic only (total)

<sup>3</sup> WAC 173-351-990 App. III - VOCs, Metals, Pesticides/PCBs, OP Pesticides, Herbicides, SVOCs, Sulfide, Cyanide

\* General Chemistry (Cl, SO<sub>4</sub>, NH<sub>4</sub>, Alkalinity, TDS, TOC)

\*\* Total Metals (Ca, Fe, Mg, Mn, K, Na)



**Laboratory Quality Assurance Samples**

Lab QA Samples	Notes	Comments
Surrogates/Organics	See case narratives.	<p>The analytes Acrolein, Acrylonitrile, and 2-chlororethyl vinyl ether cannot be reliably quantified in acid preserved samples, therefore, the reporting limits for the analytes listed are not reliable or defensible.</p> <p>4-Bromofluorobenzene (280-103614-1) was above control limits on samples MW-15R, MW-34C, DUP1 (MW-34A), and the trip blank. No corrective action was taken as all associated samples were non-detect.</p> <p>The CCV for Method 8260C (280-103730-1, 280-103734-1) was recovered above control limits for multiple analytes. No corrective action was taken as all associated samples were non-detect.</p> <p>The MRL for sample OBWL-TD (280-103734-1) were adjusted for dilutions required due to foaming or matrix issues. See case narrative.</p>
MB	See case narrative.	<p>1,4-Dioxane (280-103730-1) was detected above the MDL but below the project established MRL. No corrective action was taken as the detection was below the MRL.</p> <p>Hexachlorobutadine (280-103734-1) was detected above the MDL but below the project established MRL. No corrective action was taken as the detection was below the MRL.</p> <p>Total Calcium (280-103956-1) was detected above the project established MRL, but below TestAmerica's standard MRL. No corrective action has been taken on the associated samples (LP-LCD).</p> <p>Total Magnesium (280-103956-1) was detected above the project established MRL, but below TestAmerica's standard MRL. No corrective action has been taken on the associated samples (LP-LCD).</p> <p>Total Sodium (280-103956-1) was detected above the MDL but below the project established MRL. No corrective action was taken as the detection was below the MRL.</p>
DUP	No comments.	
LCS/LCSD	See case narrative.	<p>1,1,1,2-Tetrachloroethane (280-103614-1) was recovered above control limits. No corrective action was taken as all associated samples were non-detect.</p> <p>Methyl acetate (280-103614-1) was recovered below control limits. No corrective action was taken as this is a known poor performing analyte for Method 8260C.</p> <p>Vinyl chloride, 1,1-Dichloropropene, Chloromethane, and Aceton (280-103730-1) were recovered above control limits. No corrective action was taken as all associated samples were non-detect.</p> <p>Methylene Chloride (280-103734-1) was recovered below control limits. No corrective action was taken as all other QC data was within control limits.</p>
MS/MSD	Possible matrix interference. See case narratives.	<p>Dibromofluoromethane (280-103543-1, 280-103614-1, 280-103730-1, 280-103734-1) on sample MW-13A exhibited surrogate recoveries outside control limits. No corrective action was taken because all sample in batch were non-detect.</p> <p>Multiple analytes by Method 8260C (280-103543-1, 280-103614-1, 280-103730-1, 280-103734-1) on a non-OVSL sample processed in the same batch as OVSL samples were recovered outside control limits. No corrective action taken as all corresponding LCS and MB samples are within control limits.</p> <p>Ammonia (280-103614-1) on sample MW-19C was below the lower control limit and the RPD was outside the limit for Method 350.1. No corrective action was taken as the corresponding LCS and MB were within control limits.</p> <p>Chemical Oxygen Demand (COD) (280-103734-1) on a non-OVSL sample processed in the same batch as OVSL samples were recovered outside control limits. No corrective action taken as all corresponding LCS and MB samples are within control limits.</p>
General Chemistry	No comments.	



Lab QA Samples	Notes	Comments
Metals	No comments.	

### Field Quality Assurance Samples

Field QA Samples	Sample Group	Analytes	Notes
Trip Blank	280-103614-1	Butyl alcohol, n- and Chloroethane were detected above the MDL but below the MRL.	No corrective action taken as all associated samples were detected below the MRL.
Trip Blank	280-103730-1	Butyl alcohol, n- and Chloroethane were detected above the MDL but below the MRL.	No corrective action taken as all associated samples were detected below the MRL.
Trip Blank	280-103734-1	Butyl alcohol, n- was detected above the MDL but below the MRL.	No corrective action taken as all associated samples were detected below the MRL.

### Detailed Field Replicate Evaluation

Analyte	Units	MW-34A	DUP1	RPD (%)	MW-15R	DUP2	RPD (%)
Alkalinity, Bicarbonate (As CaCO <sub>3</sub> )	mg/L	76	75	1.32	68	68	0.00
Alkalinity, Total (As CaCO <sub>3</sub> )	mg/L	76	75	1.32	68	68	0.00
Arsenic, Total	mg/L	0.000442	0.000458	3.56	0.00024	0.000232	3.39
Barium, Total	mg/L	0.0036	0.0039	8.00	0.0046	0.0043	6.74
Calcium, Dissolved	mg/L	13	14	7.41	13	13	0.00
Chloride	mg/L	2.7	2.7	0.00	2.6	2.6	0.00
Magnesium, Dissolved	mg/L	6.5	6.8	4.51	8.1	8	1.24
Manganese, Total	mg/L	0.0012	0.0012 U	0.00	0.0019	0.0019	0.00
Nitrate (as N)	mg/L	0.19	0.05 U	116.67*	0.22	0.22	0.00
Sodium, Dissolved	mg/L	7.9	8.3	4.94	5	5	0.00
Sulfate	mg/L	2.2	2.2	0.00	4.8	4.8	0.00
Total Dissolved Solids (TDS)	mg/L	130	130	0.00	100	100	0.00
Total Organic Carbon (TOC)	mg/L	1.2	1.2	0.00	1 U	1 U	0.00
Vanadium, Total	mg/L	0.0037	0.0036	2.74	0.0029	0.0027	7.14

\* RPD based on result as compared to the Reporting Limit (RL) for a non-detection in the compared sample

U = Result was not detected at or above a concentration greater than the RL. Value provided is the RL for the given sample.

NA = Not applicable. Compared samples were below the RL for a given parameter.

### Lab Qualifier Definitions

Lab Qualifiers	Description	Lab Group
F1	MS and/or MSD Recovery is outside acceptance limits.	280-103543-1, 280-103614-1, 280-103730-1, 280-103734-1
F2	MS/MSD RPD exceeds control limits.	280-103543-1, 280-103614-1, 280-103730-1
F3	Duplicate RPD exceeds the control limit.	
F5	Duplicate RPD exceeds the limit, and one or both sample results are less than 5 times the MRL. The data are considered valid because the absolute difference is less than the MRL.	280-103730-1

Lab Qualifiers	Description	Lab Group
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.	280-103734-1, 280-3956-1
B	Compound was found in the blank and sample.	280-3956-1
H	Sample was prepared or analyzed beyond the specified holding time.	280-3956-1
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.	280-103543-1, 280-103614-1, 280-103730-1, 280-103734-1, 280-3956-1
X	Surrogate is outside control limits.	280-103543-1, 280-103614-1, 280-103730-1, 280-103734-1
*	LCS or LCSD is outside acceptance limits.	280-103614-1, 280-103730-1, 280-103734-1
E	Result exceeded calibration range.	280-103734-1

### Additional Qualifier Definitions

Qualifiers	Description	Lab Group
U	Analyte was not detected above the applicable RL or MDL.	
B	Analyte was detected in corresponding MB sample.	
J	Analyte was detected in the sample above the MDL, but below the RL.	

### Additional Items of Note

The analytes Acrolein, Acrylonitrile, and 2-Chloroethyl Vinyl Ether cannot be reliably quantitated in acid preserved samples, therefore, the reporting limits for the analytes is not reliable or defensible.

### Qualified Data and Usability

Lab qualifiers are noted. All data, as qualified, are acceptable for use.

## ANALYTICAL REPORT

Job Number: 280-103614-1

Job Description: WA02|Olympic View Sanitary LF

For:

Waste Management

2615 Davis Street

San Leandro, CA 94577

Attention: Mr. Patrick Madej



Approved for release.  
Betsy A Sara  
Project Manager II  
12/8/2017 1:04 PM

---

Betsy A Sara, Project Manager II  
4955 Yarrow Street, Arvada, CO, 80002  
(303)736-0189  
betsy.sara@testamericainc.com  
12/08/2017

cc: Mr. Dan Venchiarutti

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

**TestAmerica Laboratories, Inc.**

TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002  
Tel (303) 736-0100 Fax (303) 431-7171 [www.testamericainc.com](http://www.testamericainc.com)



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## CASE NARRATIVE

**Client: Waste Management**

**Project: WA02|Olympic View Sanitary LF**

**Report Number: 280-103614-1**

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

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

### **Sample Receiving**

The samples were received on 11/15/2017; the samples arrived in good condition, properly preserved and on ice. The temperatures of the coolers at receipt were 0.9° C, 1.0° C, 2.3° C and 2.7° C.

### **Holding Times**

The Nitrate result was derived from a calculation and the analysis date/time reflects when the calculation was performed. Nitrate+Nitrite and Nitrite results were required for the calculation. Nitrate+Nitrite analysis has a 28-day holding time. Nitrite analysis has a 48-hour holding time, and due to greater than half of the holding time expiring in transit, the associated Nitrite analysis was performed outside of the 48-hour holding time for the samples MW-43 and MW-19C.

All other holding times were within established control limits.

### **Trip Blank**

N-Butyl alcohol and Chloromethane were detected in the trip blank sample at levels below the requested reporting limits. N-Butyl alcohol and Chloromethane were also detected in several samples at similar levels, therefore indicating the possibility of field or laboratory contamination of N-Butyl alcohol and Chloromethane in these samples.

### **Method Blanks**

All Method Blank recoveries were within established control limits.

### **Laboratory Control Samples (LCS)**

The Method 8260C LCS recovery for 1,1,1,2-Tetrachloroethane was above control limits. Because the data are considered to be biased high and all associated samples were non-detect above the reporting limit for 1,1,1,2-Tetrachloroethane, corrective action was deemed unnecessary.

The Method 8260C laboratory control sample (LCS) recovered below the lower control limit for Methyl acetate. Because Methyl acetate has been identified as a poor performing analyte when analyzed using this method, re-extraction and reanalysis were not performed.

All other Laboratory Control Samples were within established control limits.

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

The Method 8260B SIM MS/MSD performed on sample MW-13A (103543) exhibited MS/MSD surrogate recoveries of Dibromofluoromethane outside control limits. Because the corresponding Matrix Spike and Matrix Spike Duplicate target compound recoveries, Laboratory Control Sample, and Method Blank sample were within control limits, this anomaly is considered to be due to matrix interference and no corrective action was taken.

The Matrix Spikes and Matrix Spike Duplicates performed on samples from other clients exhibited recoveries outside control limits for multiple Method 8260C spike compounds and surrogates. In addition, the RPD results were outside the RPD limits for multiple Method 8260C spike compounds. Because the corresponding Laboratory Control Samples and the Method Blank samples were within control limits, these anomalies may be due to matrix interference and no corrective action was taken.

Sample MW-19C was selected to fulfill the laboratory batch quality control requirements for Method 350.1. Analysis of the laboratory generated MS/MSD for this sample exhibited recoveries of Ammonia below the lower control limit. In addition, the RPD result was outside the RPD limit for Ammonia. Because the corresponding Laboratory Control Sample and the Method Blank sample were within control limits, this anomaly may be due to matrix interference and no corrective action was taken.

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

### **Organics**

The analytes Acrolein, Acrylonitrile and 2-chloroethyl vinyl ether cannot be reliably quantitated in acid preserved samples, therefore, the reporting limits for the analytes Acrolein, Acrylonitrile and 2-chloroethyl vinyl ether is not reliable or defensible.

The Method 8260C surrogate recovery of 4-Bromofluorobenzene was above the upper control limit for samples MW-15R, MW-34C, DUP1 and TRIP BLANK. Because the data are considered to be biased high and all target analytes in the sample were non-detect above the reporting limits, corrective action was deemed unnecessary.

### **General Comments**

The analysis for Volatile Organics by Method 8260C was performed by TestAmerica Buffalo. Their address and phone number are:  
TestAmerica Buffalo  
10 Hazelwood Drive, Suite 106  
Amherst, NY 14228  
716-691-2600

## EXECUTIVE SUMMARY - Detections

Client: Waste Management

Job Number: 280-103614-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-103614-1</b>	<b>MW-36A</b>					
Depth to water		31.05			ft	Field Sampling
Specific Conductivity		123			umhos/cm	Field Sampling
Dissolved Oxygen		3.38			mg/L	Field Sampling
eH		176.0			millivolts	Field Sampling
Turbidity		3.22			NTU	Field Sampling
Temperature		9.60			Degrees C	Field Sampling
pH		5.91			SU	Field Sampling
Chloride		1.8		1.0	mg/L	300.0
Sulfate		2.7		1.0	mg/L	300.0
Nitrate as N		0.22		0.050	mg/L	353.2
Alkalinity, Total (As CaCO3)		58		5.0	mg/L	SM 2320B
Alkalinity, Bicarbonate (As CaCO3)		58		5.0	mg/L	SM 2320B
Total Dissolved Solids (TDS)		110		5.0	mg/L	SM 2540C
<b><i>Dissolved</i></b>						
Calcium, Dissolved		9.5		0.040	mg/L	6010D
Magnesium, Dissolved		6.5		0.050	mg/L	6010D
Potassium, Dissolved		0.87	J	1.0	mg/L	6010D
Sodium, Dissolved		5.9		1.0	mg/L	6010D
Manganese, Dissolved		0.00056	J	0.0010	mg/L	6020B
<b><i>Total Recoverable</i></b>						
Iron, Total		0.085		0.060	mg/L	6010D
Antimony, Total		0.00051	J	0.0010	mg/L	6020B
Barium, Total		0.0023		0.0010	mg/L	6020B
Chromium, Total		0.0080		0.0030	mg/L	6020B
Manganese, Total		0.0028		0.0010	mg/L	6020B
Nickel, Total		0.0016	J	0.0040	mg/L	6020B
Vanadium, Total		0.0022		0.0020	mg/L	6020B

## EXECUTIVE SUMMARY - Detections

Client: Waste Management

Job Number: 280-103614-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-103614-2</b>	<b>MW-33A</b>					
Depth to water		4.02			ft	Field Sampling
Specific Conductivity		109			umhos/cm	Field Sampling
Dissolved Oxygen		0.39			mg/L	Field Sampling
eH		52.0			millivolts	Field Sampling
Turbidity		3.86			NTU	Field Sampling
Temperature		9.60			Degrees C	Field Sampling
pH		6.33			SU	Field Sampling
Chloride		2.1		1.0	mg/L	300.0
Sulfate		2.5		1.0	mg/L	300.0
Alkalinity, Total (As CaCO3)		52		5.0	mg/L	SM 2320B
Alkalinity, Bicarbonate (As CaCO3)		52		5.0	mg/L	SM 2320B
Total Dissolved Solids (TDS)		85		5.0	mg/L	SM 2540C
Total Suspended Solids		4.4		4.0	mg/L	SM 2540D
Total Organic Carbon - Average		3.0		1.0	mg/L	SM 5310B
<b><i>Dissolved</i></b>						
Calcium, Dissolved		11		0.040	mg/L	6010D
Iron, Dissolved		0.075		0.060	mg/L	6010D
Magnesium, Dissolved		5.3		0.050	mg/L	6010D
Potassium, Dissolved		0.76	J	1.0	mg/L	6010D
Sodium, Dissolved		3.4		1.0	mg/L	6010D
Manganese, Dissolved		0.011		0.0010	mg/L	6020B
<b><i>Total Recoverable</i></b>						
Iron, Total		2.5		0.060	mg/L	6010D
Antimony, Total		0.00044	J	0.0010	mg/L	6020B
Barium, Total		0.0023		0.0010	mg/L	6020B
Beryllium, Total		0.00033	J	0.0010	mg/L	6020B
Chromium, Total		0.0010	J	0.0030	mg/L	6020B
Copper, Total		0.0016	J	0.0020	mg/L	6020B
Lead, Total		0.00035	J	0.0010	mg/L	6020B
Manganese, Total		0.028		0.0010	mg/L	6020B
Nickel, Total		0.00054	J	0.0040	mg/L	6020B
Thallium, Total		0.000078	J	0.0010	mg/L	6020B
Vanadium, Total		0.0041		0.0020	mg/L	6020B



## EXECUTIVE SUMMARY - Detections

Client: Waste Management

Job Number: 280-103614-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-103614-3</b>	<b>MW-33C</b>					
Depth to water		1.63			ft	Field Sampling
Specific Conductivity		157			umhos/cm	Field Sampling
Dissolved Oxygen		0.16			mg/L	Field Sampling
eH		-230.0			millivolts	Field Sampling
Turbidity		2.21			NTU	Field Sampling
Temperature		9.11			Degrees C	Field Sampling
pH		7.81			SU	Field Sampling
Chloride		3.0		1.0	mg/L	300.0
Sulfate		8.4		1.0	mg/L	300.0
Alkalinity, Total (As CaCO3)		68		5.0	mg/L	SM 2320B
Alkalinity, Bicarbonate (As CaCO3)		68		5.0	mg/L	SM 2320B
Total Dissolved Solids (TDS)		110		5.0	mg/L	SM 2540C
<b><i>Dissolved</i></b>						
Calcium, Dissolved		17		0.040	mg/L	6010D
Iron, Dissolved		0.051	J	0.060	mg/L	6010D
Magnesium, Dissolved		6.6		0.050	mg/L	6010D
Potassium, Dissolved		1.3		1.0	mg/L	6010D
Sodium, Dissolved		4.0		1.0	mg/L	6010D
Manganese, Dissolved		0.14		0.0010	mg/L	6020B
<b><i>Total Recoverable</i></b>						
Iron, Total		0.083		0.060	mg/L	6010D
Barium, Total		0.0038		0.0010	mg/L	6020B
Manganese, Total		0.15		0.0010	mg/L	6020B

## EXECUTIVE SUMMARY - Detections

Client: Waste Management

Job Number: 280-103614-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-103614-4</b>	<b>MW-15R</b>					
Butyl alcohol, n-		23	J	40	ug/L	8260C
Depth to water		18.77			ft	Field Sampling
Specific Conductivity		152			umhos/cm	Field Sampling
Dissolved Oxygen		0.67			mg/L	Field Sampling
eH		118.0			millivolts	Field Sampling
Turbidity		1.14			NTU	Field Sampling
Temperature		10.19			Degrees C	Field Sampling
pH		6.51			SU	Field Sampling
Chloride		2.6		1.0	mg/L	300.0
Sulfate		4.8		1.0	mg/L	300.0
Nitrate as N		0.22		0.050	mg/L	353.2
Alkalinity, Total (As CaCO3)		68		5.0	mg/L	SM 2320B
Alkalinity, Bicarbonate (As CaCO3)		68		5.0	mg/L	SM 2320B
Total Dissolved Solids (TDS)		100		5.0	mg/L	SM 2540C
<b><i>Dissolved</i></b>						
Calcium, Dissolved		13		0.040	mg/L	6010D
Magnesium, Dissolved		8.1		0.050	mg/L	6010D
Potassium, Dissolved		0.85	J	1.0	mg/L	6010D
Sodium, Dissolved		5.0		1.0	mg/L	6010D
Manganese, Dissolved		0.00098	J	0.0010	mg/L	6020B
<b><i>Total Recoverable</i></b>						
Iron, Total		0.027	J	0.060	mg/L	6010D
Barium, Total		0.0046		0.0010	mg/L	6020B
Manganese, Total		0.0019		0.0010	mg/L	6020B
Nickel, Total		0.00090	J	0.0040	mg/L	6020B
Vanadium, Total		0.0029		0.0020	mg/L	6020B

## EXECUTIVE SUMMARY - Detections

Client: Waste Management

Job Number: 280-103614-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-103614-5FD</b>	<b>DUP2</b>					
Butyl alcohol, n-		26	J	40	ug/L	8260C
Chloride		2.6		1.0	mg/L	300.0
Sulfate		4.8		1.0	mg/L	300.0
Nitrate as N		0.22		0.050	mg/L	353.2
Alkalinity, Total (As CaCO3)		68		5.0	mg/L	SM 2320B
Alkalinity, Bicarbonate (As CaCO3)		68		5.0	mg/L	SM 2320B
Total Dissolved Solids (TDS)		100		5.0	mg/L	SM 2540C
<b><i>Dissolved</i></b>						
Calcium, Dissolved		13		0.040	mg/L	6010D
Magnesium, Dissolved		8.0		0.050	mg/L	6010D
Potassium, Dissolved		0.84	J	1.0	mg/L	6010D
Sodium, Dissolved		5.0		1.0	mg/L	6010D
Manganese, Dissolved		0.00095	J	0.0010	mg/L	6020B
<b><i>Total Recoverable</i></b>						
Iron, Total		0.025	J	0.060	mg/L	6010D
Barium, Total		0.0043		0.0010	mg/L	6020B
Manganese, Total		0.0019		0.0010	mg/L	6020B
Nickel, Total		0.00095	J	0.0040	mg/L	6020B
Vanadium, Total		0.0027		0.0020	mg/L	6020B
Zinc, Total		0.0021	J	0.0050	mg/L	6020B

## EXECUTIVE SUMMARY - Detections

Client: Waste Management

Job Number: 280-103614-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-103614-6</b>	<b>MW-34C</b>					
Vinyl chloride		0.033		0.020	ug/L	8260B SIM
Butyl alcohol, n-		16	J	40	ug/L	8260C
Depth to water		41.34			ft	Field Sampling
Specific Conductivity		232			umhos/cm	Field Sampling
Dissolved Oxygen		0.26			mg/L	Field Sampling
eH		-8.9			millivolts	Field Sampling
Turbidity		158			NTU	Field Sampling
Temperature		13.0			Degrees C	Field Sampling
pH		6.61			SU	Field Sampling
Chloride		5.4		1.0	mg/L	300.0
Sulfate		4.9		1.0	mg/L	300.0
Alkalinity, Total (As CaCO3)		100		5.0	mg/L	SM 2320B
Alkalinity, Bicarbonate (As CaCO3)		100		5.0	mg/L	SM 2320B
Total Dissolved Solids (TDS)		180		5.0	mg/L	SM 2540C
Total Suspended Solids		48		4.0	mg/L	SM 2540D
Total Organic Carbon - Average		1.4		1.0	mg/L	SM 5310B
<b><i>Dissolved</i></b>						
Calcium, Dissolved		21		0.040	mg/L	6010D
Iron, Dissolved		0.58		0.060	mg/L	6010D
Magnesium, Dissolved		9.0		0.050	mg/L	6010D
Potassium, Dissolved		0.98	J	1.0	mg/L	6010D
Sodium, Dissolved		10		1.0	mg/L	6010D
Manganese, Dissolved		0.59		0.0010	mg/L	6020B
<b><i>Total Recoverable</i></b>						
Iron, Total		25		0.060	mg/L	6010D
Barium, Total		0.090		0.0010	mg/L	6020B
Beryllium, Total		0.00014	J	0.0010	mg/L	6020B
Chromium, Total		0.00055	J	0.0030	mg/L	6020B
Copper, Total		0.0016	J	0.0020	mg/L	6020B
Manganese, Total		1.1		0.0010	mg/L	6020B
Nickel, Total		0.00035	J	0.0040	mg/L	6020B
Vanadium, Total		0.0020		0.0020	mg/L	6020B

## EXECUTIVE SUMMARY - Detections

Client: Waste Management

Job Number: 280-103614-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-103614-7</b>	<b>MW-34A</b>					
Butyl alcohol, n-		25	J	40	ug/L	8260C
Chloromethane		0.35	J	1.0	ug/L	8260C
Depth to water		39.49			ft	Field Sampling
Specific Conductivity		162			umhos/cm	Field Sampling
Dissolved Oxygen		0.69			mg/L	Field Sampling
eH		110.2			millivolts	Field Sampling
Turbidity		1.66			NTU	Field Sampling
Temperature		12.25			Degrees C	Field Sampling
pH		5.89			SU	Field Sampling
Chloride		2.7		1.0	mg/L	300.0
Sulfate		2.2		1.0	mg/L	300.0
Nitrate as N		0.19		0.050	mg/L	353.2
Alkalinity, Total (As CaCO3)		76		5.0	mg/L	SM 2320B
Alkalinity, Bicarbonate (As CaCO3)		76		5.0	mg/L	SM 2320B
Total Dissolved Solids (TDS)		130		5.0	mg/L	SM 2540C
Total Organic Carbon - Average		1.2		1.0	mg/L	SM 5310B
<b><i>Dissolved</i></b>						
Calcium, Dissolved		13		0.040	mg/L	6010D
Magnesium, Dissolved		6.5		0.050	mg/L	6010D
Potassium, Dissolved		0.63	J	1.0	mg/L	6010D
Sodium, Dissolved		7.9		1.0	mg/L	6010D
Manganese, Dissolved		0.00052	J	0.0010	mg/L	6020B
<b><i>Total Recoverable</i></b>						
Barium, Total		0.0036		0.0010	mg/L	6020B
Chromium, Total		0.0029	J	0.0030	mg/L	6020B
Manganese, Total		0.0012		0.0010	mg/L	6020B
Nickel, Total		0.0022	J	0.0040	mg/L	6020B
Vanadium, Total		0.0037		0.0020	mg/L	6020B

## EXECUTIVE SUMMARY - Detections

Client: Waste Management

Job Number: 280-103614-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-103614-8FD</b>	<b>DUP1</b>					
Butyl alcohol, n-		22	J	40	ug/L	8260C
Chloromethane		0.74	J	1.0	ug/L	8260C
Chloride		2.7		1.0	mg/L	300.0
Sulfate		2.2		1.0	mg/L	300.0
Alkalinity, Total (As CaCO3)		75		5.0	mg/L	SM 2320B
Alkalinity, Bicarbonate (As CaCO3)		75		5.0	mg/L	SM 2320B
Total Dissolved Solids (TDS)		130		5.0	mg/L	SM 2540C
Total Organic Carbon - Average		1.2		1.0	mg/L	SM 5310B
<b><i>Dissolved</i></b>						
Calcium, Dissolved		14		0.040	mg/L	6010D
Magnesium, Dissolved		6.8		0.050	mg/L	6010D
Potassium, Dissolved		0.67	J	1.0	mg/L	6010D
Sodium, Dissolved		8.3		1.0	mg/L	6010D
Manganese, Dissolved		0.00059	J	0.0010	mg/L	6020B
<b><i>Total Recoverable</i></b>						
Iron, Total		0.039	J	0.060	mg/L	6010D
Barium, Total		0.0039		0.0010	mg/L	6020B
Chromium, Total		0.0028	J	0.0030	mg/L	6020B
Manganese, Total		0.00058	J	0.0010	mg/L	6020B
Nickel, Total		0.0024	J	0.0040	mg/L	6020B
Vanadium, Total		0.0036		0.0020	mg/L	6020B

## EXECUTIVE SUMMARY - Detections

Client: Waste Management

Job Number: 280-103614-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-103614-9</b>	<b>MW-43</b>					
Butyl alcohol, n-		36	J	40	ug/L	8260C
Depth to water		21.18			ft	Field Sampling
Specific Conductivity		50			umhos/cm	Field Sampling
Dissolved Oxygen		0.80			mg/L	Field Sampling
eH		118.7			millivolts	Field Sampling
Turbidity		2.23			NTU	Field Sampling
Temperature		11.27			Degrees C	Field Sampling
pH		5.62			SU	Field Sampling
Chloride		2.3		1.0	mg/L	300.0
Sulfate		1.1		1.0	mg/L	300.0
Nitrate as N		1.1		0.050	mg/L	353.2
Nitrate Nitrite as N		1.1		0.10	mg/L	353.2
Alkalinity, Total (As CaCO3)		14		5.0	mg/L	SM 2320B
Alkalinity, Bicarbonate (As CaCO3)		14		5.0	mg/L	SM 2320B
Total Dissolved Solids (TDS)		34		5.0	mg/L	SM 2540C
Total Organic Carbon - Average		1.3		1.0	mg/L	SM 5310B
<b><i>Dissolved</i></b>						
Calcium, Dissolved		4.0		0.040	mg/L	6010D
Magnesium, Dissolved		1.6		0.050	mg/L	6010D
Potassium, Dissolved		0.57	J	1.0	mg/L	6010D
Sodium, Dissolved		2.2		1.0	mg/L	6010D
Manganese, Dissolved		0.016		0.0010	mg/L	6020B
<b><i>Total Recoverable</i></b>						
Iron, Total		0.74		0.060	mg/L	6010D
Barium, Total		0.0038		0.0010	mg/L	6020B
Manganese, Total		0.027		0.0010	mg/L	6020B
Nickel, Total		0.00053	J	0.0040	mg/L	6020B
Vanadium, Total		0.0013	J	0.0020	mg/L	6020B

## EXECUTIVE SUMMARY - Detections

Client: Waste Management

Job Number: 280-103614-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-103614-10</b>	<b>MW-19C</b>					
Trichloroethene		1.2		1.0	ug/L	8260C
Depth to water		33.67			ft	Field Sampling
Specific Conductivity		173			umhos/cm	Field Sampling
Dissolved Oxygen		0.22			mg/L	Field Sampling
eH		-19.0			millivolts	Field Sampling
Turbidity		1.21			NTU	Field Sampling
Temperature		10.08			Degrees C	Field Sampling
pH		6.82			SU	Field Sampling
Chloride		4.4		1.0	mg/L	300.0
Sulfate		4.1		1.0	mg/L	300.0
Ammonia (as N)		0.46	F1 F2	0.030	mg/L	350.1
Alkalinity, Total (As CaCO3)		74		5.0	mg/L	SM 2320B
Alkalinity, Bicarbonate (As CaCO3)		74		5.0	mg/L	SM 2320B
Total Dissolved Solids (TDS)		120		5.0	mg/L	SM 2540C
<b><i>Dissolved</i></b>						
Calcium, Dissolved		15		0.040	mg/L	6010D
Iron, Dissolved		0.14		0.060	mg/L	6010D
Magnesium, Dissolved		7.4		0.050	mg/L	6010D
Potassium, Dissolved		1.3		1.0	mg/L	6010D
Sodium, Dissolved		5.5		1.0	mg/L	6010D
Manganese, Dissolved		1.2		0.0010	mg/L	6020B
<b><i>Total Recoverable</i></b>						
Iron, Total		0.22		0.060	mg/L	6010D
Barium, Total		0.0041		0.0010	mg/L	6020B
Manganese, Total		1.2		0.0010	mg/L	6020B
Nickel, Total		0.00048	J	0.0040	mg/L	6020B
<b>280-103614-11TB</b>	<b>TRIP BLANK</b>					
Butyl alcohol, n-		31	J	40	ug/L	8260C
Chloromethane		0.77	J	1.0	ug/L	8260C



## METHOD SUMMARY

Client: Waste Management

Job Number: 280-103614-1

Description	Lab Location	Method	Preparation Method
<b>Matrix: Water</b>			
Volatile Organic Compounds (GC/MS)	TAL DEN	SW846 8260B SIM	
Purge and Trap	TAL DEN		SW846 5030B
Metals (ICP)	TAL DEN	SW846 6010D	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Metals (ICP)	TAL DEN	SW846 6010D	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Metals (ICP/MS)	TAL DEN	SW846 6020B	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Metals (ICP/MS)	TAL DEN	SW846 6020B	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Anions, Ion Chromatography	TAL DEN	MCAWW 300.0	
Nitrogen, Ammonia	TAL DEN	MCAWW 350.1	
Nitrate	TAL DEN	EPA 353.2	
Nitrogen, Nitrate-Nitrite	TAL DEN	MCAWW 353.2	
Alkalinity	TAL DEN	SM SM 2320B	
Solids, Total Dissolved (TDS)	TAL DEN	SM SM 2540C	
Solids, Total Suspended (TSS)	TAL DEN	SM SM 2540D	
Organic Carbon, Total (TOC)	TAL DEN	SM SM 5310B	
Field Sampling	TAL DEN	EPA Field Sampling	
Volatile Organic Compounds by GC/MS	TAL BUF	SW846 8260C	
Purge and Trap	TAL BUF		SW846 5030C

### Lab References:

TAL BUF = TestAmerica Buffalo

TAL DEN = TestAmerica Denver

### Method 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.

## METHOD / ANALYST SUMMARY

Client: Waste Management

Job Number: 280-103614-1

<b>Method</b>	<b>Analyst</b>	<b>Analyst ID</b>
SW846 8260B SIM	Moan, Matthew R	MRM
SW846 8260C	Reile, Rebecca S	RRS
SW846 6010D	Lackey, Cara M	CML
SW846 6010D	Rhoades, Chris R	CRR
SW846 6020B	Trudell, Lynn-Anne M	LMT
EPA Field Sampling	Sabsin, Chanchai	CS
MCAWW 300.0	Lehman, Jeffrey M	JML
MCAWW 350.1	Moore, Kevin A	KAM
EPA 353.2	Allen, Andrew J	AJA
MCAWW 353.2	Cherry, Scott V	SVC
SM SM 2320B	Duplin, Alysha 1	A1D
SM SM 2540C	Pedrick, Joshua A	JAP
SM SM 2540D	Cherry, Scott V	SVC
SM SM 5310B	Jewell, Connie C	CCJ

# SAMPLE SUMMARY

Client: Waste Management

Job Number: 280-103614-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
280-103614-1	MW-36A	Water	11/14/2017 0943	11/15/2017 0950
280-103614-2	MW-33A	Water	11/14/2017 1150	11/15/2017 0950
280-103614-3	MW-33C	Water	11/14/2017 1248	11/15/2017 0950
280-103614-4	MW-15R	Water	11/14/2017 1418	11/15/2017 0950
280-103614-5FD	DUP2	Water	11/14/2017 1445	11/15/2017 0950
280-103614-6	MW-34C	Water	11/14/2017 0925	11/15/2017 0950
280-103614-7	MW-34A	Water	11/14/2017 1015	11/15/2017 0950
280-103614-8FD	DUP1	Water	11/14/2017 1025	11/15/2017 0950
280-103614-9	MW-43	Water	11/13/2017 1618	11/15/2017 0950
280-103614-10	MW-19C	Water	11/13/2017 1700	11/15/2017 0950
280-103614-11TB	TRIP BLANK	Water	11/14/2017 0000	11/15/2017 0950

# SAMPLE RESULTS

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-36A**

Lab Sample ID: 280-103614-1

Date Sampled: 11/14/2017 0943

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 8260B SIM Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B SIM	Analysis Batch: 280-396651	Instrument ID: VMS_E
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: E5792.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 11/27/2017 2157		Final Weight/Volume: 20 mL
Prep Date: 11/27/2017 2157		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.018	0.020
Surrogate	%Rec	Qualifier	Acceptance Limits	
Dibromofluoromethane (Surr)	78		77 - 120	

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-33A**

Lab Sample ID: 280-103614-2

Date Sampled: 11/14/2017 1150

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 8260B SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B SIM	Analysis Batch:	280-396651	Instrument ID:	VMS_E
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	E5793.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	11/27/2017 2215			Final Weight/Volume:	20 mL
Prep Date:	11/27/2017 2215				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.018	0.020
Surrogate	%Rec	Qualifier	Acceptance Limits	
Dibromofluoromethane (Surr)	83		77 - 120	

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

Client Sample ID: MW-33C

Lab Sample ID: 280-103614-3

Date Sampled: 11/14/2017 1248

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 8260B SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B SIM	Analysis Batch:	280-396651	Instrument ID:	VMS_E
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	E5794.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	11/27/2017 2233			Final Weight/Volume:	20 mL
Prep Date:	11/27/2017 2233				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.018	0.020
Surrogate	%Rec	Qualifier	Acceptance Limits	
Dibromofluoromethane (Surr)	77		77 - 120	

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-15R**

Lab Sample ID: 280-103614-4

Date Sampled: 11/14/2017 1418

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 8260B SIM Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B SIM	Analysis Batch: 280-396651	Instrument ID: VMS_E
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: E5795.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 11/27/2017 2252		Final Weight/Volume: 20 mL
Prep Date: 11/27/2017 2252		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.018	0.020
Surrogate	%Rec	Qualifier	Acceptance Limits	
Dibromofluoromethane (Surr)	86		77 - 120	



# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: DUP2**

Lab Sample ID: 280-103614-5FD

Date Sampled: 11/14/2017 1445

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 8260B SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B SIM	Analysis Batch:	280-396651	Instrument ID:	VMS_E
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	E5796.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	11/27/2017 2310			Final Weight/Volume:	20 mL
Prep Date:	11/27/2017 2310				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.018	0.020

Surrogate	%Rec	Qualifier	Acceptance Limits
Dibromofluoromethane (Surr)	78		77 - 120

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-34C**

Lab Sample ID: 280-103614-6

Date Sampled: 11/14/2017 0925

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 8260B SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B SIM	Analysis Batch:	280-396651	Instrument ID:	VMS_E
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	E5797.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	11/27/2017 2328			Final Weight/Volume:	20 mL
Prep Date:	11/27/2017 2328				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.033		0.018	0.020
Surrogate	%Rec	Qualifier	Acceptance Limits	
Dibromofluoromethane (Surr)	87		77 - 120	

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-34A**

Lab Sample ID: 280-103614-7

Date Sampled: 11/14/2017 1015

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 8260B SIM Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B SIM	Analysis Batch: 280-396684	Instrument ID: VMS_E
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: E5843.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 11/28/2017 1657		Final Weight/Volume: 20 mL
Prep Date: 11/28/2017 1657		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.018	0.020

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	86		70 - 127

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: DUP1**

Lab Sample ID: 280-103614-8FD

Date Sampled: 11/14/2017 1025

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 8260B SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B SIM	Analysis Batch:	280-396651	Instrument ID:	VMS_E
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	E5799.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	11/28/2017 0004			Final Weight/Volume:	20 mL
Prep Date:	11/28/2017 0004				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.018	0.020
Surrogate	%Rec	Qualifier	Acceptance Limits	
Dibromofluoromethane (Surr)	81		77 - 120	

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-43**

Lab Sample ID: 280-103614-9

Date Sampled: 11/13/2017 1618

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 8260B SIM Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B SIM	Analysis Batch: 280-396651	Instrument ID: VMS_E
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: E5788.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 11/27/2017 2045		Final Weight/Volume: 20 mL
Prep Date: 11/27/2017 2045		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.018	0.020
Surrogate	%Rec	Qualifier	Acceptance Limits	
Dibromofluoromethane (Surr)	84		77 - 120	

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-19C**

Lab Sample ID: 280-103614-10

Date Sampled: 11/13/2017 1700

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 8260B SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B SIM	Analysis Batch:	280-396651	Instrument ID:	VMS_E
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	E5789.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	11/27/2017 2103			Final Weight/Volume:	20 mL
Prep Date:	11/27/2017 2103				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.018	0.020
Surrogate	%Rec	Qualifier	Acceptance Limits	
Dibromofluoromethane (Surr)	87		77 - 120	

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: TRIP BLANK**

Lab Sample ID: 280-103614-11TB

Date Sampled: 11/14/2017 0000

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 8260B SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B SIM	Analysis Batch:	280-396684	Instrument ID:	VMS_E
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	E5844.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	11/28/2017 1715			Final Weight/Volume:	20 mL
Prep Date:	11/28/2017 1715				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.018	0.020

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	83		70 - 127

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-36A**

Lab Sample ID: 280-103614-1

Date Sampled: 11/14/2017 0943

Client Matrix: Water

Date Received: 11/15/2017 0950

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-388235	Instrument ID:	HP5973C
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	C0841.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	11/19/2017 1519			Final Weight/Volume:	5 mL
Prep Date:	11/19/2017 1519				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND	*	0.35	1.0
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,1-Dichloropropene	ND		0.72	1.0
1,2,3-Trichlorobenzene	ND		0.41	1.0
1,2,3-Trichloropropane	ND		0.89	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2,4-Trimethylbenzene	ND		0.75	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane (EDB)	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloroethene, Total	ND		0.81	2.0
1,2-Dichloropropane	ND		0.72	1.0
1,3,5-Trichlorobenzene	ND		0.23	1.0
1,3,5-Trimethylbenzene	ND		0.77	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,3-Dichloropropane	ND		0.75	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
1,4-Dioxane	ND		9.3	40
2,2-Dichloropropane	ND		0.40	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chloroethyl vinyl ether	ND		0.96	5.0
2-Hexanone	ND		1.2	5.0
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Acetonitrile	ND		4.9	15
Acrolein	ND		0.91	20
Acrylonitrile	ND		0.83	5.0
Benzene	ND		0.41	1.0
Bromobenzene	ND		0.80	1.0
Bromochloromethane	ND		0.87	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Butyl alcohol, n-	ND		8.9	40
Butyl alcohol, tert-	ND		3.3	10
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Chlorodifluoromethane	ND		0.26	1.0
Chloroethane	ND		0.32	1.0



# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-36A**

Lab Sample ID: 280-103614-1

Date Sampled: 11/14/2017 0943

Client Matrix: Water

Date Received: 11/15/2017 0950

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388235	Instrument ID: HP5973C
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: C0841.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1519		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1519		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dibromochloromethane	ND		0.32	1.0
Dibromomethane	ND		0.41	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Dichlorofluoromethane	ND		0.34	1.0
Ethyl acetate	ND		0.66	1.0
Ethyl ether	ND		0.72	1.0
Ethyl tert-butyl ether	ND		0.29	1.0
Ethylbenzene	ND		0.74	1.0
Hexachlorobutadiene	ND		0.28	1.0
Hexane	ND		0.40	10
Iodomethane	ND		0.30	1.0
Isobutanol	ND		4.8	25
Isopropyl ether	ND		0.59	1.0
Isopropylbenzene	ND		0.79	1.0
Methacrylonitrile	ND		0.69	5.0
Methyl acetate	ND	*	1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
m-Xylene & p-Xylene	ND		0.66	2.0
Naphthalene	ND		0.43	1.0
n-Butylbenzene	ND		0.64	1.0
N-Propylbenzene	ND		0.69	1.0
o-Chlorotoluene	ND		0.86	1.0
o-Xylene	ND		0.76	1.0
p-Chlorotoluene	ND		0.84	1.0
p-Cymene	ND		0.31	1.0
sec-Butylbenzene	ND		0.75	1.0
Styrene	ND		0.73	1.0
Tert-amyl methyl ether	ND		0.27	1.0
tert-Butylbenzene	ND		0.81	1.0
Tetrachloroethene	ND		0.36	1.0
Tetrahydrofuran	ND		1.3	5.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
trans-1,4-Dichloro-2-butene	ND		0.22	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0
Vinyl acetate	ND		0.85	5.0
Vinyl chloride	ND		0.90	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-36A**

Lab Sample ID: 280-103614-1

Date Sampled: 11/14/2017 0943

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388235	Instrument ID: HP5973C
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: C0841.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1519		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1519		

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	109		77 - 120
4-Bromofluorobenzene (Surr)	118		73 - 120
Toluene-d8 (Surr)	100		80 - 120

## Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-36A**

Lab Sample ID: 280-103614-1

Date Sampled: 11/14/2017 0943

Client Matrix: Water

Date Received: 11/15/2017 0950

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### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 480-388235

Instrument ID: HP5973C

Prep Method: 5030C

Prep Batch: N/A

Lab File ID: C0841.D

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 11/19/2017 1519

Final Weight/Volume: 5 mL

Prep Date: 11/19/2017 1519

### Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
67-72-1	Hexachloroethane TIC	ND	

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

Client Sample ID: MW-33A

Lab Sample ID: 280-103614-2

Date Sampled: 11/14/2017 1150

Client Matrix: Water

Date Received: 11/15/2017 0950

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388235	Instrument ID: HP5973C
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: C0842.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1544		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1544		

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND	*	0.35	1.0
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,1-Dichloropropene	ND		0.72	1.0
1,2,3-Trichlorobenzene	ND		0.41	1.0
1,2,3-Trichloropropane	ND		0.89	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2,4-Trimethylbenzene	ND		0.75	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane (EDB)	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloroethene, Total	ND		0.81	2.0
1,2-Dichloropropane	ND		0.72	1.0
1,3,5-Trichlorobenzene	ND		0.23	1.0
1,3,5-Trimethylbenzene	ND		0.77	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,3-Dichloropropane	ND		0.75	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
1,4-Dioxane	ND		9.3	40
2,2-Dichloropropane	ND		0.40	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chloroethyl vinyl ether	ND		0.96	5.0
2-Hexanone	ND		1.2	5.0
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Acetonitrile	ND		4.9	15
Acrolein	ND		0.91	20
Acrylonitrile	ND		0.83	5.0
Benzene	ND		0.41	1.0
Bromobenzene	ND		0.80	1.0
Bromochloromethane	ND		0.87	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Butyl alcohol, n-	ND		8.9	40
Butyl alcohol, tert-	ND		3.3	10
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Chlorodifluoromethane	ND		0.26	1.0
Chloroethane	ND		0.32	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-33A**

Lab Sample ID: 280-103614-2

Date Sampled: 11/14/2017 1150

Client Matrix: Water

Date Received: 11/15/2017 0950

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388235	Instrument ID: HP5973C
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: C0842.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1544		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1544		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dibromochloromethane	ND		0.32	1.0
Dibromomethane	ND		0.41	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Dichlorofluoromethane	ND		0.34	1.0
Ethyl acetate	ND		0.66	1.0
Ethyl ether	ND		0.72	1.0
Ethyl tert-butyl ether	ND		0.29	1.0
Ethylbenzene	ND		0.74	1.0
Hexachlorobutadiene	ND		0.28	1.0
Hexane	ND		0.40	10
Iodomethane	ND		0.30	1.0
Isobutanol	ND		4.8	25
Isopropyl ether	ND		0.59	1.0
Isopropylbenzene	ND		0.79	1.0
Methacrylonitrile	ND		0.69	5.0
Methyl acetate	ND	*	1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
m-Xylene & p-Xylene	ND		0.66	2.0
Naphthalene	ND		0.43	1.0
n-Butylbenzene	ND		0.64	1.0
N-Propylbenzene	ND		0.69	1.0
o-Chlorotoluene	ND		0.86	1.0
o-Xylene	ND		0.76	1.0
p-Chlorotoluene	ND		0.84	1.0
p-Cymene	ND		0.31	1.0
sec-Butylbenzene	ND		0.75	1.0
Styrene	ND		0.73	1.0
Tert-amyl methyl ether	ND		0.27	1.0
tert-Butylbenzene	ND		0.81	1.0
Tetrachloroethene	ND		0.36	1.0
Tetrahydrofuran	ND		1.3	5.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
trans-1,4-Dichloro-2-butene	ND		0.22	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0
Vinyl acetate	ND		0.85	5.0
Vinyl chloride	ND		0.90	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

Client Sample ID: MW-33A

Lab Sample ID: 280-103614-2

Date Sampled: 11/14/2017 1150

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388235	Instrument ID: HP5973C
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: C0842.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1544		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1544		

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100		77 - 120
4-Bromofluorobenzene (Surr)	118		73 - 120
Toluene-d8 (Surr)	103		80 - 120

## Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-33A**

Lab Sample ID: 280-103614-2

Date Sampled: 11/14/2017 1150

Client Matrix: Water

Date Received: 11/15/2017 0950

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### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 480-388235

Instrument ID: HP5973C

Prep Method: 5030C

Prep Batch: N/A

Lab File ID: C0842.D

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 11/19/2017 1544

Final Weight/Volume: 5 mL

Prep Date: 11/19/2017 1544

### Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
67-72-1	Hexachloroethane TIC	ND	

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-33C**

Lab Sample ID: 280-103614-3

Date Sampled: 11/14/2017 1248

Client Matrix: Water

Date Received: 11/15/2017 0950

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388235	Instrument ID: HP5973C
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: C0843.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1609		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1609		

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND	*	0.35	1.0
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,1-Dichloropropene	ND		0.72	1.0
1,2,3-Trichlorobenzene	ND		0.41	1.0
1,2,3-Trichloropropane	ND		0.89	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2,4-Trimethylbenzene	ND		0.75	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane (EDB)	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloroethene, Total	ND		0.81	2.0
1,2-Dichloropropane	ND		0.72	1.0
1,3,5-Trichlorobenzene	ND		0.23	1.0
1,3,5-Trimethylbenzene	ND		0.77	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,3-Dichloropropane	ND		0.75	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
1,4-Dioxane	ND		9.3	40
2,2-Dichloropropane	ND		0.40	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chloroethyl vinyl ether	ND		0.96	5.0
2-Hexanone	ND		1.2	5.0
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Acetonitrile	ND		4.9	15
Acrolein	ND		0.91	20
Acrylonitrile	ND		0.83	5.0
Benzene	ND		0.41	1.0
Bromobenzene	ND		0.80	1.0
Bromochloromethane	ND		0.87	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Butyl alcohol, n-	ND		8.9	40
Butyl alcohol, tert-	ND		3.3	10
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Chlorodifluoromethane	ND		0.26	1.0
Chloroethane	ND		0.32	1.0



# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-33C**

Lab Sample ID: 280-103614-3

Date Sampled: 11/14/2017 1248

Client Matrix: Water

Date Received: 11/15/2017 0950

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388235	Instrument ID: HP5973C
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: C0843.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1609		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1609		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dibromochloromethane	ND		0.32	1.0
Dibromomethane	ND		0.41	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Dichlorofluoromethane	ND		0.34	1.0
Ethyl acetate	ND		0.66	1.0
Ethyl ether	ND		0.72	1.0
Ethyl tert-butyl ether	ND		0.29	1.0
Ethylbenzene	ND		0.74	1.0
Hexachlorobutadiene	ND		0.28	1.0
Hexane	ND		0.40	10
Iodomethane	ND		0.30	1.0
Isobutanol	ND		4.8	25
Isopropyl ether	ND		0.59	1.0
Isopropylbenzene	ND		0.79	1.0
Methacrylonitrile	ND		0.69	5.0
Methyl acetate	ND	*	1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
m-Xylene & p-Xylene	ND		0.66	2.0
Naphthalene	ND		0.43	1.0
n-Butylbenzene	ND		0.64	1.0
N-Propylbenzene	ND		0.69	1.0
o-Chlorotoluene	ND		0.86	1.0
o-Xylene	ND		0.76	1.0
p-Chlorotoluene	ND		0.84	1.0
p-Cymene	ND		0.31	1.0
sec-Butylbenzene	ND		0.75	1.0
Styrene	ND		0.73	1.0
Tert-amyl methyl ether	ND		0.27	1.0
tert-Butylbenzene	ND		0.81	1.0
Tetrachloroethene	ND		0.36	1.0
Tetrahydrofuran	ND		1.3	5.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
trans-1,4-Dichloro-2-butene	ND		0.22	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0
Vinyl acetate	ND		0.85	5.0
Vinyl chloride	ND		0.90	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-33C**

Lab Sample ID: 280-103614-3

Date Sampled: 11/14/2017 1248

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388235	Instrument ID: HP5973C
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: C0843.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1609		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1609		

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102		77 - 120
4-Bromofluorobenzene (Surr)	120		73 - 120
Toluene-d8 (Surr)	100		80 - 120

## Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-33C**

Lab Sample ID: 280-103614-3

Date Sampled: 11/14/2017 1248

Client Matrix: Water

Date Received: 11/15/2017 0950

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### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 480-388235

Instrument ID: HP5973C

Prep Method: 5030C

Prep Batch: N/A

Lab File ID: C0843.D

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 11/19/2017 1609

Final Weight/Volume: 5 mL

Prep Date: 11/19/2017 1609

### Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
67-72-1	Hexachloroethane TIC	ND	

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

Client Sample ID: MW-15R

Lab Sample ID: 280-103614-4

Date Sampled: 11/14/2017 1418

Client Matrix: Water

Date Received: 11/15/2017 0950

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388235	Instrument ID: HP5973C
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: C0844.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1635		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1635		

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND	*	0.35	1.0
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,1-Dichloropropene	ND		0.72	1.0
1,2,3-Trichlorobenzene	ND		0.41	1.0
1,2,3-Trichloropropane	ND		0.89	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2,4-Trimethylbenzene	ND		0.75	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane (EDB)	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloroethene, Total	ND		0.81	2.0
1,2-Dichloropropane	ND		0.72	1.0
1,3,5-Trichlorobenzene	ND		0.23	1.0
1,3,5-Trimethylbenzene	ND		0.77	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,3-Dichloropropane	ND		0.75	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
1,4-Dioxane	ND		9.3	40
2,2-Dichloropropane	ND		0.40	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chloroethyl vinyl ether	ND		0.96	5.0
2-Hexanone	ND		1.2	5.0
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Acetonitrile	ND		4.9	15
Acrolein	ND		0.91	20
Acrylonitrile	ND		0.83	5.0
Benzene	ND		0.41	1.0
Bromobenzene	ND		0.80	1.0
Bromochloromethane	ND		0.87	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Butyl alcohol, n-	23	J	8.9	40
Butyl alcohol, tert-	ND		3.3	10
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Chlorodifluoromethane	ND		0.26	1.0
Chloroethane	ND		0.32	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-15R**

Lab Sample ID: 280-103614-4

Date Sampled: 11/14/2017 1418

Client Matrix: Water

Date Received: 11/15/2017 0950

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-388235	Instrument ID:	HP5973C
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	C0844.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	11/19/2017 1635			Final Weight/Volume:	5 mL
Prep Date:	11/19/2017 1635				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dibromochloromethane	ND		0.32	1.0
Dibromomethane	ND		0.41	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Dichlorofluoromethane	ND		0.34	1.0
Ethyl acetate	ND		0.66	1.0
Ethyl ether	ND		0.72	1.0
Ethyl tert-butyl ether	ND		0.29	1.0
Ethylbenzene	ND		0.74	1.0
Hexachlorobutadiene	ND		0.28	1.0
Hexane	ND		0.40	10
Iodomethane	ND		0.30	1.0
Isobutanol	ND		4.8	25
Isopropyl ether	ND		0.59	1.0
Isopropylbenzene	ND		0.79	1.0
Methacrylonitrile	ND		0.69	5.0
Methyl acetate	ND	*	1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
m-Xylene & p-Xylene	ND		0.66	2.0
Naphthalene	ND		0.43	1.0
n-Butylbenzene	ND		0.64	1.0
N-Propylbenzene	ND		0.69	1.0
o-Chlorotoluene	ND		0.86	1.0
o-Xylene	ND		0.76	1.0
p-Chlorotoluene	ND		0.84	1.0
p-Cymene	ND		0.31	1.0
sec-Butylbenzene	ND		0.75	1.0
Styrene	ND		0.73	1.0
Tert-amyl methyl ether	ND		0.27	1.0
tert-Butylbenzene	ND		0.81	1.0
Tetrachloroethene	ND		0.36	1.0
Tetrahydrofuran	ND		1.3	5.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
trans-1,4-Dichloro-2-butene	ND		0.22	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0
Vinyl acetate	ND		0.85	5.0
Vinyl chloride	ND		0.90	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-15R**

Lab Sample ID: 280-103614-4

Date Sampled: 11/14/2017 1418

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388235	Instrument ID: HP5973C
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: C0844.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1635		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1635		

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	106		77 - 120
4-Bromofluorobenzene (Surr)	122	X	73 - 120
Toluene-d8 (Surr)	99		80 - 120

## Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-15R**

Lab Sample ID: 280-103614-4

Date Sampled: 11/14/2017 1418

Client Matrix: Water

Date Received: 11/15/2017 0950

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### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 480-388235

Instrument ID: HP5973C

Prep Method: 5030C

Prep Batch: N/A

Lab File ID: C0844.D

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 11/19/2017 1635

Final Weight/Volume: 5 mL

Prep Date: 11/19/2017 1635

### Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
67-72-1	Hexachloroethane TIC	ND	

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: DUP2**

Lab Sample ID: 280-103614-5FD

Date Sampled: 11/14/2017 1445

Client Matrix: Water

Date Received: 11/15/2017 0950

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388235	Instrument ID: HP5973C
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: C0845.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1700		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1700		

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND	*	0.35	1.0
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,1-Dichloropropene	ND		0.72	1.0
1,2,3-Trichlorobenzene	ND		0.41	1.0
1,2,3-Trichloropropane	ND		0.89	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2,4-Trimethylbenzene	ND		0.75	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane (EDB)	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloroethene, Total	ND		0.81	2.0
1,2-Dichloropropane	ND		0.72	1.0
1,3,5-Trichlorobenzene	ND		0.23	1.0
1,3,5-Trimethylbenzene	ND		0.77	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,3-Dichloropropane	ND		0.75	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
1,4-Dioxane	ND		9.3	40
2,2-Dichloropropane	ND		0.40	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chloroethyl vinyl ether	ND		0.96	5.0
2-Hexanone	ND		1.2	5.0
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Acetonitrile	ND		4.9	15
Acrolein	ND		0.91	20
Acrylonitrile	ND		0.83	5.0
Benzene	ND		0.41	1.0
Bromobenzene	ND		0.80	1.0
Bromochloromethane	ND		0.87	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Butyl alcohol, n-	26	J	8.9	40
Butyl alcohol, tert-	ND		3.3	10
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Chlorodifluoromethane	ND		0.26	1.0
Chloroethane	ND		0.32	1.0



# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: DUP2**

Lab Sample ID: 280-103614-5FD

Date Sampled: 11/14/2017 1445

Client Matrix: Water

Date Received: 11/15/2017 0950

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388235	Instrument ID: HP5973C
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: C0845.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1700		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1700		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dibromochloromethane	ND		0.32	1.0
Dibromomethane	ND		0.41	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Dichlorofluoromethane	ND		0.34	1.0
Ethyl acetate	ND		0.66	1.0
Ethyl ether	ND		0.72	1.0
Ethyl tert-butyl ether	ND		0.29	1.0
Ethylbenzene	ND		0.74	1.0
Hexachlorobutadiene	ND		0.28	1.0
Hexane	ND		0.40	10
Iodomethane	ND		0.30	1.0
Isobutanol	ND		4.8	25
Isopropyl ether	ND		0.59	1.0
Isopropylbenzene	ND		0.79	1.0
Methacrylonitrile	ND		0.69	5.0
Methyl acetate	ND	*	1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
m-Xylene & p-Xylene	ND		0.66	2.0
Naphthalene	ND		0.43	1.0
n-Butylbenzene	ND		0.64	1.0
N-Propylbenzene	ND		0.69	1.0
o-Chlorotoluene	ND		0.86	1.0
o-Xylene	ND		0.76	1.0
p-Chlorotoluene	ND		0.84	1.0
p-Cymene	ND		0.31	1.0
sec-Butylbenzene	ND		0.75	1.0
Styrene	ND		0.73	1.0
Tert-amyl methyl ether	ND		0.27	1.0
tert-Butylbenzene	ND		0.81	1.0
Tetrachloroethene	ND		0.36	1.0
Tetrahydrofuran	ND		1.3	5.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
trans-1,4-Dichloro-2-butene	ND		0.22	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0
Vinyl acetate	ND		0.85	5.0
Vinyl chloride	ND		0.90	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: DUP2**

Lab Sample ID: 280-103614-5FD

Date Sampled: 11/14/2017 1445

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388235	Instrument ID: HP5973C
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: C0845.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1700		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1700		

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104		77 - 120
4-Bromofluorobenzene (Surr)	119		73 - 120
Toluene-d8 (Surr)	102		80 - 120

## Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: DUP2**

Lab Sample ID: 280-103614-5FD

Date Sampled: 11/14/2017 1445

Client Matrix: Water

Date Received: 11/15/2017 0950

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### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 480-388235

Instrument ID: HP5973C

Prep Method: 5030C

Prep Batch: N/A

Lab File ID: C0845.D

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 11/19/2017 1700

Final Weight/Volume: 5 mL

Prep Date: 11/19/2017 1700

### Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
67-72-1	Hexachloroethane TIC	ND	

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-34C**

Lab Sample ID: 280-103614-6

Date Sampled: 11/14/2017 0925

Client Matrix: Water

Date Received: 11/15/2017 0950

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388235	Instrument ID: HP5973C
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: C0846.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1725		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1725		

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND	*	0.35	1.0
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,1-Dichloropropene	ND		0.72	1.0
1,2,3-Trichlorobenzene	ND		0.41	1.0
1,2,3-Trichloropropane	ND		0.89	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2,4-Trimethylbenzene	ND		0.75	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane (EDB)	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloroethene, Total	ND		0.81	2.0
1,2-Dichloropropane	ND		0.72	1.0
1,3,5-Trichlorobenzene	ND		0.23	1.0
1,3,5-Trimethylbenzene	ND		0.77	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,3-Dichloropropane	ND		0.75	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
1,4-Dioxane	ND		9.3	40
2,2-Dichloropropane	ND		0.40	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chloroethyl vinyl ether	ND		0.96	5.0
2-Hexanone	ND		1.2	5.0
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Acetonitrile	ND		4.9	15
Acrolein	ND		0.91	20
Acrylonitrile	ND		0.83	5.0
Benzene	ND		0.41	1.0
Bromobenzene	ND		0.80	1.0
Bromochloromethane	ND		0.87	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Butyl alcohol, n-	16	J	8.9	40
Butyl alcohol, tert-	ND		3.3	10
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Chlorodifluoromethane	ND		0.26	1.0
Chloroethane	ND		0.32	1.0

## Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-34C**

Lab Sample ID: 280-103614-6

Date Sampled: 11/14/2017 0925

Client Matrix: Water

Date Received: 11/15/2017 0950

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388235	Instrument ID: HP5973C
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: C0846.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1725		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1725		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dibromochloromethane	ND		0.32	1.0
Dibromomethane	ND		0.41	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Dichlorofluoromethane	ND		0.34	1.0
Ethyl acetate	ND		0.66	1.0
Ethyl ether	ND		0.72	1.0
Ethyl tert-butyl ether	ND		0.29	1.0
Ethylbenzene	ND		0.74	1.0
Hexachlorobutadiene	ND		0.28	1.0
Hexane	ND		0.40	10
Iodomethane	ND		0.30	1.0
Isobutanol	ND		4.8	25
Isopropyl ether	ND		0.59	1.0
Isopropylbenzene	ND		0.79	1.0
Methacrylonitrile	ND		0.69	5.0
Methyl acetate	ND	*	1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
m-Xylene & p-Xylene	ND		0.66	2.0
Naphthalene	ND		0.43	1.0
n-Butylbenzene	ND		0.64	1.0
N-Propylbenzene	ND		0.69	1.0
o-Chlorotoluene	ND		0.86	1.0
o-Xylene	ND		0.76	1.0
p-Chlorotoluene	ND		0.84	1.0
p-Cymene	ND		0.31	1.0
sec-Butylbenzene	ND		0.75	1.0
Styrene	ND		0.73	1.0
Tert-amyl methyl ether	ND		0.27	1.0
tert-Butylbenzene	ND		0.81	1.0
Tetrachloroethene	ND		0.36	1.0
Tetrahydrofuran	ND		1.3	5.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
trans-1,4-Dichloro-2-butene	ND		0.22	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0
Vinyl acetate	ND		0.85	5.0
Vinyl chloride	ND		0.90	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

Client Sample ID: MW-34C

Lab Sample ID: 280-103614-6

Date Sampled: 11/14/2017 0925

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388235	Instrument ID: HP5973C
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: C0846.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1725		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1725		

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	105		77 - 120
4-Bromofluorobenzene (Surr)	122	X	73 - 120
Toluene-d8 (Surr)	102		80 - 120

## Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-34C**

Lab Sample ID: 280-103614-6

Date Sampled: 11/14/2017 0925

Client Matrix: Water

Date Received: 11/15/2017 0950

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### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 480-388235

Instrument ID: HP5973C

Prep Method: 5030C

Prep Batch: N/A

Lab File ID: C0846.D

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 11/19/2017 1725

Final Weight/Volume: 5 mL

Prep Date: 11/19/2017 1725

### Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
67-72-1	Hexachloroethane TIC	ND	

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

Client Sample ID: MW-34A

Lab Sample ID: 280-103614-7

Date Sampled: 11/14/2017 1015

Client Matrix: Water

Date Received: 11/15/2017 0950

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388235	Instrument ID: HP5973C
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: C0847.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1750		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1750		

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND	*	0.35	1.0
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,1-Dichloropropene	ND		0.72	1.0
1,2,3-Trichlorobenzene	ND		0.41	1.0
1,2,3-Trichloropropane	ND		0.89	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2,4-Trimethylbenzene	ND		0.75	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane (EDB)	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloroethene, Total	ND		0.81	2.0
1,2-Dichloropropane	ND		0.72	1.0
1,3,5-Trichlorobenzene	ND		0.23	1.0
1,3,5-Trimethylbenzene	ND		0.77	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,3-Dichloropropane	ND		0.75	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
1,4-Dioxane	ND		9.3	40
2,2-Dichloropropane	ND		0.40	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chloroethyl vinyl ether	ND		0.96	5.0
2-Hexanone	ND		1.2	5.0
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Acetonitrile	ND		4.9	15
Acrolein	ND		0.91	20
Acrylonitrile	ND		0.83	5.0
Benzene	ND		0.41	1.0
Bromobenzene	ND		0.80	1.0
Bromochloromethane	ND		0.87	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Butyl alcohol, n-	25	J	8.9	40
Butyl alcohol, tert-	ND		3.3	10
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Chlorodifluoromethane	ND		0.26	1.0
Chloroethane	ND		0.32	1.0



# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-34A**

Lab Sample ID: 280-103614-7

Date Sampled: 11/14/2017 1015

Client Matrix: Water

Date Received: 11/15/2017 0950

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-388235	Instrument ID:	HP5973C
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	C0847.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	11/19/2017 1750			Final Weight/Volume:	5 mL
Prep Date:	11/19/2017 1750				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloroform	ND		0.34	1.0
Chloromethane	0.35	J	0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dibromochloromethane	ND		0.32	1.0
Dibromomethane	ND		0.41	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Dichlorofluoromethane	ND		0.34	1.0
Ethyl acetate	ND		0.66	1.0
Ethyl ether	ND		0.72	1.0
Ethyl tert-butyl ether	ND		0.29	1.0
Ethylbenzene	ND		0.74	1.0
Hexachlorobutadiene	ND		0.28	1.0
Hexane	ND		0.40	10
Iodomethane	ND		0.30	1.0
Isobutanol	ND		4.8	25
Isopropyl ether	ND		0.59	1.0
Isopropylbenzene	ND		0.79	1.0
Methacrylonitrile	ND		0.69	5.0
Methyl acetate	ND	*	1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
m-Xylene & p-Xylene	ND		0.66	2.0
Naphthalene	ND		0.43	1.0
n-Butylbenzene	ND		0.64	1.0
N-Propylbenzene	ND		0.69	1.0
o-Chlorotoluene	ND		0.86	1.0
o-Xylene	ND		0.76	1.0
p-Chlorotoluene	ND		0.84	1.0
p-Cymene	ND		0.31	1.0
sec-Butylbenzene	ND		0.75	1.0
Styrene	ND		0.73	1.0
Tert-amyl methyl ether	ND		0.27	1.0
tert-Butylbenzene	ND		0.81	1.0
Tetrachloroethene	ND		0.36	1.0
Tetrahydrofuran	ND		1.3	5.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
trans-1,4-Dichloro-2-butene	ND		0.22	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0
Vinyl acetate	ND		0.85	5.0
Vinyl chloride	ND		0.90	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-34A**

Lab Sample ID: 280-103614-7

Date Sampled: 11/14/2017 1015

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388235	Instrument ID: HP5973C
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: C0847.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1750		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1750		

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	108		77 - 120
4-Bromofluorobenzene (Surr)	118		73 - 120
Toluene-d8 (Surr)	101		80 - 120

## Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-34A**

Lab Sample ID: 280-103614-7

Date Sampled: 11/14/2017 1015

Client Matrix: Water

Date Received: 11/15/2017 0950

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### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 480-388235

Instrument ID: HP5973C

Prep Method: 5030C

Prep Batch: N/A

Lab File ID: C0847.D

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 11/19/2017 1750

Final Weight/Volume: 5 mL

Prep Date: 11/19/2017 1750

### Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
67-72-1	Hexachloroethane TIC	ND	

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: DUP1**

Lab Sample ID: 280-103614-8FD

Date Sampled: 11/14/2017 1025

Client Matrix: Water

Date Received: 11/15/2017 0950

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388235	Instrument ID: HP5973C
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: C0848.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1815		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1815		

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND	*	0.35	1.0
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,1-Dichloropropene	ND		0.72	1.0
1,2,3-Trichlorobenzene	ND		0.41	1.0
1,2,3-Trichloropropane	ND		0.89	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2,4-Trimethylbenzene	ND		0.75	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane (EDB)	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloroethene, Total	ND		0.81	2.0
1,2-Dichloropropane	ND		0.72	1.0
1,3,5-Trichlorobenzene	ND		0.23	1.0
1,3,5-Trimethylbenzene	ND		0.77	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,3-Dichloropropane	ND		0.75	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
1,4-Dioxane	ND		9.3	40
2,2-Dichloropropane	ND		0.40	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chloroethyl vinyl ether	ND		0.96	5.0
2-Hexanone	ND		1.2	5.0
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Acetonitrile	ND		4.9	15
Acrolein	ND		0.91	20
Acrylonitrile	ND		0.83	5.0
Benzene	ND		0.41	1.0
Bromobenzene	ND		0.80	1.0
Bromochloromethane	ND		0.87	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Butyl alcohol, n-	22	J	8.9	40
Butyl alcohol, tert-	ND		3.3	10
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Chlorodifluoromethane	ND		0.26	1.0
Chloroethane	ND		0.32	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: DUP1**

Lab Sample ID: 280-103614-8FD

Date Sampled: 11/14/2017 1025

Client Matrix: Water

Date Received: 11/15/2017 0950

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-388235	Instrument ID:	HP5973C
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	C0848.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	11/19/2017 1815			Final Weight/Volume:	5 mL
Prep Date:	11/19/2017 1815				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloroform	ND		0.34	1.0
Chloromethane	0.74	J	0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dibromochloromethane	ND		0.32	1.0
Dibromomethane	ND		0.41	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Dichlorofluoromethane	ND		0.34	1.0
Ethyl acetate	ND		0.66	1.0
Ethyl ether	ND		0.72	1.0
Ethyl tert-butyl ether	ND		0.29	1.0
Ethylbenzene	ND		0.74	1.0
Hexachlorobutadiene	ND		0.28	1.0
Hexane	ND		0.40	10
Iodomethane	ND		0.30	1.0
Isobutanol	ND		4.8	25
Isopropyl ether	ND		0.59	1.0
Isopropylbenzene	ND		0.79	1.0
Methacrylonitrile	ND		0.69	5.0
Methyl acetate	ND	*	1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
m-Xylene & p-Xylene	ND		0.66	2.0
Naphthalene	ND		0.43	1.0
n-Butylbenzene	ND		0.64	1.0
N-Propylbenzene	ND		0.69	1.0
o-Chlorotoluene	ND		0.86	1.0
o-Xylene	ND		0.76	1.0
p-Chlorotoluene	ND		0.84	1.0
p-Cymene	ND		0.31	1.0
sec-Butylbenzene	ND		0.75	1.0
Styrene	ND		0.73	1.0
Tert-amyl methyl ether	ND		0.27	1.0
tert-Butylbenzene	ND		0.81	1.0
Tetrachloroethene	ND		0.36	1.0
Tetrahydrofuran	ND		1.3	5.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
trans-1,4-Dichloro-2-butene	ND		0.22	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0
Vinyl acetate	ND		0.85	5.0
Vinyl chloride	ND		0.90	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: DUP1**

Lab Sample ID: 280-103614-8FD

Date Sampled: 11/14/2017 1025

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388235	Instrument ID: HP5973C
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: C0848.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1815		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1815		

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	106		77 - 120
4-Bromofluorobenzene (Surr)	123	X	73 - 120
Toluene-d8 (Surr)	103		80 - 120

## Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: DUP1**

Lab Sample ID: 280-103614-8FD

Date Sampled: 11/14/2017 1025

Client Matrix: Water

Date Received: 11/15/2017 0950

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### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 480-388235

Instrument ID: HP5973C

Prep Method: 5030C

Prep Batch: N/A

Lab File ID: C0848.D

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 11/19/2017 1815

Final Weight/Volume: 5 mL

Prep Date: 11/19/2017 1815

### Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
67-72-1	Hexachloroethane TIC	ND	

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-43**

Lab Sample ID: 280-103614-9

Date Sampled: 11/13/2017 1618

Client Matrix: Water

Date Received: 11/15/2017 0950

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388239	Instrument ID: HP5975T
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: T1989.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1327		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1327		

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.35	1.0
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,1-Dichloropropene	ND		0.72	1.0
1,2,3-Trichlorobenzene	ND		0.41	1.0
1,2,3-Trichloropropane	ND		0.89	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2,4-Trimethylbenzene	ND		0.75	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane (EDB)	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloroethene, Total	ND		0.81	2.0
1,2-Dichloropropane	ND		0.72	1.0
1,3,5-Trichlorobenzene	ND		0.23	1.0
1,3,5-Trimethylbenzene	ND		0.77	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,3-Dichloropropane	ND		0.75	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
1,4-Dioxane	ND		9.3	40
2,2-Dichloropropane	ND		0.40	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chloroethyl vinyl ether	ND		0.96	5.0
2-Hexanone	ND		1.2	5.0
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Acetonitrile	ND		4.9	15
Acrolein	ND		0.91	20
Acrylonitrile	ND		0.83	5.0
Benzene	ND		0.41	1.0
Bromobenzene	ND		0.80	1.0
Bromochloromethane	ND		0.87	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Butyl alcohol, n-	36	J	8.9	40
Butyl alcohol, tert-	ND		3.3	10
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Chlorodifluoromethane	ND		0.26	1.0
Chloroethane	ND		0.32	1.0



## Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-43**

Lab Sample ID: 280-103614-9

Date Sampled: 11/13/2017 1618

Client Matrix: Water

Date Received: 11/15/2017 0950

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388239	Instrument ID: HP5975T
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: T1989.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1327		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1327		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dibromochloromethane	ND		0.32	1.0
Dibromomethane	ND		0.41	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Dichlorofluoromethane	ND		0.34	1.0
Ethyl acetate	ND		0.66	1.0
Ethyl ether	ND		0.72	1.0
Ethyl tert-butyl ether	ND		0.29	1.0
Ethylbenzene	ND		0.74	1.0
Hexachlorobutadiene	ND		0.28	1.0
Hexane	ND		0.40	10
Iodomethane	ND		0.30	1.0
Isobutanol	ND		4.8	25
Isopropyl ether	ND		0.59	1.0
Isopropylbenzene	ND		0.79	1.0
Methacrylonitrile	ND		0.69	5.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
m-Xylene & p-Xylene	ND		0.66	2.0
Naphthalene	ND		0.43	1.0
n-Butylbenzene	ND		0.64	1.0
N-Propylbenzene	ND		0.69	1.0
o-Chlorotoluene	ND		0.86	1.0
o-Xylene	ND		0.76	1.0
p-Chlorotoluene	ND		0.84	1.0
p-Cymene	ND		0.31	1.0
sec-Butylbenzene	ND		0.75	1.0
Styrene	ND		0.73	1.0
Tert-amyl methyl ether	ND		0.27	1.0
tert-Butylbenzene	ND		0.81	1.0
Tetrachloroethene	ND		0.36	1.0
Tetrahydrofuran	ND		1.3	5.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
trans-1,4-Dichloro-2-butene	ND		0.22	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0
Vinyl acetate	ND		0.85	5.0
Vinyl chloride	ND		0.90	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-43**

Lab Sample ID: 280-103614-9

Date Sampled: 11/13/2017 1618

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388239	Instrument ID: HP5975T
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: T1989.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1327		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1327		

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	103		77 - 120
4-Bromofluorobenzene (Surr)	98		73 - 120
Toluene-d8 (Surr)	104		80 - 120

## Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-43**

Lab Sample ID: 280-103614-9

Date Sampled: 11/13/2017 1618

Client Matrix: Water

Date Received: 11/15/2017 0950

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### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 480-388239

Instrument ID: HP5975T

Prep Method: 5030C

Prep Batch: N/A

Lab File ID: T1989.D

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 11/19/2017 1327

Final Weight/Volume: 5 mL

Prep Date: 11/19/2017 1327

### Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
67-72-1	Hexachloroethane TIC	ND	

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-19C**

Lab Sample ID: 280-103614-10

Date Sampled: 11/13/2017 1700

Client Matrix: Water

Date Received: 11/15/2017 0950

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388239	Instrument ID: HP5975T
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: T1990.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1351		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1351		

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.35	1.0
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,1-Dichloropropene	ND		0.72	1.0
1,2,3-Trichlorobenzene	ND		0.41	1.0
1,2,3-Trichloropropane	ND		0.89	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2,4-Trimethylbenzene	ND		0.75	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane (EDB)	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloroethene, Total	ND		0.81	2.0
1,2-Dichloropropane	ND		0.72	1.0
1,3,5-Trichlorobenzene	ND		0.23	1.0
1,3,5-Trimethylbenzene	ND		0.77	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,3-Dichloropropane	ND		0.75	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
1,4-Dioxane	ND		9.3	40
2,2-Dichloropropane	ND		0.40	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chloroethyl vinyl ether	ND		0.96	5.0
2-Hexanone	ND		1.2	5.0
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Acetonitrile	ND		4.9	15
Acrolein	ND		0.91	20
Acrylonitrile	ND		0.83	5.0
Benzene	ND		0.41	1.0
Bromobenzene	ND		0.80	1.0
Bromochloromethane	ND		0.87	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Butyl alcohol, n-	ND		8.9	40
Butyl alcohol, tert-	ND		3.3	10
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Chlorodifluoromethane	ND		0.26	1.0
Chloroethane	ND		0.32	1.0

## Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-19C**

Lab Sample ID: 280-103614-10

Date Sampled: 11/13/2017 1700

Client Matrix: Water

Date Received: 11/15/2017 0950

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388239	Instrument ID: HP5975T
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: T1990.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1351		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1351		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dibromochloromethane	ND		0.32	1.0
Dibromomethane	ND		0.41	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Dichlorofluoromethane	ND		0.34	1.0
Ethyl acetate	ND		0.66	1.0
Ethyl ether	ND		0.72	1.0
Ethyl tert-butyl ether	ND		0.29	1.0
Ethylbenzene	ND		0.74	1.0
Hexachlorobutadiene	ND		0.28	1.0
Hexane	ND		0.40	10
Iodomethane	ND		0.30	1.0
Isobutanol	ND		4.8	25
Isopropyl ether	ND		0.59	1.0
Isopropylbenzene	ND		0.79	1.0
Methacrylonitrile	ND		0.69	5.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
m-Xylene & p-Xylene	ND		0.66	2.0
Naphthalene	ND		0.43	1.0
n-Butylbenzene	ND		0.64	1.0
N-Propylbenzene	ND		0.69	1.0
o-Chlorotoluene	ND		0.86	1.0
o-Xylene	ND		0.76	1.0
p-Chlorotoluene	ND		0.84	1.0
p-Cymene	ND		0.31	1.0
sec-Butylbenzene	ND		0.75	1.0
Styrene	ND		0.73	1.0
Tert-amyl methyl ether	ND		0.27	1.0
tert-Butylbenzene	ND		0.81	1.0
Tetrachloroethene	ND		0.36	1.0
Tetrahydrofuran	ND		1.3	5.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
trans-1,4-Dichloro-2-butene	ND		0.22	1.0
Trichloroethene	1.2		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0
Vinyl acetate	ND		0.85	5.0
Vinyl chloride	ND		0.90	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-19C**

Lab Sample ID: 280-103614-10

Date Sampled: 11/13/2017 1700

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388239	Instrument ID: HP5975T
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: T1990.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1351		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1351		

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	106		77 - 120
4-Bromofluorobenzene (Surr)	90		73 - 120
Toluene-d8 (Surr)	103		80 - 120

## Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-19C**

Lab Sample ID: 280-103614-10

Date Sampled: 11/13/2017 1700

Client Matrix: Water

Date Received: 11/15/2017 0950

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### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388239	Instrument ID: HP5975T
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: T1990.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1351		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1351		

### Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
67-72-1	Hexachloroethane TIC	ND	

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 280-103614-11TB

Date Sampled: 11/14/2017 0000

Client Matrix: Water

Date Received: 11/15/2017 0950

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388235	Instrument ID: HP5973C
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: C0849.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1840		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1840		

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND	*	0.35	1.0
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,1-Dichloropropene	ND		0.72	1.0
1,2,3-Trichlorobenzene	ND		0.41	1.0
1,2,3-Trichloropropane	ND		0.89	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2,4-Trimethylbenzene	ND		0.75	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane (EDB)	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloroethene, Total	ND		0.81	2.0
1,2-Dichloropropane	ND		0.72	1.0
1,3,5-Trichlorobenzene	ND		0.23	1.0
1,3,5-Trimethylbenzene	ND		0.77	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,3-Dichloropropane	ND		0.75	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
1,4-Dioxane	ND		9.3	40
2,2-Dichloropropane	ND		0.40	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chloroethyl vinyl ether	ND		0.96	5.0
2-Hexanone	ND		1.2	5.0
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Acetonitrile	ND		4.9	15
Acrolein	ND		0.91	20
Acrylonitrile	ND		0.83	5.0
Benzene	ND		0.41	1.0
Bromobenzene	ND		0.80	1.0
Bromochloromethane	ND		0.87	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Butyl alcohol, n-	31	J	8.9	40
Butyl alcohol, tert-	ND		3.3	10
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Chlorodifluoromethane	ND		0.26	1.0
Chloroethane	ND		0.32	1.0



# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 280-103614-11TB

Date Sampled: 11/14/2017 0000

Client Matrix: Water

Date Received: 11/15/2017 0950

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-388235	Instrument ID:	HP5973C
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	C0849.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	11/19/2017 1840			Final Weight/Volume:	5 mL
Prep Date:	11/19/2017 1840				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloroform	ND		0.34	1.0
Chloromethane	0.77	J	0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dibromochloromethane	ND		0.32	1.0
Dibromomethane	ND		0.41	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Dichlorofluoromethane	ND		0.34	1.0
Ethyl acetate	ND		0.66	1.0
Ethyl ether	ND		0.72	1.0
Ethyl tert-butyl ether	ND		0.29	1.0
Ethylbenzene	ND		0.74	1.0
Hexachlorobutadiene	ND		0.28	1.0
Hexane	ND		0.40	10
Iodomethane	ND		0.30	1.0
Isobutanol	ND		4.8	25
Isopropyl ether	ND		0.59	1.0
Isopropylbenzene	ND		0.79	1.0
Methacrylonitrile	ND		0.69	5.0
Methyl acetate	ND	*	1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
m-Xylene & p-Xylene	ND		0.66	2.0
Naphthalene	ND		0.43	1.0
n-Butylbenzene	ND		0.64	1.0
N-Propylbenzene	ND		0.69	1.0
o-Chlorotoluene	ND		0.86	1.0
o-Xylene	ND		0.76	1.0
p-Chlorotoluene	ND		0.84	1.0
p-Cymene	ND		0.31	1.0
sec-Butylbenzene	ND		0.75	1.0
Styrene	ND		0.73	1.0
Tert-amyl methyl ether	ND		0.27	1.0
tert-Butylbenzene	ND		0.81	1.0
Tetrachloroethene	ND		0.36	1.0
Tetrahydrofuran	ND		1.3	5.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
trans-1,4-Dichloro-2-butene	ND		0.22	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0
Vinyl acetate	ND		0.85	5.0
Vinyl chloride	ND		0.90	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 280-103614-11TB

Date Sampled: 11/14/2017 0000

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388235	Instrument ID: HP5973C
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: C0849.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1840		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1840		

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	109		77 - 120
4-Bromofluorobenzene (Surr)	122	X	73 - 120
Toluene-d8 (Surr)	99		80 - 120

## Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: TRIP BLANK**

Lab Sample ID: 280-103614-11TB

Date Sampled: 11/14/2017 0000

Client Matrix: Water

Date Received: 11/15/2017 0950

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### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 480-388235

Instrument ID: HP5973C

Prep Method: 5030C

Prep Batch: N/A

Lab File ID: C0849.D

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 11/19/2017 1840

Final Weight/Volume: 5 mL

Prep Date: 11/19/2017 1840

### Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
67-72-1	Hexachloroethane TIC	ND	

## Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-36A**

Lab Sample ID: 280-103614-1

Date Sampled: 11/14/2017 0943

Client Matrix: Water

Date Received: 11/15/2017 0950

### 6010D Metals (ICP)-Total Recoverable

Analysis Method: 6010D	Analysis Batch: 280-396876	Instrument ID: MT_051
Prep Method: 3005A	Prep Batch: 280-396510	Lab File ID: 51A112817A.csv
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/28/2017 1947		Final Weight/Volume: 50 mL
Prep Date: 11/28/2017 0806		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Cobalt, Total	ND		0.0012	0.0030
Iron, Total	0.085		0.022	0.060

### 6010D Metals (ICP)-Dissolved

Analysis Method: 6010D	Analysis Batch: 280-396202	Instrument ID: MT_025
Prep Method: 3005A	Prep Batch: 280-395708	Lab File ID: 25A112117b.asc
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/21/2017 1741		Final Weight/Volume: 50 mL
Prep Date: 11/21/2017 0752		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Calcium, Dissolved	9.5		0.035	0.040
Iron, Dissolved	ND		0.022	0.060
Magnesium, Dissolved	6.5		0.011	0.050
Potassium, Dissolved	0.87	J	0.24	1.0
Sodium, Dissolved	5.9		0.12	1.0

### 6020B Metals (ICP/MS)-Total Recoverable

Analysis Method: 6020B	Analysis Batch: 280-396711	Instrument ID: MT_078
Prep Method: 3005A	Prep Batch: 280-396509	Lab File ID: 185SMPL_112717.D
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/27/2017 2340		Final Weight/Volume: 50 mL
Prep Date: 11/27/2017 1610		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Antimony, Total	0.00051	J	0.00040	0.0010
Barium, Total	0.0023		0.00029	0.0010
Beryllium, Total	ND		0.000080	0.0010
Cadmium, Total	ND		0.00027	0.00020
Chromium, Total	0.0080		0.00050	0.0030
Copper, Total	ND		0.00056	0.0020
Lead, Total	ND		0.00018	0.0010
Manganese, Total	0.0028		0.00031	0.0010
Nickel, Total	0.0016	J	0.00030	0.0040
Silver, Total	ND		0.000033	0.0020
Thallium, Total	ND		0.000050	0.0010
Vanadium, Total	0.0022		0.00050	0.0020
Zinc, Total	ND		0.0020	0.0050

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-36A**

Lab Sample ID: 280-103614-1

Date Sampled: 11/14/2017 0943

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 6020B Metals (ICP/MS)-Total Recoverable

Analysis Method: 6020B	Analysis Batch: 280-396711	Instrument ID: MT_078
Prep Method: 3005A	Prep Batch: 280-396509	Lab File ID: 220SMPL_112717.D
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/28/2017 0140		Final Weight/Volume: 50 mL
Prep Date: 11/27/2017 1610		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Selenium, Total	ND		0.00070	0.0010

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## 6020B Metals (ICP/MS)-Dissolved

Analysis Method: 6020B	Analysis Batch: 280-396328	Instrument ID: MT_077
Prep Method: 3005A	Prep Batch: 280-395711	Lab File ID: 060SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/21/2017 1758		Final Weight/Volume: 50 mL
Prep Date: 11/21/2017 0752		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Manganese, Dissolved	0.00056	J	0.00031	0.0010

## Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-33A**

Lab Sample ID: 280-103614-2  
Client Matrix: Water

Date Sampled: 11/14/2017 1150  
Date Received: 11/15/2017 0950

### 6010D Metals (ICP)-Total Recoverable

Analysis Method: 6010D	Analysis Batch: 280-396876	Instrument ID: MT_051
Prep Method: 3005A	Prep Batch: 280-396510	Lab File ID: 51A112817A.csv
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/28/2017 1950		Final Weight/Volume: 50 mL
Prep Date: 11/28/2017 0806		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Cobalt, Total	ND		0.0012	0.0030
Iron, Total	2.5		0.022	0.060

### 6010D Metals (ICP)-Dissolved

Analysis Method: 6010D	Analysis Batch: 280-396202	Instrument ID: MT_025
Prep Method: 3005A	Prep Batch: 280-395708	Lab File ID: 25A112117b.asc
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/21/2017 1743		Final Weight/Volume: 50 mL
Prep Date: 11/21/2017 0752		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Calcium, Dissolved	11		0.035	0.040
Iron, Dissolved	0.075		0.022	0.060
Magnesium, Dissolved	5.3		0.011	0.050
Potassium, Dissolved	0.76	J	0.24	1.0
Sodium, Dissolved	3.4		0.12	1.0

### 6020B Metals (ICP/MS)-Total Recoverable

Analysis Method: 6020B	Analysis Batch: 280-396711	Instrument ID: MT_078
Prep Method: 3005A	Prep Batch: 280-396509	Lab File ID: 190SMPL_112717.D
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/27/2017 2357		Final Weight/Volume: 50 mL
Prep Date: 11/27/2017 1610		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Antimony, Total	0.00044	J	0.00040	0.0010
Barium, Total	0.0023		0.00029	0.0010
Beryllium, Total	0.00033	J	0.000080	0.0010
Cadmium, Total	ND		0.00027	0.00020
Chromium, Total	0.0010	J	0.00050	0.0030
Copper, Total	0.0016	J	0.00056	0.0020
Lead, Total	0.00035	J	0.00018	0.0010
Manganese, Total	0.028		0.00031	0.0010
Nickel, Total	0.00054	J	0.00030	0.0040
Silver, Total	ND		0.000033	0.0020
Thallium, Total	0.000078	J	0.000050	0.0010
Vanadium, Total	0.0041		0.00050	0.0020
Zinc, Total	ND		0.0020	0.0050

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-33A**

Lab Sample ID: 280-103614-2

Date Sampled: 11/14/2017 1150

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 6020B Metals (ICP/MS)-Total Recoverable

Analysis Method: 6020B	Analysis Batch: 280-396711	Instrument ID: MT_078
Prep Method: 3005A	Prep Batch: 280-396509	Lab File ID: 225SMPL_112717.D
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/28/2017 0158		Final Weight/Volume: 50 mL
Prep Date: 11/27/2017 1610		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Selenium, Total	ND		0.00070	0.0010

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## 6020B Metals (ICP/MS)-Dissolved

Analysis Method: 6020B	Analysis Batch: 280-396328	Instrument ID: MT_077
Prep Method: 3005A	Prep Batch: 280-395711	Lab File ID: 061SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/21/2017 1802		Final Weight/Volume: 50 mL
Prep Date: 11/21/2017 0752		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Manganese, Dissolved	0.011		0.00031	0.0010

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-33C**

Lab Sample ID: 280-103614-3

Date Sampled: 11/14/2017 1248

Client Matrix: Water

Date Received: 11/15/2017 0950

## 6010D Metals (ICP)-Total Recoverable

Analysis Method: 6010D      Analysis Batch: 280-396876      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-396510      Lab File ID: 51A112817A.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/28/2017 2004      Final Weight/Volume: 50 mL  
Prep Date: 11/28/2017 0806

Analyte	Result (mg/L)	Qualifier	MDL	RL
Cobalt, Total	ND		0.0012	0.0030
Iron, Total	0.083		0.022	0.060

## 6010D Metals (ICP)-Dissolved

Analysis Method: 6010D      Analysis Batch: 280-396202      Instrument ID: MT\_025  
Prep Method: 3005A      Prep Batch: 280-395708      Lab File ID: 25A112117b.asc  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/21/2017 1746      Final Weight/Volume: 50 mL  
Prep Date: 11/21/2017 0752

Analyte	Result (mg/L)	Qualifier	MDL	RL
Calcium, Dissolved	17		0.035	0.040
Iron, Dissolved	0.051	J	0.022	0.060
Magnesium, Dissolved	6.6		0.011	0.050
Potassium, Dissolved	1.3		0.24	1.0
Sodium, Dissolved	4.0		0.12	1.0

## 6020B Metals (ICP/MS)-Total Recoverable

Analysis Method: 6020B      Analysis Batch: 280-396711      Instrument ID: MT\_078  
Prep Method: 3005A      Prep Batch: 280-396509      Lab File ID: 198SMPL\_112717.D  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/28/2017 0024      Final Weight/Volume: 50 mL  
Prep Date: 11/27/2017 1610

Analyte	Result (mg/L)	Qualifier	MDL	RL
Antimony, Total	ND		0.00040	0.0010
Barium, Total	0.0038		0.00029	0.0010
Beryllium, Total	ND		0.000080	0.0010
Cadmium, Total	ND		0.00027	0.00020
Chromium, Total	ND		0.00050	0.0030
Copper, Total	ND		0.00056	0.0020
Lead, Total	ND		0.00018	0.0010
Manganese, Total	0.15		0.00031	0.0010
Nickel, Total	ND		0.00030	0.0040
Selenium, Total	ND		0.00070	0.0010
Silver, Total	ND		0.000033	0.0020
Thallium, Total	ND		0.000050	0.0010
Vanadium, Total	ND		0.00050	0.0020
Zinc, Total	ND		0.0020	0.0050



# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-33C**

Lab Sample ID: 280-103614-3

Date Sampled: 11/14/2017 1248

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 6020B Metals (ICP/MS)-Dissolved

Analysis Method: 6020B

Analysis Batch: 280-396328

Instrument ID: MT\_077

Prep Method: 3005A

Prep Batch: 280-395711

Lab File ID: 062SMPL.d

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 11/21/2017 1806

Final Weight/Volume: 50 mL

Prep Date: 11/21/2017 0752

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Analyte	Result (mg/L)	Qualifier	MDL	RL
Manganese, Dissolved	0.14		0.00031	0.0010

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# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-15R**

Lab Sample ID: 280-103614-4

Date Sampled: 11/14/2017 1418

Client Matrix: Water

Date Received: 11/15/2017 0950

## 6010D Metals (ICP)-Total Recoverable

Analysis Method: 6010D      Analysis Batch: 280-396876      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-396510      Lab File ID: 51A112817A.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/28/2017 2019      Final Weight/Volume: 50 mL  
Prep Date: 11/28/2017 0806

Analyte	Result (mg/L)	Qualifier	MDL	RL
Cobalt, Total	ND		0.0012	0.0030
Iron, Total	0.027	J	0.022	0.060

## 6010D Metals (ICP)-Dissolved

Analysis Method: 6010D      Analysis Batch: 280-396202      Instrument ID: MT\_025  
Prep Method: 3005A      Prep Batch: 280-395708      Lab File ID: 25A112117b.asc  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/21/2017 1749      Final Weight/Volume: 50 mL  
Prep Date: 11/21/2017 0752

Analyte	Result (mg/L)	Qualifier	MDL	RL
Calcium, Dissolved	13		0.035	0.040
Iron, Dissolved	ND		0.022	0.060
Magnesium, Dissolved	8.1		0.011	0.050
Potassium, Dissolved	0.85	J	0.24	1.0
Sodium, Dissolved	5.0		0.12	1.0

## 6020B Metals (ICP/MS)-Total Recoverable

Analysis Method: 6020B      Analysis Batch: 280-396711      Instrument ID: MT\_078  
Prep Method: 3005A      Prep Batch: 280-396509      Lab File ID: 199SMPL\_112717.D  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/28/2017 0028      Final Weight/Volume: 50 mL  
Prep Date: 11/27/2017 1610

Analyte	Result (mg/L)	Qualifier	MDL	RL
Antimony, Total	ND		0.00040	0.0010
Barium, Total	0.0046		0.00029	0.0010
Beryllium, Total	ND		0.000080	0.0010
Cadmium, Total	ND		0.00027	0.00020
Chromium, Total	ND		0.00050	0.0030
Copper, Total	ND		0.00056	0.0020
Lead, Total	ND		0.00018	0.0010
Manganese, Total	0.0019		0.00031	0.0010
Nickel, Total	0.00090	J	0.00030	0.0040
Selenium, Total	ND		0.00070	0.0010
Silver, Total	ND		0.000033	0.0020
Thallium, Total	ND		0.000050	0.0010
Vanadium, Total	0.0029		0.00050	0.0020
Zinc, Total	ND		0.0020	0.0050

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-15R**

Lab Sample ID: 280-103614-4

Date Sampled: 11/14/2017 1418

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 6020B Metals (ICP/MS)-Dissolved

Analysis Method: 6020B

Analysis Batch: 280-396328

Instrument ID: MT\_077

Prep Method: 3005A

Prep Batch: 280-395711

Lab File ID: 063SMPL.d

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 11/21/2017 1810

Final Weight/Volume: 50 mL

Prep Date: 11/21/2017 0752

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Analyte	Result (mg/L)	Qualifier	MDL	RL
Manganese, Dissolved	0.00098	J	0.00031	0.0010

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# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: DUP2**

Lab Sample ID: 280-103614-5FD

Date Sampled: 11/14/2017 1445

Client Matrix: Water

Date Received: 11/15/2017 0950

## 6010D Metals (ICP)-Total Recoverable

Analysis Method: 6010D      Analysis Batch: 280-396876      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-396510      Lab File ID: 51A112817A.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/28/2017 2022      Final Weight/Volume: 50 mL  
Prep Date: 11/28/2017 0806

Analyte	Result (mg/L)	Qualifier	MDL	RL
Cobalt, Total	ND		0.0012	0.0030
Iron, Total	0.025	J	0.022	0.060

## 6010D Metals (ICP)-Dissolved

Analysis Method: 6010D      Analysis Batch: 280-396202      Instrument ID: MT\_025  
Prep Method: 3005A      Prep Batch: 280-395708      Lab File ID: 25A112117b.asc  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/21/2017 1751      Final Weight/Volume: 50 mL  
Prep Date: 11/21/2017 0752

Analyte	Result (mg/L)	Qualifier	MDL	RL
Calcium, Dissolved	13		0.035	0.040
Iron, Dissolved	ND		0.022	0.060
Magnesium, Dissolved	8.0		0.011	0.050
Potassium, Dissolved	0.84	J	0.24	1.0
Sodium, Dissolved	5.0		0.12	1.0

## 6020B Metals (ICP/MS)-Total Recoverable

Analysis Method: 6020B      Analysis Batch: 280-396711      Instrument ID: MT\_078  
Prep Method: 3005A      Prep Batch: 280-396509      Lab File ID: 200SMPL\_112717.D  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/28/2017 0031      Final Weight/Volume: 50 mL  
Prep Date: 11/27/2017 1610

Analyte	Result (mg/L)	Qualifier	MDL	RL
Antimony, Total	ND		0.00040	0.0010
Barium, Total	0.0043		0.00029	0.0010
Beryllium, Total	ND		0.000080	0.0010
Cadmium, Total	ND		0.00027	0.00020
Chromium, Total	ND		0.00050	0.0030
Copper, Total	ND		0.00056	0.0020
Lead, Total	ND		0.00018	0.0010
Manganese, Total	0.0019		0.00031	0.0010
Nickel, Total	0.00095	J	0.00030	0.0040
Selenium, Total	ND		0.00070	0.0010
Silver, Total	ND		0.000033	0.0020
Thallium, Total	ND		0.000050	0.0010
Vanadium, Total	0.0027		0.00050	0.0020
Zinc, Total	0.0021	J	0.0020	0.0050

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: DUP2**

Lab Sample ID: 280-103614-5FD

Date Sampled: 11/14/2017 1445

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 6020B Metals (ICP/MS)-Dissolved

Analysis Method: 6020B

Analysis Batch: 280-396328

Instrument ID: MT\_077

Prep Method: 3005A

Prep Batch: 280-395711

Lab File ID: 064SMPL.d

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 11/21/2017 1814

Final Weight/Volume: 50 mL

Prep Date: 11/21/2017 0752

Analyte	Result (mg/L)	Qualifier	MDL	RL
Manganese, Dissolved	0.00095	J	0.00031	0.0010

## Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-34C**

Lab Sample ID: 280-103614-6

Date Sampled: 11/14/2017 0925

Client Matrix: Water

Date Received: 11/15/2017 0950

### 6010D Metals (ICP)-Total Recoverable

Analysis Method: 6010D	Analysis Batch: 280-396876	Instrument ID: MT_051
Prep Method: 3005A	Prep Batch: 280-396510	Lab File ID: 51A112817A.csv
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/28/2017 2025		Final Weight/Volume: 50 mL
Prep Date: 11/28/2017 0806		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Cobalt, Total	ND		0.0012	0.0030
Iron, Total	25		0.022	0.060

### 6010D Metals (ICP)-Dissolved

Analysis Method: 6010D	Analysis Batch: 280-396202	Instrument ID: MT_025
Prep Method: 3005A	Prep Batch: 280-395708	Lab File ID: 25A112117b.asc
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/21/2017 1754		Final Weight/Volume: 50 mL
Prep Date: 11/21/2017 0752		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Calcium, Dissolved	21		0.035	0.040
Iron, Dissolved	0.58		0.022	0.060
Magnesium, Dissolved	9.0		0.011	0.050
Potassium, Dissolved	0.98	J	0.24	1.0
Sodium, Dissolved	10		0.12	1.0

### 6020B Metals (ICP/MS)-Total Recoverable

Analysis Method: 6020B	Analysis Batch: 280-396711	Instrument ID: MT_078
Prep Method: 3005A	Prep Batch: 280-396509	Lab File ID: 201SMPL_112717.D
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/28/2017 0034		Final Weight/Volume: 50 mL
Prep Date: 11/27/2017 1610		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Antimony, Total	ND		0.00040	0.0010
Barium, Total	0.090		0.00029	0.0010
Beryllium, Total	0.00014	J	0.000080	0.0010
Cadmium, Total	ND		0.00027	0.00020
Chromium, Total	0.00055	J	0.00050	0.0030
Copper, Total	0.0016	J	0.00056	0.0020
Lead, Total	ND		0.00018	0.0010
Manganese, Total	1.1		0.00031	0.0010
Nickel, Total	0.00035	J	0.00030	0.0040
Selenium, Total	ND		0.00070	0.0010
Silver, Total	ND		0.000033	0.0020
Thallium, Total	ND		0.000050	0.0010
Vanadium, Total	0.0020		0.00050	0.0020
Zinc, Total	ND		0.0020	0.0050

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-34C**

Lab Sample ID: 280-103614-6

Date Sampled: 11/14/2017 0925

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 6020B Metals (ICP/MS)-Dissolved

Analysis Method: 6020B

Analysis Batch: 280-396328

Instrument ID: MT\_077

Prep Method: 3005A

Prep Batch: 280-395711

Lab File ID: 065SMPL.d

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 11/21/2017 1817

Final Weight/Volume: 50 mL

Prep Date: 11/21/2017 0752

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Analyte	Result (mg/L)	Qualifier	MDL	RL
Manganese, Dissolved	0.59		0.00031	0.0010

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## Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-34A**

Lab Sample ID: 280-103614-7

Date Sampled: 11/14/2017 1015

Client Matrix: Water

Date Received: 11/15/2017 0950

### 6010D Metals (ICP)-Total Recoverable

Analysis Method: 6010D	Analysis Batch: 280-396876	Instrument ID: MT_051
Prep Method: 3005A	Prep Batch: 280-396510	Lab File ID: 51A112817A.csv
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/28/2017 2028		Final Weight/Volume: 50 mL
Prep Date: 11/28/2017 0806		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Cobalt, Total	ND		0.0012	0.0030
Iron, Total	ND		0.022	0.060

### 6010D Metals (ICP)-Dissolved

Analysis Method: 6010D	Analysis Batch: 280-396202	Instrument ID: MT_025
Prep Method: 3005A	Prep Batch: 280-395708	Lab File ID: 25A112117b.asc
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/21/2017 1757		Final Weight/Volume: 50 mL
Prep Date: 11/21/2017 0752		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Calcium, Dissolved	13		0.035	0.040
Iron, Dissolved	ND		0.022	0.060
Magnesium, Dissolved	6.5		0.011	0.050
Potassium, Dissolved	0.63	J	0.24	1.0
Sodium, Dissolved	7.9		0.12	1.0

### 6020B Metals (ICP/MS)-Total Recoverable

Analysis Method: 6020B	Analysis Batch: 280-396711	Instrument ID: MT_078
Prep Method: 3005A	Prep Batch: 280-396509	Lab File ID: 202SMPL_112717.D
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/28/2017 0038		Final Weight/Volume: 50 mL
Prep Date: 11/27/2017 1610		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Antimony, Total	ND		0.00040	0.0010
Barium, Total	0.0036		0.00029	0.0010
Beryllium, Total	ND		0.000080	0.0010
Cadmium, Total	ND		0.00027	0.00020
Chromium, Total	0.0029	J	0.00050	0.0030
Copper, Total	ND		0.00056	0.0020
Lead, Total	ND		0.00018	0.0010
Manganese, Total	0.0012		0.00031	0.0010
Nickel, Total	0.0022	J	0.00030	0.0040
Selenium, Total	ND		0.00070	0.0010
Silver, Total	ND		0.000033	0.0020
Thallium, Total	ND		0.000050	0.0010
Vanadium, Total	0.0037		0.00050	0.0020
Zinc, Total	ND		0.0020	0.0050



# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-34A**

Lab Sample ID: 280-103614-7

Date Sampled: 11/14/2017 1015

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 6020B Metals (ICP/MS)-Dissolved

Analysis Method: 6020B

Analysis Batch: 280-396328

Instrument ID: MT\_077

Prep Method: 3005A

Prep Batch: 280-395711

Lab File ID: 066SMPL.d

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 11/21/2017 1821

Final Weight/Volume: 50 mL

Prep Date: 11/21/2017 0752

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Analyte	Result (mg/L)	Qualifier	MDL	RL
Manganese, Dissolved	0.00052	J	0.00031	0.0010

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# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: DUP1**

Lab Sample ID: 280-103614-8FD  
Client Matrix: Water

Date Sampled: 11/14/2017 1025  
Date Received: 11/15/2017 0950

## 6010D Metals (ICP)-Total Recoverable

Analysis Method: 6010D      Analysis Batch: 280-396876      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-396510      Lab File ID: 51A112817A.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/28/2017 2031      Final Weight/Volume: 50 mL  
Prep Date: 11/28/2017 0806

Analyte	Result (mg/L)	Qualifier	MDL	RL
Cobalt, Total	ND		0.0012	0.0030
Iron, Total	0.039	J	0.022	0.060

## 6010D Metals (ICP)-Dissolved

Analysis Method: 6010D      Analysis Batch: 280-396202      Instrument ID: MT\_025  
Prep Method: 3005A      Prep Batch: 280-395708      Lab File ID: 25A112117b.asc  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/21/2017 1759      Final Weight/Volume: 50 mL  
Prep Date: 11/21/2017 0752

Analyte	Result (mg/L)	Qualifier	MDL	RL
Calcium, Dissolved	14		0.035	0.040
Iron, Dissolved	ND		0.022	0.060
Magnesium, Dissolved	6.8		0.011	0.050
Potassium, Dissolved	0.67	J	0.24	1.0
Sodium, Dissolved	8.3		0.12	1.0

## 6020B Metals (ICP/MS)-Total Recoverable

Analysis Method: 6020B      Analysis Batch: 280-396711      Instrument ID: MT\_078  
Prep Method: 3005A      Prep Batch: 280-396509      Lab File ID: 203SMPL\_112717.D  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/28/2017 0041      Final Weight/Volume: 50 mL  
Prep Date: 11/27/2017 1610

Analyte	Result (mg/L)	Qualifier	MDL	RL
Antimony, Total	ND		0.00040	0.0010
Barium, Total	0.0039		0.00029	0.0010
Beryllium, Total	ND		0.000080	0.0010
Cadmium, Total	ND		0.00027	0.00020
Chromium, Total	0.0028	J	0.00050	0.0030
Copper, Total	ND		0.00056	0.0020
Lead, Total	ND		0.00018	0.0010
Manganese, Total	0.00058	J	0.00031	0.0010
Nickel, Total	0.0024	J	0.00030	0.0040
Selenium, Total	ND		0.00070	0.0010
Silver, Total	ND		0.000033	0.0020
Thallium, Total	ND		0.000050	0.0010
Vanadium, Total	0.0036		0.00050	0.0020
Zinc, Total	ND		0.0020	0.0050

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: DUP1**

Lab Sample ID: 280-103614-8FD

Date Sampled: 11/14/2017 1025

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 6020B Metals (ICP/MS)-Dissolved

Analysis Method: 6020B

Analysis Batch: 280-396328

Instrument ID: MT\_077

Prep Method: 3005A

Prep Batch: 280-395711

Lab File ID: 067SMPL.d

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 11/21/2017 1825

Final Weight/Volume: 50 mL

Prep Date: 11/21/2017 0752

Analyte	Result (mg/L)	Qualifier	MDL	RL
Manganese, Dissolved	0.00059	J	0.00031	0.0010

## Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-43**

Lab Sample ID: 280-103614-9

Date Sampled: 11/13/2017 1618

Client Matrix: Water

Date Received: 11/15/2017 0950

### 6010D Metals (ICP)-Total Recoverable

Analysis Method: 6010D	Analysis Batch: 280-396876	Instrument ID: MT_051
Prep Method: 3005A	Prep Batch: 280-396510	Lab File ID: 51A112817A.csv
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/28/2017 2034		Final Weight/Volume: 50 mL
Prep Date: 11/28/2017 0806		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Cobalt, Total	ND		0.0012	0.0030
Iron, Total	0.74		0.022	0.060

### 6010D Metals (ICP)-Dissolved

Analysis Method: 6010D	Analysis Batch: 280-396202	Instrument ID: MT_025
Prep Method: 3005A	Prep Batch: 280-395708	Lab File ID: 25A112117b.asc
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/21/2017 1802		Final Weight/Volume: 50 mL
Prep Date: 11/21/2017 0752		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Calcium, Dissolved	4.0		0.035	0.040
Iron, Dissolved	ND		0.022	0.060
Magnesium, Dissolved	1.6		0.011	0.050
Potassium, Dissolved	0.57	J	0.24	1.0
Sodium, Dissolved	2.2		0.12	1.0

### 6020B Metals (ICP/MS)-Total Recoverable

Analysis Method: 6020B	Analysis Batch: 280-396711	Instrument ID: MT_078
Prep Method: 3005A	Prep Batch: 280-396509	Lab File ID: 204SMPL_112717.D
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/28/2017 0045		Final Weight/Volume: 50 mL
Prep Date: 11/27/2017 1610		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Antimony, Total	ND		0.00040	0.0010
Barium, Total	0.0038		0.00029	0.0010
Beryllium, Total	ND		0.000080	0.0010
Cadmium, Total	ND		0.00027	0.00020
Chromium, Total	ND		0.00050	0.0030
Copper, Total	ND		0.00056	0.0020
Lead, Total	ND		0.00018	0.0010
Manganese, Total	0.027		0.00031	0.0010
Nickel, Total	0.00053	J	0.00030	0.0040
Selenium, Total	ND		0.00070	0.0010
Silver, Total	ND		0.000033	0.0020
Thallium, Total	ND		0.000050	0.0010
Vanadium, Total	0.0013	J	0.00050	0.0020
Zinc, Total	ND		0.0020	0.0050

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-43**

Lab Sample ID: 280-103614-9

Date Sampled: 11/13/2017 1618

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 6020B Metals (ICP/MS)-Dissolved

Analysis Method: 6020B

Analysis Batch: 280-396328

Instrument ID: MT\_077

Prep Method: 3005A

Prep Batch: 280-395711

Lab File ID: 070SMPL.d

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 11/21/2017 1836

Final Weight/Volume: 50 mL

Prep Date: 11/21/2017 0752

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Analyte	Result (mg/L)	Qualifier	MDL	RL
Manganese, Dissolved	0.016		0.00031	0.0010

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## Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-19C**

Lab Sample ID: 280-103614-10  
Client Matrix: Water

Date Sampled: 11/13/2017 1700  
Date Received: 11/15/2017 0950

### 6010D Metals (ICP)-Total Recoverable

Analysis Method: 6010D	Analysis Batch: 280-396876	Instrument ID: MT_051
Prep Method: 3005A	Prep Batch: 280-396510	Lab File ID: 51A112817A.csv
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/28/2017 2037		Final Weight/Volume: 50 mL
Prep Date: 11/28/2017 0806		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Cobalt, Total	ND		0.0012	0.0030
Iron, Total	0.22		0.022	0.060

### 6010D Metals (ICP)-Dissolved

Analysis Method: 6010D	Analysis Batch: 280-396202	Instrument ID: MT_025
Prep Method: 3005A	Prep Batch: 280-395708	Lab File ID: 25A112117b.asc
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/21/2017 1805		Final Weight/Volume: 50 mL
Prep Date: 11/21/2017 0752		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Calcium, Dissolved	15		0.035	0.040
Iron, Dissolved	0.14		0.022	0.060
Magnesium, Dissolved	7.4		0.011	0.050
Potassium, Dissolved	1.3		0.24	1.0
Sodium, Dissolved	5.5		0.12	1.0

### 6020B Metals (ICP/MS)-Total Recoverable

Analysis Method: 6020B	Analysis Batch: 280-396711	Instrument ID: MT_078
Prep Method: 3005A	Prep Batch: 280-396509	Lab File ID: 205SMPL_112717.D
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/28/2017 0048		Final Weight/Volume: 50 mL
Prep Date: 11/27/2017 1610		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Antimony, Total	ND		0.00040	0.0010
Barium, Total	0.0041		0.00029	0.0010
Beryllium, Total	ND		0.000080	0.0010
Cadmium, Total	ND		0.00027	0.00020
Chromium, Total	ND		0.00050	0.0030
Copper, Total	ND		0.00056	0.0020
Lead, Total	ND		0.00018	0.0010
Manganese, Total	1.2		0.00031	0.0010
Nickel, Total	0.00048	J	0.00030	0.0040
Selenium, Total	ND		0.00070	0.0010
Silver, Total	ND		0.000033	0.0020
Thallium, Total	ND		0.000050	0.0010
Vanadium, Total	ND		0.00050	0.0020
Zinc, Total	ND		0.0020	0.0050

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

**Client Sample ID: MW-19C**

Lab Sample ID: 280-103614-10

Date Sampled: 11/13/2017 1700

Client Matrix: Water

Date Received: 11/15/2017 0950

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## 6020B Metals (ICP/MS)-Dissolved

Analysis Method: 6020B

Analysis Batch: 280-396328

Instrument ID: MT\_077

Prep Method: 3005A

Prep Batch: 280-395711

Lab File ID: 071SMPL.d

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 11/21/2017 1840

Final Weight/Volume: 50 mL

Prep Date: 11/21/2017 0752

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Analyte	Result (mg/L)	Qualifier	MDL	RL
Manganese, Dissolved	1.2		0.00031	0.0010

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Client: Waste Management

Job Number: 280-103614-1

General Chemistry

Client Sample ID: MW-36A

Lab Sample ID: 280-103614-1

Date Sampled: 11/14/2017 0943

Client Matrix: Water

Date Received: 11/15/2017 0950

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Chloride	1.8		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397718		Analysis Date: 12/06/2017 1727				
Sulfate	2.7		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397718		Analysis Date: 12/06/2017 1727				
Ammonia (as N)	ND		mg/L	0.030	0.030	1.0	350.1
	Analysis Batch: 280-397108		Analysis Date: 11/29/2017 1207				
Nitrate as N	0.22		mg/L	0.050	0.050	1.0	353.2
	Analysis Batch: 280-397461		Analysis Date: 12/04/2017 1348				
Alkalinity, Total (As CaCO3)	58		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396189		Analysis Date: 11/21/2017 1807				
Alkalinity, Bicarbonate (As CaCO3)	58		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396189		Analysis Date: 11/21/2017 1807				
Total Dissolved Solids (TDS)	110		mg/L	5.0	5.0	1.0	SM 2540C
	Analysis Batch: 280-395482		Analysis Date: 11/16/2017 0733				
Total Suspended Solids	ND		mg/L	4.0	4.0	1.0	SM 2540D
	Analysis Batch: 280-395606		Analysis Date: 11/16/2017 1842				
Total Organic Carbon - Average	ND		mg/L	1.0	1.0	1.0	SM 5310B
	Analysis Batch: 280-397620		Analysis Date: 12/04/2017 2348				



Client: Waste Management

Job Number: 280-103614-1

General Chemistry

Client Sample ID: MW-33A

Lab Sample ID: 280-103614-2

Client Matrix: Water

Date Sampled: 11/14/2017 1150

Date Received: 11/15/2017 0950

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Chloride	2.1		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397718		Analysis Date: 12/06/2017 1834				
Sulfate	2.5		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397718		Analysis Date: 12/06/2017 1834				
Ammonia (as N)	ND		mg/L	0.030	0.030	1.0	350.1
	Analysis Batch: 280-397284		Analysis Date: 11/30/2017 1928				
Nitrate as N	ND		mg/L	0.050	0.050	1.0	353.2
	Analysis Batch: 280-397461		Analysis Date: 12/04/2017 1348				
Alkalinity, Total (As CaCO3)	52		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396189		Analysis Date: 11/21/2017 1803				
Alkalinity, Bicarbonate (As CaCO3)	52		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396189		Analysis Date: 11/21/2017 1803				
Total Dissolved Solids (TDS)	85		mg/L	5.0	5.0	1.0	SM 2540C
	Analysis Batch: 280-395482		Analysis Date: 11/16/2017 0733				
Total Suspended Solids	4.4		mg/L	4.0	4.0	1.0	SM 2540D
	Analysis Batch: 280-395606		Analysis Date: 11/16/2017 1842				
Total Organic Carbon - Average	3.0		mg/L	1.0	1.0	1.0	SM 5310B
	Analysis Batch: 280-397620		Analysis Date: 12/05/2017 0042				

Client: Waste Management

Job Number: 280-103614-1

General Chemistry

Client Sample ID: MW-33C

Lab Sample ID: 280-103614-3

Date Sampled: 11/14/2017 1248

Client Matrix: Water

Date Received: 11/15/2017 0950

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Chloride	3.0		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397718		Analysis Date: 12/06/2017 1851				
Sulfate	8.4		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397718		Analysis Date: 12/06/2017 1851				
Ammonia (as N)	ND		mg/L	0.030	0.030	1.0	350.1
	Analysis Batch: 280-397108		Analysis Date: 11/29/2017 1211				
Nitrate as N	ND		mg/L	0.050	0.050	1.0	353.2
	Analysis Batch: 280-397461		Analysis Date: 12/04/2017 1348				
Alkalinity, Total (As CaCO3)	68		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396189		Analysis Date: 11/21/2017 1758				
Alkalinity, Bicarbonate (As CaCO3)	68		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396189		Analysis Date: 11/21/2017 1758				
Total Dissolved Solids (TDS)	110		mg/L	5.0	5.0	1.0	SM 2540C
	Analysis Batch: 280-395482		Analysis Date: 11/16/2017 0733				
Total Suspended Solids	ND		mg/L	4.0	4.0	1.0	SM 2540D
	Analysis Batch: 280-395606		Analysis Date: 11/16/2017 1842				
Total Organic Carbon - Average	ND		mg/L	1.0	1.0	1.0	SM 5310B
	Analysis Batch: 280-397620		Analysis Date: 12/05/2017 0059				

Client: Waste Management

Job Number: 280-103614-1

General Chemistry

Client Sample ID: MW-15R

Lab Sample ID: 280-103614-4

Client Matrix: Water

Date Sampled: 11/14/2017 1418

Date Received: 11/15/2017 0950

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Chloride	2.6		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397718		Analysis Date: 12/06/2017 1908				
Sulfate	4.8		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397718		Analysis Date: 12/06/2017 1908				
Ammonia (as N)	ND		mg/L	0.030	0.030	1.0	350.1
	Analysis Batch: 280-397108		Analysis Date: 11/29/2017 1213				
Nitrate as N	0.22		mg/L	0.050	0.050	1.0	353.2
	Analysis Batch: 280-397461		Analysis Date: 12/04/2017 1348				
Alkalinity, Total (As CaCO3)	68		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396189		Analysis Date: 11/21/2017 1753				
Alkalinity, Bicarbonate (As CaCO3)	68		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396189		Analysis Date: 11/21/2017 1753				
Total Dissolved Solids (TDS)	100		mg/L	5.0	5.0	1.0	SM 2540C
	Analysis Batch: 280-395482		Analysis Date: 11/16/2017 0733				
Total Suspended Solids	ND		mg/L	4.0	4.0	1.0	SM 2540D
	Analysis Batch: 280-395606		Analysis Date: 11/16/2017 1842				
Total Organic Carbon - Average	ND		mg/L	1.0	1.0	1.0	SM 5310B
	Analysis Batch: 280-397620		Analysis Date: 12/05/2017 0147				

Client: Waste Management

Job Number: 280-103614-1

General Chemistry

Client Sample ID: DUP2

Lab Sample ID: 280-103614-5FD

Date Sampled: 11/14/2017 1445

Client Matrix: Water

Date Received: 11/15/2017 0950

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Chloride	2.6		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397718		Analysis Date: 12/06/2017 1958				
Sulfate	4.8		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397718		Analysis Date: 12/06/2017 1958				
Ammonia (as N)	ND		mg/L	0.030	0.030	1.0	350.1
	Analysis Batch: 280-397108		Analysis Date: 11/29/2017 1215				
Nitrate as N	0.22		mg/L	0.050	0.050	1.0	353.2
	Analysis Batch: 280-397461		Analysis Date: 12/04/2017 1348				
Alkalinity, Total (As CaCO3)	68		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396189		Analysis Date: 11/21/2017 1748				
Alkalinity, Bicarbonate (As CaCO3)	68		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396189		Analysis Date: 11/21/2017 1748				
Total Dissolved Solids (TDS)	100		mg/L	5.0	5.0	1.0	SM 2540C
	Analysis Batch: 280-395482		Analysis Date: 11/16/2017 0733				
Total Suspended Solids	ND		mg/L	4.0	4.0	1.0	SM 2540D
	Analysis Batch: 280-395606		Analysis Date: 11/16/2017 1842				
Total Organic Carbon - Average	ND		mg/L	1.0	1.0	1.0	SM 5310B
	Analysis Batch: 280-397620		Analysis Date: 12/05/2017 0204				

Client: Waste Management

Job Number: 280-103614-1

General Chemistry

Client Sample ID: MW-34C

Lab Sample ID: 280-103614-6

Date Sampled: 11/14/2017 0925

Client Matrix: Water

Date Received: 11/15/2017 0950

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Chloride	5.4		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397718		Analysis Date: 12/06/2017 2015				
Sulfate	4.9		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397718		Analysis Date: 12/06/2017 2015				
Ammonia (as N)	ND		mg/L	0.030	0.030	1.0	350.1
	Analysis Batch: 280-397108		Analysis Date: 11/29/2017 1217				
Nitrate as N	ND		mg/L	0.050	0.050	1.0	353.2
	Analysis Batch: 280-397461		Analysis Date: 12/04/2017 1348				
Alkalinity, Total (As CaCO3)	100		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396189		Analysis Date: 11/21/2017 1743				
Alkalinity, Bicarbonate (As CaCO3)	100		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396189		Analysis Date: 11/21/2017 1743				
Total Dissolved Solids (TDS)	180		mg/L	5.0	5.0	1.0	SM 2540C
	Analysis Batch: 280-395482		Analysis Date: 11/16/2017 0733				
Total Suspended Solids	48		mg/L	4.0	4.0	1.0	SM 2540D
	Analysis Batch: 280-395606		Analysis Date: 11/16/2017 1842				
Total Organic Carbon - Average	1.4		mg/L	1.0	1.0	1.0	SM 5310B
	Analysis Batch: 280-397620		Analysis Date: 12/05/2017 0220				

Client: Waste Management

Job Number: 280-103614-1

General Chemistry

Client Sample ID: MW-34A

Lab Sample ID: 280-103614-7

Date Sampled: 11/14/2017 1015

Client Matrix: Water

Date Received: 11/15/2017 0950

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Chloride	2.7		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397718		Analysis Date: 12/06/2017 2032				
Sulfate	2.2		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397718		Analysis Date: 12/06/2017 2032				
Ammonia (as N)	ND		mg/L	0.030	0.030	1.0	350.1
	Analysis Batch: 280-397108		Analysis Date: 11/29/2017 1219				
Nitrate as N	0.19		mg/L	0.050	0.050	1.0	353.2
	Analysis Batch: 280-397461		Analysis Date: 12/04/2017 1348				
Alkalinity, Total (As CaCO3)	76		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396189		Analysis Date: 11/21/2017 1738				
Alkalinity, Bicarbonate (As CaCO3)	76		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396189		Analysis Date: 11/21/2017 1738				
Total Dissolved Solids (TDS)	130		mg/L	5.0	5.0	1.0	SM 2540C
	Analysis Batch: 280-395482		Analysis Date: 11/16/2017 0733				
Total Suspended Solids	ND		mg/L	4.0	4.0	1.0	SM 2540D
	Analysis Batch: 280-395606		Analysis Date: 11/16/2017 1842				
Total Organic Carbon - Average	1.2		mg/L	1.0	1.0	1.0	SM 5310B
	Analysis Batch: 280-397620		Analysis Date: 12/05/2017 0237				

Client: Waste Management

Job Number: 280-103614-1

General Chemistry

Client Sample ID: DUP1

Lab Sample ID: 280-103614-8FD

Date Sampled: 11/14/2017 1025

Client Matrix: Water

Date Received: 11/15/2017 0950

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Chloride	2.7		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397718		Analysis Date: 12/06/2017 2049				
Sulfate	2.2		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397718		Analysis Date: 12/06/2017 2049				
Ammonia (as N)	ND		mg/L	0.030	0.030	1.0	350.1
	Analysis Batch: 280-397108		Analysis Date: 11/29/2017 1254				
Nitrate as N	ND		mg/L	0.050	0.050	1.0	353.2
	Analysis Batch: 280-397461		Analysis Date: 12/04/2017 1348				
Alkalinity, Total (As CaCO3)	75		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396189		Analysis Date: 11/21/2017 1724				
Alkalinity, Bicarbonate (As CaCO3)	75		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396189		Analysis Date: 11/21/2017 1724				
Total Dissolved Solids (TDS)	130		mg/L	5.0	5.0	1.0	SM 2540C
	Analysis Batch: 280-395482		Analysis Date: 11/16/2017 0733				
Total Suspended Solids	ND		mg/L	4.0	4.0	1.0	SM 2540D
	Analysis Batch: 280-395606		Analysis Date: 11/16/2017 1842				
Total Organic Carbon - Average	1.2		mg/L	1.0	1.0	1.0	SM 5310B
	Analysis Batch: 280-397620		Analysis Date: 12/05/2017 0254				

Client: Waste Management

Job Number: 280-103614-1

General Chemistry

Client Sample ID: MW-43

Lab Sample ID: 280-103614-9

Date Sampled: 11/13/2017 1618

Client Matrix: Water

Date Received: 11/15/2017 0950

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Chloride	2.3		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397718		Analysis Date: 12/06/2017 2105				
Sulfate	1.1		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397718		Analysis Date: 12/06/2017 2105				
Ammonia (as N)	ND		mg/L	0.030	0.030	1.0	350.1
	Analysis Batch: 280-397108		Analysis Date: 11/29/2017 1256				
Nitrate as N	1.1		mg/L	0.050	0.050	1.0	353.2
	Analysis Batch: 280-397461		Analysis Date: 12/04/2017 1348				
Nitrate Nitrite as N	1.1		mg/L	0.10	0.10	1.0	353.2
	Analysis Batch: 280-396672		Analysis Date: 11/27/2017 2003				
Alkalinity, Total (As CaCO3)	14		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396190		Analysis Date: 11/21/2017 2026				
Alkalinity, Bicarbonate (As CaCO3)	14		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396190		Analysis Date: 11/21/2017 2026				
Total Dissolved Solids (TDS)	34		mg/L	5.0	5.0	1.0	SM 2540C
	Analysis Batch: 280-395482		Analysis Date: 11/16/2017 0733				
Total Suspended Solids	ND		mg/L	4.0	4.0	1.0	SM 2540D
	Analysis Batch: 280-395606		Analysis Date: 11/16/2017 1842				
Total Organic Carbon - Average	1.3		mg/L	1.0	1.0	1.0	SM 5310B
	Analysis Batch: 280-397620		Analysis Date: 12/05/2017 0310				



Client: Waste Management

Job Number: 280-103614-1

General Chemistry

Client Sample ID: MW-19C

Lab Sample ID: 280-103614-10

Date Sampled: 11/13/2017 1700

Client Matrix: Water

Date Received: 11/15/2017 0950

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Chloride	4.4		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397718		Analysis Date: 12/06/2017 2122				
Sulfate	4.1		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397718		Analysis Date: 12/06/2017 2122				
Ammonia (as N)	0.46	F1 F2	mg/L	0.030	0.030	1.0	350.1
	Analysis Batch: 280-397108		Analysis Date: 11/29/2017 1258				
Nitrate as N	ND		mg/L	0.050	0.050	1.0	353.2
	Analysis Batch: 280-397461		Analysis Date: 12/04/2017 1619				
Nitrate Nitrite as N	ND		mg/L	0.10	0.10	1.0	353.2
	Analysis Batch: 280-396672		Analysis Date: 11/27/2017 2005				
Alkalinity, Total (As CaCO3)	74		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396190		Analysis Date: 11/21/2017 2021				
Alkalinity, Bicarbonate (As CaCO3)	74		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396190		Analysis Date: 11/21/2017 2021				
Total Dissolved Solids (TDS)	120		mg/L	5.0	5.0	1.0	SM 2540C
	Analysis Batch: 280-395482		Analysis Date: 11/16/2017 0733				
Total Suspended Solids	ND		mg/L	4.0	4.0	1.0	SM 2540D
	Analysis Batch: 280-395606		Analysis Date: 11/16/2017 1842				
Total Organic Carbon - Average	ND		mg/L	1.0	1.0	1.0	SM 5310B
	Analysis Batch: 280-397620		Analysis Date: 12/05/2017 0327				

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

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## Field Service / Mobile Lab

**Client Sample ID:** MW-36A

Lab Sample ID: 280-103614-1

Client Matrix: Water

Date Sampled: 11/14/2017 0943

Date Received: 11/15/2017 0950

Analyte	Result	Qual	Units	Dil	Method	Analysis Batch	Date Analyzed	Date Prepared
Depth to water	31.05		ft	1.0	Field Sampling	280-395824	11/14/2017	1043
Specific Conductivity	123		umhos/cm	1.0	Field Sampling	280-395824	11/14/2017	1043
Dissolved Oxygen	3.38		mg/L	1.0	Field Sampling	280-395824	11/14/2017	1043
eH	176.0		millivolts	1.0	Field Sampling	280-395824	11/14/2017	1043
Turbidity	3.22		NTU	1.0	Field Sampling	280-395824	11/14/2017	1043
Temperature	9.60		Degrees C	1.0	Field Sampling	280-395824	11/14/2017	1043
pH	5.91		SU	1.0	Field Sampling	280-395824	11/14/2017	1043

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

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## Field Service / Mobile Lab

**Client Sample ID:** MW-33A

Lab Sample ID: 280-103614-2

Client Matrix: Water

Date Sampled: 11/14/2017 1150

Date Received: 11/15/2017 0950

Analyte	Result	Qual	Units	Dil	Method	Analysis Batch	Date Analyzed	Date Prepared
Depth to water	4.02		ft	1.0	Field Sampling	280-395824	11/14/2017	1250
Specific Conductivity	109		umhos/cm	1.0	Field Sampling	280-395824	11/14/2017	1250
Dissolved Oxygen	0.39		mg/L	1.0	Field Sampling	280-395824	11/14/2017	1250
eH	52.0		millivolts	1.0	Field Sampling	280-395824	11/14/2017	1250
Turbidity	3.86		NTU	1.0	Field Sampling	280-395824	11/14/2017	1250
Temperature	9.60		Degrees C	1.0	Field Sampling	280-395824	11/14/2017	1250
pH	6.33		SU	1.0	Field Sampling	280-395824	11/14/2017	1250

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

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## Field Service / Mobile Lab

**Client Sample ID: MW-33C**

Lab Sample ID: 280-103614-3

Client Matrix: Water

Date Sampled: 11/14/2017 1248

Date Received: 11/15/2017 0950

Analyte	Result	Qual	Units	Dil	Method	Analysis Batch	Date Analyzed	Date Prepared
Depth to water	1.63		ft	1.0	Field Sampling	280-395824	11/14/2017	1348
Specific Conductivity	157		umhos/cm	1.0	Field Sampling	280-395824	11/14/2017	1348
Dissolved Oxygen	0.16		mg/L	1.0	Field Sampling	280-395824	11/14/2017	1348
eH	-230.0		millivolts	1.0	Field Sampling	280-395824	11/14/2017	1348
Turbidity	2.21		NTU	1.0	Field Sampling	280-395824	11/14/2017	1348
Temperature	9.11		Degrees C	1.0	Field Sampling	280-395824	11/14/2017	1348
pH	7.81		SU	1.0	Field Sampling	280-395824	11/14/2017	1348

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

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## Field Service / Mobile Lab

**Client Sample ID:** MW-15R

Lab Sample ID: 280-103614-4

Client Matrix: Water

Date Sampled: 11/14/2017 1418

Date Received: 11/15/2017 0950

Analyte	Result	Qual	Units	Dil	Method	Analysis Batch	Date Analyzed	Date Prepared
Depth to water	18.77		ft	1.0	Field Sampling	280-395824	11/14/2017	1518
Specific Conductivity	152		umhos/cm	1.0	Field Sampling	280-395824	11/14/2017	1518
Dissolved Oxygen	0.67		mg/L	1.0	Field Sampling	280-395824	11/14/2017	1518
eH	118.0		millivolts	1.0	Field Sampling	280-395824	11/14/2017	1518
Turbidity	1.14		NTU	1.0	Field Sampling	280-395824	11/14/2017	1518
Temperature	10.19		Degrees C	1.0	Field Sampling	280-395824	11/14/2017	1518
pH	6.51		SU	1.0	Field Sampling	280-395824	11/14/2017	1518

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

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## Field Service / Mobile Lab

**Client Sample ID: MW-34C**

Lab Sample ID: 280-103614-6

Date Sampled: 11/14/2017 0925

Client Matrix: Water

Date Received: 11/15/2017 0950

Analyte	Result	Qual	Units	Dil	Method	Analysis Batch	Date Analyzed	Date Prepared
Depth to water	41.34		ft	1.0	Field Sampling	280-395824	11/14/2017	1025
Specific Conductivity	232		umhos/cm	1.0	Field Sampling	280-395824	11/14/2017	1025
Dissolved Oxygen	0.26		mg/L	1.0	Field Sampling	280-395824	11/14/2017	1025
eH	-8.9		millivolts	1.0	Field Sampling	280-395824	11/14/2017	1025
Turbidity	158		NTU	1.0	Field Sampling	280-395824	11/14/2017	1025
Temperature	13.0		Degrees C	1.0	Field Sampling	280-395824	11/14/2017	1025
pH	6.61		SU	1.0	Field Sampling	280-395824	11/14/2017	1025

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

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## Field Service / Mobile Lab

**Client Sample ID: MW-34A**

Lab Sample ID: 280-103614-7

Date Sampled: 11/14/2017 1015

Client Matrix: Water

Date Received: 11/15/2017 0950

Analyte	Result	Qual	Units	Dil	Method	Analysis Batch	Date Analyzed	Date Prepared
Depth to water	39.49		ft	1.0	Field Sampling	280-395824	11/14/2017	1115
Specific Conductivity	162		umhos/cm	1.0	Field Sampling	280-395824	11/14/2017	1115
Dissolved Oxygen	0.69		mg/L	1.0	Field Sampling	280-395824	11/14/2017	1115
eH	110.2		millivolts	1.0	Field Sampling	280-395824	11/14/2017	1115
Turbidity	1.66		NTU	1.0	Field Sampling	280-395824	11/14/2017	1115
Temperature	12.25		Degrees C	1.0	Field Sampling	280-395824	11/14/2017	1115
pH	5.89		SU	1.0	Field Sampling	280-395824	11/14/2017	1115

# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

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## Field Service / Mobile Lab

**Client Sample ID: MW-43**

Lab Sample ID: 280-103614-9

Date Sampled: 11/13/2017 1618

Client Matrix: Water

Date Received: 11/15/2017 0950

Analyte	Result	Qual	Units	Dil	Method	Analysis Batch	Date Analyzed	Date Prepared
Depth to water	21.18		ft	1.0	Field Sampling	280-395824	11/13/2017	1718
Specific Conductivity	50		umhos/cm	1.0	Field Sampling	280-395824	11/13/2017	1718
Dissolved Oxygen	0.80		mg/L	1.0	Field Sampling	280-395824	11/13/2017	1718
eH	118.7		millivolts	1.0	Field Sampling	280-395824	11/13/2017	1718
Turbidity	2.23		NTU	1.0	Field Sampling	280-395824	11/13/2017	1718
Temperature	11.27		Degrees C	1.0	Field Sampling	280-395824	11/13/2017	1718
pH	5.62		SU	1.0	Field Sampling	280-395824	11/13/2017	1718



# Analytical Data

Client: Waste Management

Job Number: 280-103614-1

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## Field Service / Mobile Lab

**Client Sample ID: MW-19C**

Lab Sample ID: 280-103614-10

Date Sampled: 11/13/2017 1700

Client Matrix: Water

Date Received: 11/15/2017 0950

Analyte	Result	Qual	Units	Dil	Method	Analysis Batch	Date Analyzed	Date Prepared
Depth to water	33.67		ft	1.0	Field Sampling	280-395824	11/13/2017	1800
Specific Conductivity	173		umhos/cm	1.0	Field Sampling	280-395824	11/13/2017	1800
Dissolved Oxygen	0.22		mg/L	1.0	Field Sampling	280-395824	11/13/2017	1800
eH	-19.0		millivolts	1.0	Field Sampling	280-395824	11/13/2017	1800
Turbidity	1.21		NTU	1.0	Field Sampling	280-395824	11/13/2017	1800
Temperature	10.08		Degrees C	1.0	Field Sampling	280-395824	11/13/2017	1800
pH	6.82		SU	1.0	Field Sampling	280-395824	11/13/2017	1800

## DATA REPORTING QUALIFIERS

Client: Waste Management

Job Number: 280-103614-1

Lab Section	Qualifier	Description
GC/MS VOA	*	LCS or LCSD is outside acceptance limits.
	F1	MS and/or MSD Recovery is outside acceptance limits.
	F2	MS/MSD RPD exceeds control limits
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
	X	Surrogate is outside control limits
Metals	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
General Chemistry	F1	MS and/or MSD Recovery is outside acceptance limits.
	F2	MS/MSD RPD exceeds control limits

# QUALITY CONTROL RESULTS

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>GC/MS VOA</b>					
<b>Analysis Batch:480-388235</b>					
LCS 480-388235/4	Lab Control Sample	T	Water	8260C	
MB 480-388235/6	Method Blank	T	Water	8260C	
280-103614-1	MW-36A	T	Water	8260C	
280-103614-2	MW-33A	T	Water	8260C	
280-103614-3	MW-33C	T	Water	8260C	
280-103614-4	MW-15R	T	Water	8260C	
280-103614-5FD	DUP2	T	Water	8260C	
280-103614-6	MW-34C	T	Water	8260C	
280-103614-7	MW-34A	T	Water	8260C	
280-103614-8FD	DUP1	T	Water	8260C	
280-103614-11TB	TRIP BLANK	T	Water	8260C	
480-127530-M-1 MS	Matrix Spike	T	Water	8260C	
480-127530-M-1 MSD	Matrix Spike Duplicate	T	Water	8260C	
<b>Analysis Batch:480-388239</b>					
LCS 480-388239/4	Lab Control Sample	T	Water	8260C	
MB 480-388239/6	Method Blank	T	Water	8260C	
280-103614-9	MW-43	T	Water	8260C	
280-103614-10	MW-19C	T	Water	8260C	
480-127483-T-3 MS	Matrix Spike	T	Water	8260C	
480-127483-T-3 MSD	Matrix Spike Duplicate	T	Water	8260C	
<b>Analysis Batch:280-396651</b>					
LCS 280-396651/6	Lab Control Sample	T	Water	8260B SIM	
MB 280-396651/8	Method Blank	T	Water	8260B SIM	
280-103543-J-1 MS	Matrix Spike	T	Water	8260B SIM	
280-103543-J-1 MSD	Matrix Spike Duplicate	T	Water	8260B SIM	
280-103614-1	MW-36A	T	Water	8260B SIM	
280-103614-2	MW-33A	T	Water	8260B SIM	
280-103614-3	MW-33C	T	Water	8260B SIM	
280-103614-4	MW-15R	T	Water	8260B SIM	
280-103614-5FD	DUP2	T	Water	8260B SIM	
280-103614-6	MW-34C	T	Water	8260B SIM	
280-103614-8FD	DUP1	T	Water	8260B SIM	
280-103614-9	MW-43	T	Water	8260B SIM	
280-103614-10	MW-19C	T	Water	8260B SIM	
<b>Analysis Batch:280-396684</b>					
LCS 280-396684/4	Lab Control Sample	T	Water	8260B SIM	
LCS 280-396684/6	Lab Control Sample	T	Water	8260B SIM	
280-103614-7	MW-34A	T	Water	8260B SIM	
280-103614-11TB	TRIP BLANK	T	Water	8260B SIM	
280-103795-A-7 MS	Matrix Spike	T	Water	8260B SIM	
280-103795-A-7 MSD	Matrix Spike Duplicate	T	Water	8260B SIM	

TestAmerica Denver

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
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**Report Basis**

T = Total

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Prep Batch: 280-395708</b>					
LCS 280-395708/2-A	Lab Control Sample	R	Water	3005A	
MB 280-395708/1-A	Method Blank	R	Water	3005A	
280-103420-A-6-B MS	Matrix Spike	D	Water	3005A	
280-103420-A-6-C MSD	Matrix Spike Duplicate	D	Water	3005A	
280-103614-1	MW-36A	D	Water	3005A	
280-103614-2	MW-33A	D	Water	3005A	
280-103614-3	MW-33C	D	Water	3005A	
280-103614-4	MW-15R	D	Water	3005A	
280-103614-5FD	DUP2	D	Water	3005A	
280-103614-6	MW-34C	D	Water	3005A	
280-103614-7	MW-34A	D	Water	3005A	
280-103614-8FD	DUP1	D	Water	3005A	
280-103614-9	MW-43	D	Water	3005A	
280-103614-10	MW-19C	D	Water	3005A	
<b>Prep Batch: 280-395711</b>					
LCS 280-395711/2-A	Lab Control Sample	R	Water	3005A	
MB 280-395711/1-A	Method Blank	R	Water	3005A	
280-103420-A-6-E MS	Matrix Spike	D	Water	3005A	
280-103420-A-6-F MSD	Matrix Spike Duplicate	D	Water	3005A	
280-103614-1	MW-36A	D	Water	3005A	
280-103614-2	MW-33A	D	Water	3005A	
280-103614-3	MW-33C	D	Water	3005A	
280-103614-4	MW-15R	D	Water	3005A	
280-103614-5FD	DUP2	D	Water	3005A	
280-103614-6	MW-34C	D	Water	3005A	
280-103614-7	MW-34A	D	Water	3005A	
280-103614-8FD	DUP1	D	Water	3005A	
280-103614-9	MW-43	D	Water	3005A	
280-103614-10	MW-19C	D	Water	3005A	

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Analysis Batch:280-396202</b>					
LCS 280-395708/2-A	Lab Control Sample	R	Water	6010D	280-395708
MB 280-395708/1-A	Method Blank	R	Water	6010D	280-395708
280-103420-A-6-B MS	Matrix Spike	D	Water	6010D	280-395708
280-103420-A-6-C MSD	Matrix Spike Duplicate	D	Water	6010D	280-395708
280-103614-1	MW-36A	D	Water	6010D	280-395708
280-103614-2	MW-33A	D	Water	6010D	280-395708
280-103614-3	MW-33C	D	Water	6010D	280-395708
280-103614-4	MW-15R	D	Water	6010D	280-395708
280-103614-5FD	DUP2	D	Water	6010D	280-395708
280-103614-6	MW-34C	D	Water	6010D	280-395708
280-103614-7	MW-34A	D	Water	6010D	280-395708
280-103614-8FD	DUP1	D	Water	6010D	280-395708
280-103614-9	MW-43	D	Water	6010D	280-395708
280-103614-10	MW-19C	D	Water	6010D	280-395708
<b>Analysis Batch:280-396328</b>					
LCS 280-395711/2-A	Lab Control Sample	R	Water	6020B	280-395711
MB 280-395711/1-A	Method Blank	R	Water	6020B	280-395711
280-103420-A-6-E MS	Matrix Spike	D	Water	6020B	280-395711
280-103420-A-6-F MSD	Matrix Spike Duplicate	D	Water	6020B	280-395711
280-103614-1	MW-36A	D	Water	6020B	280-395711
280-103614-2	MW-33A	D	Water	6020B	280-395711
280-103614-3	MW-33C	D	Water	6020B	280-395711
280-103614-4	MW-15R	D	Water	6020B	280-395711
280-103614-5FD	DUP2	D	Water	6020B	280-395711
280-103614-6	MW-34C	D	Water	6020B	280-395711
280-103614-7	MW-34A	D	Water	6020B	280-395711
280-103614-8FD	DUP1	D	Water	6020B	280-395711
280-103614-9	MW-43	D	Water	6020B	280-395711
280-103614-10	MW-19C	D	Water	6020B	280-395711

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Prep Batch: 280-396509</b>					
LCS 280-396509/2-A	Lab Control Sample	R	Water	3005A	
MB 280-396509/1-A	Method Blank	R	Water	3005A	
280-103614-1	MW-36A	R	Water	3005A	
280-103614-1MS	Matrix Spike	R	Water	3005A	
280-103614-1MSD	Matrix Spike Duplicate	R	Water	3005A	
280-103614-2	MW-33A	R	Water	3005A	
280-103614-3	MW-33C	R	Water	3005A	
280-103614-4	MW-15R	R	Water	3005A	
280-103614-5FD	DUP2	R	Water	3005A	
280-103614-6	MW-34C	R	Water	3005A	
280-103614-7	MW-34A	R	Water	3005A	
280-103614-8FD	DUP1	R	Water	3005A	
280-103614-9	MW-43	R	Water	3005A	
280-103614-10	MW-19C	R	Water	3005A	
<b>Prep Batch: 280-396510</b>					
LCS 280-396510/2-A	Lab Control Sample	R	Water	3005A	
MB 280-396510/1-A	Method Blank	R	Water	3005A	
280-103614-1	MW-36A	R	Water	3005A	
280-103614-2	MW-33A	R	Water	3005A	
280-103614-2MS	Matrix Spike	R	Water	3005A	
280-103614-2MSD	Matrix Spike Duplicate	R	Water	3005A	
280-103614-3	MW-33C	R	Water	3005A	
280-103614-4	MW-15R	R	Water	3005A	
280-103614-5FD	DUP2	R	Water	3005A	
280-103614-6	MW-34C	R	Water	3005A	
280-103614-7	MW-34A	R	Water	3005A	
280-103614-8FD	DUP1	R	Water	3005A	
280-103614-9	MW-43	R	Water	3005A	
280-103614-10	MW-19C	R	Water	3005A	



## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Analysis Batch:280-396711</b>					
LCS 280-396509/2-A	Lab Control Sample	R	Water	6020B	280-396509
MB 280-396509/1-A	Method Blank	R	Water	6020B	280-396509
280-103614-1	MW-36A	R	Water	6020B	280-396509
280-103614-1MS	Matrix Spike	R	Water	6020B	280-396509
280-103614-1MSD	Matrix Spike Duplicate	R	Water	6020B	280-396509
280-103614-2	MW-33A	R	Water	6020B	280-396509
280-103614-3	MW-33C	R	Water	6020B	280-396509
280-103614-4	MW-15R	R	Water	6020B	280-396509
280-103614-5FD	DUP2	R	Water	6020B	280-396509
280-103614-6	MW-34C	R	Water	6020B	280-396509
280-103614-7	MW-34A	R	Water	6020B	280-396509
280-103614-8FD	DUP1	R	Water	6020B	280-396509
280-103614-9	MW-43	R	Water	6020B	280-396509
280-103614-10	MW-19C	R	Water	6020B	280-396509
<b>Analysis Batch:280-396876</b>					
LCS 280-396510/2-A	Lab Control Sample	R	Water	6010D	280-396510
MB 280-396510/1-A	Method Blank	R	Water	6010D	280-396510
280-103614-1	MW-36A	R	Water	6010D	280-396510
280-103614-2	MW-33A	R	Water	6010D	280-396510
280-103614-2MS	Matrix Spike	R	Water	6010D	280-396510
280-103614-2MSD	Matrix Spike Duplicate	R	Water	6010D	280-396510
280-103614-3	MW-33C	R	Water	6010D	280-396510
280-103614-4	MW-15R	R	Water	6010D	280-396510
280-103614-5FD	DUP2	R	Water	6010D	280-396510
280-103614-6	MW-34C	R	Water	6010D	280-396510
280-103614-7	MW-34A	R	Water	6010D	280-396510
280-103614-8FD	DUP1	R	Water	6010D	280-396510
280-103614-9	MW-43	R	Water	6010D	280-396510
280-103614-10	MW-19C	R	Water	6010D	280-396510

**Report Basis**

D = Dissolved

R = Total Recoverable

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Field Service / Mobile Lab</b>					
<b>Analysis Batch:280-395824</b>					
280-103614-1	MW-36A	T	Water	Field Sampling	
280-103614-2	MW-33A	T	Water	Field Sampling	
280-103614-3	MW-33C	T	Water	Field Sampling	
280-103614-4	MW-15R	T	Water	Field Sampling	
280-103614-6	MW-34C	T	Water	Field Sampling	
280-103614-7	MW-34A	T	Water	Field Sampling	
280-103614-9	MW-43	T	Water	Field Sampling	
280-103614-10	MW-19C	T	Water	Field Sampling	

#### Report Basis

T = Total

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-395482</b>					
LCS 280-395482/2	Lab Control Sample	T	Water	SM 2540C	
MB 280-395482/1	Method Blank	T	Water	SM 2540C	
280-103614-1	MW-36A	T	Water	SM 2540C	
280-103614-2	MW-33A	T	Water	SM 2540C	
280-103614-3	MW-33C	T	Water	SM 2540C	
280-103614-4	MW-15R	T	Water	SM 2540C	
280-103614-5FD	DUP2	T	Water	SM 2540C	
280-103614-6	MW-34C	T	Water	SM 2540C	
280-103614-7	MW-34A	T	Water	SM 2540C	
280-103614-8FD	DUP1	T	Water	SM 2540C	
280-103614-9	MW-43	T	Water	SM 2540C	
280-103614-10	MW-19C	T	Water	SM 2540C	
280-103614-10DU	Duplicate	T	Water	SM 2540C	
<b>Analysis Batch:280-395606</b>					
LCS 280-395606/1	Lab Control Sample	T	Water	SM 2540D	
MB 280-395606/2	Method Blank	T	Water	SM 2540D	
280-103614-1	MW-36A	T	Water	SM 2540D	
280-103614-2	MW-33A	T	Water	SM 2540D	
280-103614-3	MW-33C	T	Water	SM 2540D	
280-103614-4	MW-15R	T	Water	SM 2540D	
280-103614-5FD	DUP2	T	Water	SM 2540D	
280-103614-6	MW-34C	T	Water	SM 2540D	
280-103614-7	MW-34A	T	Water	SM 2540D	
280-103614-8FD	DUP1	T	Water	SM 2540D	
280-103614-9	MW-43	T	Water	SM 2540D	
280-103614-10	MW-19C	T	Water	SM 2540D	
280-103614-10DU	Duplicate	T	Water	SM 2540D	
<b>Analysis Batch:280-396189</b>					
LCS 280-396189/4	Lab Control Sample	T	Water	SM 2320B	
MB 280-396189/5	Method Blank	T	Water	SM 2320B	
280-103614-1	MW-36A	T	Water	SM 2320B	
280-103614-2	MW-33A	T	Water	SM 2320B	
280-103614-3	MW-33C	T	Water	SM 2320B	
280-103614-4	MW-15R	T	Water	SM 2320B	
280-103614-5FD	DUP2	T	Water	SM 2320B	
280-103614-6	MW-34C	T	Water	SM 2320B	
280-103614-7	MW-34A	T	Water	SM 2320B	
280-103614-8FD	DUP1	T	Water	SM 2320B	
280-103615-A-3 DU	Duplicate	T	Water	SM 2320B	

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-396190</b>					
LCS 280-396190/30	Lab Control Sample	T	Water	SM 2320B	
MB 280-396190/31	Method Blank	T	Water	SM 2320B	
280-103555-C-2 DU	Duplicate	T	Water	SM 2320B	
280-103614-9	MW-43	T	Water	SM 2320B	
280-103614-10	MW-19C	T	Water	SM 2320B	
<b>Analysis Batch:280-396376</b>					
LCS 280-396376/4	Lab Control Sample	T	Water	SM 2320B	
MB 280-396376/5	Method Blank	T	Water	SM 2320B	
280-103614-2	MW-33A	T	Water	SM 2320B	
280-103734-A-2 DU	Duplicate	T	Water	SM 2320B	
<b>Analysis Batch:280-396672</b>					
LCS 280-396672/65	Lab Control Sample	T	Water	353.2	
MB 280-396672/66	Method Blank	T	Water	353.2	
280-103614-D-1 MSMS	Matrix Spike	T	Water	353.2	
280-103614-D-1 MSDMSD	Matrix Spike Duplicate	T	Water	353.2	
280-103614-9	MW-43	T	Water	353.2	
280-103614-10	MW-19C	T	Water	353.2	
<b>Analysis Batch:280-396846</b>					
LCS 280-396846/109	Lab Control Sample	T	Water	353.2	
MB 280-396846/110	Method Blank	T	Water	353.2	
280-103614-9	MW-43	T	Water	353.2	
280-103614-10	MW-19C	T	Water	353.2	
280-103656-B-2 MS	Matrix Spike	T	Water	353.2	
280-103656-B-2 MSD	Matrix Spike Duplicate	T	Water	353.2	
<b>Analysis Batch:280-397108</b>					
LCS 280-397108/18	Lab Control Sample	T	Water	350.1	
LCSD 280-397108/19	Lab Control Sample Duplicate	T	Water	350.1	
MB 280-397108/20	Method Blank	T	Water	350.1	
280-103614-1	MW-36A	T	Water	350.1	
280-103614-3	MW-33C	T	Water	350.1	
280-103614-4	MW-15R	T	Water	350.1	
280-103614-5FD	DUP2	T	Water	350.1	
280-103614-6	MW-34C	T	Water	350.1	
280-103614-7	MW-34A	T	Water	350.1	
280-103614-8FD	DUP1	T	Water	350.1	
280-103614-9	MW-43	T	Water	350.1	
280-103614-10	MW-19C	T	Water	350.1	
280-103614-10MS	Matrix Spike	T	Water	350.1	
280-103614-10MSD	Matrix Spike Duplicate	T	Water	350.1	

TestAmerica Denver

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-397284</b>					
LCS 280-397284/18	Lab Control Sample	T	Water	350.1	
LCSD 280-397284/19	Lab Control Sample Duplicate	T	Water	350.1	
MB 280-397284/20	Method Blank	T	Water	350.1	
280-103614-2	MW-33A	T	Water	350.1	
280-103614-10	MW-19C	T	Water	350.1	
280-103653-B-1 MS	Matrix Spike	T	Water	350.1	
280-103653-B-1 MSD	Matrix Spike Duplicate	T	Water	350.1	
<b>Analysis Batch:280-397461</b>					
MB 280-397461/1	Method Blank	T	Water	353.2	
280-103614-1	MW-36A	T	Water	353.2	
280-103614-2	MW-33A	T	Water	353.2	
280-103614-3	MW-33C	T	Water	353.2	
280-103614-4	MW-15R	T	Water	353.2	
280-103614-5FD	DUP2	T	Water	353.2	
280-103614-6	MW-34C	T	Water	353.2	
280-103614-7	MW-34A	T	Water	353.2	
280-103614-8FD	DUP1	T	Water	353.2	
280-103614-9	MW-43	T	Water	353.2	
280-103614-10	MW-19C	T	Water	353.2	
<b>Analysis Batch:280-397620</b>					
LCS 280-397620/12	Lab Control Sample	T	Water	SM 5310B	
MB 280-397620/13	Method Blank	T	Water	SM 5310B	
280-103614-1	MW-36A	T	Water	SM 5310B	
280-103614-1MS	Matrix Spike	T	Water	SM 5310B	
280-103614-1MSD	Matrix Spike Duplicate	T	Water	SM 5310B	
280-103614-2	MW-33A	T	Water	SM 5310B	
280-103614-3	MW-33C	T	Water	SM 5310B	
280-103614-4	MW-15R	T	Water	SM 5310B	
280-103614-5FD	DUP2	T	Water	SM 5310B	
280-103614-6	MW-34C	T	Water	SM 5310B	
280-103614-7	MW-34A	T	Water	SM 5310B	
280-103614-8FD	DUP1	T	Water	SM 5310B	
280-103614-9	MW-43	T	Water	SM 5310B	
280-103614-10	MW-19C	T	Water	SM 5310B	

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-397621</b>					
LCS 280-397621/12	Lab Control Sample	T	Water	SM 5310B	
MB 280-397621/13	Method Blank	T	Water	SM 5310B	
280-103614-1	MW-36A	T	Water	SM 5310B	
280-103614-1MS	Matrix Spike	T	Water	SM 5310B	
280-103614-1MSD	Matrix Spike Duplicate	T	Water	SM 5310B	
280-103614-2	MW-33A	T	Water	SM 5310B	
280-103614-3	MW-33C	T	Water	SM 5310B	
280-103614-4	MW-15R	T	Water	SM 5310B	
280-103614-5FD	DUP2	T	Water	SM 5310B	
280-103614-6	MW-34C	T	Water	SM 5310B	
280-103614-7	MW-34A	T	Water	SM 5310B	
280-103614-8FD	DUP1	T	Water	SM 5310B	
280-103614-9	MW-43	T	Water	SM 5310B	
280-103614-10	MW-19C	T	Water	SM 5310B	
<b>Analysis Batch:280-397718</b>					
LCS 280-397718/4	Lab Control Sample	T	Water	300.0	
LCSD 280-397718/5	Lab Control Sample Duplicate	T	Water	300.0	
MB 280-397718/6	Method Blank	T	Water	300.0	
280-103614-1	MW-36A	T	Water	300.0	
280-103614-1DU	Duplicate	T	Water	300.0	
280-103614-1MS	Matrix Spike	T	Water	300.0	
280-103614-1MSD	Matrix Spike Duplicate	T	Water	300.0	
280-103614-2	MW-33A	T	Water	300.0	
280-103614-3	MW-33C	T	Water	300.0	
280-103614-4	MW-15R	T	Water	300.0	
280-103614-5FD	DUP2	T	Water	300.0	
280-103614-6	MW-34C	T	Water	300.0	
280-103614-7	MW-34A	T	Water	300.0	
280-103614-8FD	DUP1	T	Water	300.0	
280-103614-9	MW-43	T	Water	300.0	
280-103614-10	MW-19C	T	Water	300.0	

**Report Basis**

T = Total

Client: Waste Management

Job Number: 280-103614-1

**Surrogate Recovery Report**

**8260B SIM Volatile Organic Compounds (GC/MS)**

**Client Matrix: Water**

Lab Sample ID	Client Sample ID	DBFM %Rec
280-103614-1	MW-36A	78
280-103614-2	MW-33A	83
280-103614-3	MW-33C	77
280-103614-4	MW-15R	86
280-103614-5	DUP2	78
280-103614-6	MW-34C	87
280-103614-8	DUP1	81
280-103614-9	MW-43	84
280-103614-10	MW-19C	87
MB 280-396651/8		87
LCS 280-396651/6		82
280-103543-J-1 MS		75X
280-103543-J-1 MSD		81

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Surrogate	Acceptance Limits
DBFM = Dibromofluoromethane (Surr)	77-120

Client: Waste Management

Job Number: 280-103614-1

**Surrogate Recovery Report**

**8260B SIM Volatile Organic Compounds (GC/MS)**

**Client Matrix: Water**

Lab Sample ID	Client Sample ID	DCA %Rec
280-103614-7	MW-34A	86
280-103614-11	TRIP BLANK	83
LCS 280-396684/4		75
LCS 280-396684/6		72
280-103795-A-7 MS		70
280-103795-A-7 MSD		75

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	70-127



Client: Waste Management

Job Number: 280-103614-1

**Surrogate Recovery Report**

**8260C Volatile Organic Compounds by GC/MS**

**Client Matrix: Water**

Lab Sample ID	Client Sample ID	DCA %Rec	BFB %Rec	TOL %Rec
280-103614-1	MW-36A	109	118	100
280-103614-2	MW-33A	100	118	103
280-103614-3	MW-33C	102	120	100
280-103614-4	MW-15R	106	122X	99
280-103614-5	DUP2	104	119	102
280-103614-6	MW-34C	105	122X	102
280-103614-7	MW-34A	108	118	101
280-103614-8	DUP1	106	123X	103
280-103614-9	MW-43	103	98	104
280-103614-10	MW-19C	106	90	103
280-103614-11	TRIP BLANK	109	122X	99
MB 480-388235/6		102	119	100
MB 480-388239/6		102	88	104
LCS 480-388235/4		99	120	103
LCS 480-388239/4		102	89	103
480-127530-M-1 MS		109	135X	99
480-127483-T-3 MS		112	92	106
480-127530-M-1 MSD		112	125X	98
480-127483-T-3 MSD		99	94	103

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	77-120
BFB = 4-Bromofluorobenzene (Surr)	73-120
TOL = Toluene-d8 (Surr)	80-120

# Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Method Blank - Batch: 280-396651**

**Method: 8260B SIM**  
**Preparation: 5030B**

Lab Sample ID: MB 280-396651/8	Analysis Batch: 280-396651	Instrument ID: VMS_E
Client Matrix: Water	Prep Batch: N/A	Lab File ID: E5781.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 11/27/2017 1839	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 11/27/2017 1839		
Leach Date: N/A		

Analyte	Result	Qual	MDL	RL
Vinyl chloride	ND		0.018	0.020
Surrogate	% Rec		Acceptance Limits	
Dibromofluoromethane (Surr)	87		77 - 120	

**Lab Control Sample - Batch: 280-396651**

**Method: 8260B SIM**  
**Preparation: 5030B**

Lab Sample ID: LCS 280-396651/6	Analysis Batch: 280-396651	Instrument ID: VMS_E
Client Matrix: Water	Prep Batch: N/A	Lab File ID: E5780.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 11/27/2017 1821	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 11/27/2017 1821		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Vinyl chloride	2.00	2.31	116	40 - 144	
Surrogate		% Rec		Acceptance Limits	
Dibromofluoromethane (Surr)		82		77 - 120	

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396651**

**Method: 8260B SIM  
Preparation: 5030B**

MS Lab Sample ID: 280-103543-J-1 MS	Analysis Batch: 280-396651	Instrument ID: VMS_E
Client Matrix: Water	Prep Batch: N/A	Lab File ID: E5790.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 11/27/2017 2121		Final Weight/Volume: 20 mL
Prep Date: 11/27/2017 2121		20 mL
Leach Date: N/A		

MSD Lab Sample ID: 280-103543-J-1 MSD	Analysis Batch: 280-396651	Instrument ID: VMS_E
Client Matrix: Water	Prep Batch: N/A	Lab File ID: E5791.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 11/27/2017 2139		Final Weight/Volume: 20 mL
Prep Date: 11/27/2017 2139		20 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Vinyl chloride	96	102	40 - 144	6	24		
Surrogate		MS % Rec	MSD % Rec			Acceptance Limits	
Dibromofluoromethane (Surr)		75	X	81		77 - 120	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396651**

**Method: 8260B SIM  
Preparation: 5030B**

MS Lab Sample ID: 280-103543-J-1 MS	Units: ug/L
Client Matrix: Water	
Dilution: 1.0	
Analysis Date: 11/27/2017 2121	
Prep Date: 11/27/2017 2121	
Leach Date: N/A	

MSD Lab Sample ID: 280-103543-J-1 MSD
Client Matrix: Water
Dilution: 1.0
Analysis Date: 11/27/2017 2139
Prep Date: 11/27/2017 2139
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Vinyl chloride	ND	2.00	2.00	1.93	2.04

**Quality Control Results**

Client: Waste Management

Job Number: 280-103614-1

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	75	70 - 127

**Lab Control Sample - Batch: 280-396684**

**Method: 8260B SIM**

**Preparation: 5030B**

Lab Sample ID:	LCS 280-396684/6	Analysis Batch:	280-396684	Instrument ID:	VMS_E
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E5840.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	11/28/2017 1603	Units:	ug/L	Final Weight/Volume:	20 mL
Prep Date:	11/28/2017 1603				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Vinyl chloride	2.00	0.910	46	40 - 144	

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	72	70 - 127

**Matrix Spike/**

**Matrix Spike Duplicate Recovery Report - Batch: 280-396684**

**Method: 8260B SIM**

**Preparation: 5030B**

MS Lab Sample ID:	280-103795-A-7 MS	Analysis Batch:	280-396684	Instrument ID:	VMS_E
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E5824.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	11/28/2017 1115			Final Weight/Volume:	20 mL
Prep Date:	11/28/2017 1115				20 mL
Leach Date:	N/A				

MSD Lab Sample ID:	280-103795-A-7 MSD	Analysis Batch:	280-396684	Instrument ID:	VMS_E
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E5825.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	11/28/2017 1133			Final Weight/Volume:	20 mL
Prep Date:	11/28/2017 1133				20 mL
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Vinyl chloride	45	56	40 - 144	21	24		
Surrogate		MS % Rec	MSD % Rec			Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)		70	75			70 - 127	

# Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396684**

**Method: 8260B SIM  
Preparation: 5030B**

MS Lab Sample ID: 280-103795-A-7 MS      Units: ug/L  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/28/2017 1115  
Prep Date: 11/28/2017 1115  
Leach Date: N/A

MSD Lab Sample ID: 280-103795-A-7 MSD  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/28/2017 1133  
Prep Date: 11/28/2017 1133  
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Vinyl chloride	ND	2.00	2.00	0.902	1.12

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Method Blank - Batch: 480-388235**

**Method: 8260C  
Preparation: 5030C**

Lab Sample ID: MB 480-388235/6  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/19/2017 1343  
 Prep Date: 11/19/2017 1343  
 Leach Date: N/A

Analysis Batch: 480-388235  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: ug/L

Instrument ID: HP5973C  
 Lab File ID: C0838.D  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.35	1.0
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,1-Dichloropropene	ND		0.72	1.0
1,2,3-Trichlorobenzene	ND		0.41	1.0
1,2,3-Trichloropropane	ND		0.89	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2,4-Trimethylbenzene	ND		0.75	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane (EDB)	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloroethene, Total	ND		0.81	2.0
1,2-Dichloropropane	ND		0.72	1.0
1,3,5-Trichlorobenzene	ND		0.23	1.0
1,3,5-Trimethylbenzene	ND		0.77	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,3-Dichloropropane	ND		0.75	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
1,4-Dioxane	ND		9.3	40
2,2-Dichloropropane	ND		0.40	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chloroethyl vinyl ether	ND		0.96	5.0
2-Hexanone	ND		1.2	5.0
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Acetonitrile	ND		4.9	15
Acrolein	ND		0.91	20
Acrylonitrile	ND		0.83	5.0
Benzene	ND		0.41	1.0
Bromobenzene	ND		0.80	1.0
Bromochloromethane	ND		0.87	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Butyl alcohol, n-	ND		8.9	40
Butyl alcohol, tert-	ND		3.3	10
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Chlorodifluoromethane	ND		0.26	1.0

# Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Method Blank - Batch: 480-388235**

**Method: 8260C  
Preparation: 5030C**

Lab Sample ID: MB 480-388235/6  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/19/2017 1343  
 Prep Date: 11/19/2017 1343  
 Leach Date: N/A

Analysis Batch: 480-388235  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: ug/L

Instrument ID: HP5973C  
 Lab File ID: C0838.D  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dibromochloromethane	ND		0.32	1.0
Dibromomethane	ND		0.41	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Dichlorofluoromethane	ND		0.34	1.0
Ethyl acetate	ND		0.66	1.0
Ethyl ether	ND		0.72	1.0
Ethyl tert-butyl ether	ND		0.29	1.0
Ethylbenzene	ND		0.74	1.0
Hexachlorobutadiene	ND		0.28	1.0
Hexane	ND		0.40	10
Iodomethane	ND		0.30	1.0
Isobutanol	ND		4.8	25
Isopropyl ether	ND		0.59	1.0
Isopropylbenzene	ND		0.79	1.0
Methacrylonitrile	ND		0.69	5.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
m-Xylene & p-Xylene	ND		0.66	2.0
Naphthalene	ND		0.43	1.0
n-Butylbenzene	ND		0.64	1.0
N-Propylbenzene	ND		0.69	1.0
o-Chlorotoluene	ND		0.86	1.0
o-Xylene	ND		0.76	1.0
p-Chlorotoluene	ND		0.84	1.0
p-Cymene	ND		0.31	1.0
sec-Butylbenzene	ND		0.75	1.0
Styrene	ND		0.73	1.0
Tert-amyl methyl ether	ND		0.27	1.0
tert-Butylbenzene	ND		0.81	1.0
Tetrachloroethene	ND		0.36	1.0
Tetrahydrofuran	ND		1.3	5.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
trans-1,4-Dichloro-2-butene	ND		0.22	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Method Blank - Batch: 480-388235**

**Method: 8260C**  
**Preparation: 5030C**

Lab Sample ID: MB 480-388235/6	Analysis Batch: 480-388235	Instrument ID: HP5973C
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C0838.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1343	Units: ug/L	Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1343		
Leach Date: N/A		

Analyte	Result	Qual	MDL	RL
Vinyl acetate	ND		0.85	5.0
Vinyl chloride	ND		0.90	1.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102	77 - 120
4-Bromofluorobenzene (Surr)	119	73 - 120
Toluene-d8 (Surr)	100	80 - 120

**Method Blank TICs- Batch: 480-388235**

Cas Number	Analyte	RT	Est. Result (ug)	Qual
67-72-1	Hexachloroethane TIC	0.00	ND	



# Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Lab Control Sample - Batch: 480-388235**

**Method: 8260C  
Preparation: 5030C**

Lab Sample ID:	LCS 480-388235/4	Analysis Batch:	480-388235	Instrument ID:	HP5973C
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C0836.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	11/19/2017 1252	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	11/19/2017 1252				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1,1,2-Tetrachloroethane	25.0	31.1	124	80 - 120	*
1,1,1-Trichloroethane	25.0	31.3	125	73 - 126	
1,1,2,2-Tetrachloroethane	25.0	22.5	90	76 - 120	
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	25.5	102	61 - 148	
1,1,2-Trichloroethane	25.0	25.2	101	76 - 122	
1,1-Dichloroethane	25.0	27.5	110	77 - 120	
1,1-Dichloroethene	25.0	22.7	91	66 - 127	
1,1-Dichloropropene	25.0	28.1	112	72 - 122	
1,2,3-Trichlorobenzene	25.0	27.0	108	75 - 123	
1,2,3-Trichloropropane	25.0	23.0	92	68 - 122	
1,2,4-Trichlorobenzene	25.0	28.1	112	79 - 122	
1,2,4-Trimethylbenzene	25.0	27.7	111	76 - 121	
1,2-Dibromo-3-Chloropropane	25.0	23.3	93	56 - 134	
1,2-Dibromoethane (EDB)	25.0	27.4	110	77 - 120	
1,2-Dichlorobenzene	25.0	26.8	107	80 - 124	
1,2-Dichloroethane	25.0	28.1	112	75 - 120	
1,2-Dichloropropane	25.0	26.1	104	76 - 120	
1,3,5-Trimethylbenzene	25.0	27.1	109	77 - 121	
1,3-Dichlorobenzene	25.0	27.7	111	77 - 120	
1,3-Dichloropropane	25.0	24.5	98	75 - 120	
1,4-Dichlorobenzene	25.0	27.0	108	80 - 120	
1,4-Dioxane	500	472	94	50 - 150	
2,2-Dichloropropane	25.0	31.3	125	63 - 136	
2-Butanone (MEK)	125	113	91	57 - 140	
2-Chloroethyl vinyl ether	25.0	26.0	104	70 - 129	
2-Hexanone	125	112	90	65 - 127	
4-Methyl-2-pentanone (MIBK)	125	110	88	71 - 125	
Acetone	125	90.9	73	56 - 142	
Acrolein	125	70.6	56	52 - 143	
Acrylonitrile	250	209	84	63 - 125	
Benzene	25.0	27.2	109	71 - 124	
Bromobenzene	25.0	27.2	109	78 - 120	
Bromochloromethane	25.0	29.7	119	72 - 130	
Bromodichloromethane	25.0	30.6	122	80 - 122	
Bromoform	25.0	30.3	121	61 - 132	
Bromomethane	25.0	26.2	105	55 - 144	
Butyl alcohol, tert-	250	230	92	75 - 125	
Carbon disulfide	25.0	23.9	95	59 - 134	
Carbon tetrachloride	25.0	32.2	129	72 - 134	
Chlorobenzene	25.0	29.8	119	80 - 120	
Chloroethane	25.0	27.1	108	69 - 136	
Chloroform	25.0	28.5	114	73 - 127	
Chloromethane	25.0	18.7	75	68 - 124	
cis-1,2-Dichloroethene	25.0	26.8	107	74 - 124	
cis-1,3-Dichloropropene	25.0	28.1	112	74 - 124	
Cyclohexane	25.0	26.1	105	59 - 135	

# Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Lab Control Sample - Batch: 480-388235**

**Method: 8260C**  
**Preparation: 5030C**

Lab Sample ID: LCS 480-388235/4	Analysis Batch: 480-388235	Instrument ID: HP5973C
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C0836.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1252	Units: ug/L	Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1252		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Dibromochloromethane	25.0	30.1	120	75 - 125	
Dibromomethane	25.0	29.6	118	76 - 127	
Dichlorodifluoromethane	25.0	21.2	85	59 - 135	
Dichlorofluoromethane	25.0	21.4	86	76 - 127	
Ethyl ether	25.0	19.8	79	76 - 123	
Ethylbenzene	25.0	28.4	114	77 - 123	
Hexachlorobutadiene	25.0	29.8	119	68 - 131	
Hexane	25.0	25.3	101	54 - 146	
Iodomethane	25.0	28.3	113	78 - 123	
Isobutanol	625	558	89	51 - 150	
Isopropylbenzene	25.0	27.2	109	77 - 122	
Methyl acetate	50.0	32.8	66	74 - 133	*
Methyl tert-butyl ether	25.0	25.1	100	77 - 120	
Methylcyclohexane	25.0	27.1	108	68 - 134	
Methylene Chloride	25.0	23.0	92	75 - 124	
m-Xylene & p-Xylene	25.0	28.8	115	76 - 122	
Naphthalene	25.0	26.0	104	66 - 125	
n-Butylbenzene	25.0	26.0	104	71 - 128	
N-Propylbenzene	25.0	26.4	105	75 - 127	
o-Chlorotoluene	25.0	28.0	112	76 - 121	
o-Xylene	25.0	28.4	114	76 - 122	
p-Chlorotoluene	25.0	28.3	113	77 - 121	
p-Cymene	25.0	27.2	109	73 - 120	
sec-Butylbenzene	25.0	27.5	110	74 - 127	
Styrene	25.0	29.2	117	80 - 120	
tert-Butylbenzene	25.0	27.1	108	75 - 123	
Tetrachloroethene	25.0	30.0	120	74 - 122	
Tetrahydrofuran	50.0	41.5	83	62 - 132	
Toluene	25.0	27.3	109	80 - 122	
trans-1,2-Dichloroethene	25.0	24.0	96	73 - 127	
trans-1,3-Dichloropropene	25.0	26.7	107	80 - 120	
trans-1,4-Dichloro-2-butene	25.0	20.2	81	41 - 131	
Trichloroethene	25.0	30.0	120	74 - 123	
Trichlorofluoromethane	25.0	29.1	116	62 - 150	
Vinyl acetate	50.0	45.0	90	50 - 144	
Vinyl chloride	25.0	25.6	102	65 - 133	
Surrogate		% Rec		Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)		99		77 - 120	
4-Bromofluorobenzene (Surr)		120		73 - 120	
Toluene-d8 (Surr)		103		80 - 120	

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 480-388235**

**Method: 8260C  
Preparation: 5030C**

MS Lab Sample ID: 480-127530-M-1 MS	Analysis Batch: 480-388235	Instrument ID: HP5973C
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C0857.D
Dilution: 5.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 2201		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 2201		5 mL
Leach Date: N/A		

MSD Lab Sample ID: 480-127530-M-1 MSD	Analysis Batch: 480-388235	Instrument ID: HP5973C
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C0858.D
Dilution: 5.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 2227		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 2227		5 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
1,1,1,2-Tetrachloroethane	137	128	80 - 120	7	20	F1	F1
1,1,1-Trichloroethane	159	132	73 - 126	18	15	F1	F1 F2
1,1,2,2-Tetrachloroethane	85	98	76 - 120	13	15		
1,1,2-Trichloroethane	98	108	76 - 122	10	15		
1,1-Dichloroethane	115	117	77 - 120	2	20		
1,1-Dichloroethene	118	93	66 - 127	23	16		F2
1,2,3-Trichloropropane	91	100	68 - 122	9	14		
1,2-Dibromo-3-Chloropropane	93	102	56 - 134	9	15		
1,2-Dibromoethane (EDB)	111	115	77 - 120	3	15		
1,2-Dichlorobenzene	108	108	80 - 124	0	20		
1,2-Dichloroethane	128	124	75 - 120	3	20	F1	F1
1,2-Dichloropropane	100	110	76 - 120	10	20		
1,4-Dichlorobenzene	111	110	78 - 124	1	20		
2-Butanone (MEK)	69	94	57 - 140	30	20		F2
2-Hexanone	68	91	65 - 127	28	15		F2
4-Methyl-2-pentanone (MIBK)	73	96	71 - 125	27	35		
Acetone	61	59	56 - 142	3	15		
Acrylonitrile	86	100	63 - 125	16	20		
Benzene	113	113	71 - 124	0	13		
Bromochloromethane	128	127	72 - 130	1	15		
Bromodichloromethane	138	131	80 - 122	5	15	F1	F1
Bromoform	134	130	61 - 132	3	15	F1	
Bromomethane	119	132	55 - 144	11	15		
Carbon disulfide	112	92	59 - 134	20	15		F2
Carbon tetrachloride	167	138	72 - 134	19	15	F1	F1 F2
Chlorobenzene	124	119	80 - 120	4	25	F1	
Chloroethane	93	72	69 - 136	24	15		F2
Chloroform	131	122	73 - 127	7	20	F1	
Chloromethane	113	75	68 - 124	40	15		F2
cis-1,2-Dichloroethene	115	115	74 - 124	0	15		
cis-1,3-Dichloropropene	117	120	74 - 124	2	15		
Dibromochloromethane	131	126	75 - 125	3	15	F1	F1
Dibromomethane	127	135	76 - 127	6	15		F1

# Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 480-388235**

**Method: 8260C  
Preparation: 5030C**

MS Lab Sample ID: 480-127530-M-1 MS	Analysis Batch: 480-388235	Instrument ID: HP5973C
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C0857.D
Dilution: 5.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 2201		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 2201		5 mL
Leach Date: N/A		

MSD Lab Sample ID: 480-127530-M-1 MSD	Analysis Batch: 480-388235	Instrument ID: HP5973C
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C0858.D
Dilution: 5.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 2227		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 2227		5 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Ethylbenzene	119	109	77 - 123	8	15		
Iodomethane	146	118	78 - 123	21	20	F1	F2
Methylene Chloride	108	95	75 - 124	13	15		
m-Xylene & p-Xylene	120	111	76 - 122	6	16		
o-Xylene	120	113	76 - 122	7	16		
Styrene	122	117	80 - 120	4	20	F1	
Tetrachloroethene	136	117	74 - 122	15	20	F1	
Toluene	110	108	80 - 122	2	15		
trans-1,2-Dichloroethene	113	106	73 - 127	7	20		
trans-1,3-Dichloropropene	110	111	80 - 120	1	15		
trans-1,4-Dichloro-2-butene	67	85	41 - 131	24	20		F2
Trichloroethene	131	122	74 - 123	7	16	F1	
Trichlorofluoromethane	158	117	62 - 150	30	20	F1	F2
Vinyl acetate	87	112	50 - 144	25	23		F2
Vinyl chloride	136	95	65 - 133	36	15	F1	F2
Surrogate	MS % Rec		MSD % Rec	Acceptance Limits			
1,2-Dichloroethane-d4 (Surr)	109		112	77 - 120			
4-Bromofluorobenzene (Surr)	135		X 125	X	73 - 120		
Toluene-d8 (Surr)	99		98	80 - 120			

# Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 480-388235**

**Method: 8260C  
Preparation: 5030C**

MS Lab Sample ID: 480-127530-M-1 MS      Units: ug/L  
 Client Matrix: Water  
 Dilution: 5.0  
 Analysis Date: 11/19/2017 2201  
 Prep Date: 11/19/2017 2201  
 Leach Date: N/A

MSD Lab Sample ID: 480-127530-M-1 MSD  
 Client Matrix: Water  
 Dilution: 5.0  
 Analysis Date: 11/19/2017 2227  
 Prep Date: 11/19/2017 2227  
 Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
1,1,1,2-Tetrachloroethane	ND	125	125	172 F1	160 F1
1,1,1-Trichloroethane	ND	125	125	198 F1	166 F1 F2
1,1,2,2-Tetrachloroethane	ND	125	125	107	122
1,1,2-Trichloroethane	ND	125	125	122	135
1,1-Dichloroethane	ND	125	125	144	146
1,1-Dichloroethene	ND	125	125	148	117 F2
1,2,3-Trichloropropane	ND	125	125	114	125
1,2-Dibromo-3-Chloropropane	ND	125	125	117	128
1,2-Dibromoethane (EDB)	ND	125	125	139	144
1,2-Dichlorobenzene	ND	125	125	135	135
1,2-Dichloroethane	ND	125	125	160 F1	155 F1
1,2-Dichloropropane	ND	125	125	124	137
1,4-Dichlorobenzene	ND	125	125	139	137
2-Butanone (MEK)	ND	625	625	434	588 F2
2-Hexanone	ND	625	625	427	568 F2
4-Methyl-2-pentanone (MIBK)	ND	625	625	454	599
Acetone	ND	625	625	382	371
Acrylonitrile	ND	1250	1250	1070	1250
Benzene	3.8 J	125	125	145	145
Bromochloromethane	ND	125	125	160	159
Bromodichloromethane	ND	125	125	173 F1	164 F1
Bromoform	ND	125	125	167 F1	163
Bromomethane	ND	125	125	148	165
Carbon disulfide	ND	125	125	140	115 F2
Carbon tetrachloride	ND	125	125	208 F1	173 F1 F2
Chlorobenzene	ND	125	125	155 F1	149
Chloroethane	ND	125	125	116	90.5 F2
Chloroform	ND	125	125	163 F1	152
Chloromethane	ND	125	125	141	94.0 F2
cis-1,2-Dichloroethene	ND	125	125	144	144
cis-1,3-Dichloropropene	ND	125	125	146	150
Dibromochloromethane	ND	125	125	163 F1	158 F1
Dibromomethane	ND	125	125	158	168 F1
Ethylbenzene	7.5	125	125	156	144
Iodomethane	ND	125	125	182 F1	147 F2
Methylene Chloride	ND	125	125	135	118
m-Xylene & p-Xylene	24	125	125	174	163
o-Xylene	4.1 J	125	125	155	145
Styrene	ND	125	125	152 F1	147
Tetrachloroethene	ND	125	125	170 F1	146
Toluene	3.1 J	125	125	141	138
trans-1,2-Dichloroethene	ND	125	125	141	132
trans-1,3-Dichloropropene	ND	125	125	137	139

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 480-388235**

**Method: 8260C  
Preparation: 5030C**

MS Lab Sample ID: 480-127530-M-1 MS      Units: ug/L  
 Client Matrix: Water  
 Dilution: 5.0  
 Analysis Date: 11/19/2017 2201  
 Prep Date: 11/19/2017 2201  
 Leach Date: N/A

MSD Lab Sample ID: 480-127530-M-1 MSD  
 Client Matrix: Water  
 Dilution: 5.0  
 Analysis Date: 11/19/2017 2227  
 Prep Date: 11/19/2017 2227  
 Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
trans-1,4-Dichloro-2-butene	ND	125	125	84.0	107 F2
Trichloroethene	ND	125	125	163 F1	152
Trichlorofluoromethane	ND	125	125	198 F1	146 F2
Vinyl acetate	ND	250	250	219	280 F2
Vinyl chloride	ND	125	125	170 F1	119 F2

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Method Blank - Batch: 480-388239**

**Method: 8260C**  
**Preparation: 5030C**

Lab Sample ID: MB 480-388239/6  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/19/2017 1031  
Prep Date: 11/19/2017 1031  
Leach Date: N/A

Analysis Batch: 480-388239  
Prep Batch: N/A  
Leach Batch: N/A  
Units: ug/L

Instrument ID: HP5975T  
Lab File ID: T1982.D  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.35	1.0
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,1-Dichloropropene	ND		0.72	1.0
1,2,3-Trichlorobenzene	ND		0.41	1.0
1,2,3-Trichloropropane	ND		0.89	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2,4-Trimethylbenzene	ND		0.75	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane (EDB)	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloroethene, Total	ND		0.81	2.0
1,2-Dichloropropane	ND		0.72	1.0
1,3,5-Trichlorobenzene	ND		0.23	1.0
1,3,5-Trimethylbenzene	ND		0.77	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,3-Dichloropropane	ND		0.75	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
1,4-Dioxane	ND		9.3	40
2,2-Dichloropropane	ND		0.40	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chloroethyl vinyl ether	ND		0.96	5.0
2-Hexanone	ND		1.2	5.0
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Acetonitrile	ND		4.9	15
Acrolein	ND		0.91	20
Acrylonitrile	ND		0.83	5.0
Benzene	ND		0.41	1.0
Bromobenzene	ND		0.80	1.0
Bromochloromethane	ND		0.87	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Butyl alcohol, n-	ND		8.9	40
Butyl alcohol, tert-	ND		3.3	10
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Chlorodifluoromethane	ND		0.26	1.0

# Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Method Blank - Batch: 480-388239**

**Method: 8260C  
Preparation: 5030C**

Lab Sample ID: MB 480-388239/6  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/19/2017 1031  
 Prep Date: 11/19/2017 1031  
 Leach Date: N/A

Analysis Batch: 480-388239  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: ug/L

Instrument ID: HP5975T  
 Lab File ID: T1982.D  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dibromochloromethane	ND		0.32	1.0
Dibromomethane	ND		0.41	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Dichlorofluoromethane	ND		0.34	1.0
Ethyl acetate	ND		0.66	1.0
Ethyl ether	ND		0.72	1.0
Ethyl tert-butyl ether	ND		0.29	1.0
Ethylbenzene	ND		0.74	1.0
Hexachlorobutadiene	ND		0.28	1.0
Hexane	ND		0.40	10
Iodomethane	ND		0.30	1.0
Isobutanol	ND		4.8	25
Isopropyl ether	ND		0.59	1.0
Isopropylbenzene	ND		0.79	1.0
Methacrylonitrile	ND		0.69	5.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
m-Xylene & p-Xylene	ND		0.66	2.0
Naphthalene	ND		0.43	1.0
n-Butylbenzene	ND		0.64	1.0
N-Propylbenzene	ND		0.69	1.0
o-Chlorotoluene	ND		0.86	1.0
o-Xylene	ND		0.76	1.0
p-Chlorotoluene	ND		0.84	1.0
p-Cymene	ND		0.31	1.0
sec-Butylbenzene	ND		0.75	1.0
Styrene	ND		0.73	1.0
Tert-amyl methyl ether	ND		0.27	1.0
tert-Butylbenzene	ND		0.81	1.0
Tetrachloroethene	ND		0.36	1.0
Tetrahydrofuran	ND		1.3	5.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
trans-1,4-Dichloro-2-butene	ND		0.22	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0



## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Method Blank - Batch: 480-388239**

**Method: 8260C**  
**Preparation: 5030C**

Lab Sample ID: MB 480-388239/6	Analysis Batch: 480-388239	Instrument ID: HP5975T
Client Matrix: Water	Prep Batch: N/A	Lab File ID: T1982.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1031	Units: ug/L	Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1031		
Leach Date: N/A		

Analyte	Result	Qual	MDL	RL
Vinyl acetate	ND		0.85	5.0
Vinyl chloride	ND		0.90	1.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102	77 - 120
4-Bromofluorobenzene (Surr)	88	73 - 120
Toluene-d8 (Surr)	104	80 - 120

**Method Blank TICs- Batch: 480-388239**

Cas Number	Analyte	RT	Est. Result (ug)	Qual
67-72-1	Hexachloroethane TIC	0.00	ND	

# Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Lab Control Sample - Batch: 480-388239**

**Method: 8260C  
Preparation: 5030C**

Lab Sample ID:	LCS 480-388239/4	Analysis Batch:	480-388239	Instrument ID:	HP5975T
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	T1980.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	11/19/2017 0943	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	11/19/2017 0943				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1,1,2-Tetrachloroethane	25.0	25.4	102	80 - 120	
1,1,1-Trichloroethane	25.0	26.1	105	73 - 126	
1,1,2,2-Tetrachloroethane	25.0	26.4	105	76 - 120	
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	26.0	104	61 - 148	
1,1,2-Trichloroethane	25.0	27.8	111	76 - 122	
1,1-Dichloroethane	25.0	27.5	110	77 - 120	
1,1-Dichloroethene	25.0	27.0	108	66 - 127	
1,1-Dichloropropene	25.0	28.8	115	72 - 122	
1,2,3-Trichlorobenzene	25.0	28.6	114	75 - 123	
1,2,3-Trichloropropane	25.0	25.8	103	68 - 122	
1,2,4-Trichlorobenzene	25.0	27.3	109	79 - 122	
1,2,4-Trimethylbenzene	25.0	26.3	105	76 - 121	
1,2-Dibromo-3-Chloropropane	25.0	23.1	92	56 - 134	
1,2-Dibromoethane (EDB)	25.0	26.0	104	77 - 120	
1,2-Dichlorobenzene	25.0	26.6	106	80 - 124	
1,2-Dichloroethane	25.0	26.0	104	75 - 120	
1,2-Dichloropropane	25.0	24.4	98	76 - 120	
1,3,5-Trimethylbenzene	25.0	25.7	103	77 - 121	
1,3-Dichlorobenzene	25.0	26.3	105	77 - 120	
1,3-Dichloropropane	25.0	25.8	103	75 - 120	
1,4-Dichlorobenzene	25.0	26.1	104	80 - 120	
1,4-Dioxane	500	441	88	50 - 150	
2,2-Dichloropropane	25.0	26.6	106	63 - 136	
2-Butanone (MEK)	125	139	111	57 - 140	
2-Chloroethyl vinyl ether	25.0	24.9	100	70 - 129	
2-Hexanone	125	142	114	65 - 127	
4-Methyl-2-pentanone (MIBK)	125	141	113	71 - 125	
Acetone	125	124	100	56 - 142	
Acrolein	125	96.6	77	52 - 143	
Acrylonitrile	250	268	107	63 - 125	
Benzene	25.0	27.1	109	71 - 124	
Bromobenzene	25.0	25.8	103	78 - 120	
Bromochloromethane	25.0	24.8	99	72 - 130	
Bromodichloromethane	25.0	23.4	94	80 - 122	
Bromoform	25.0	21.8	87	61 - 132	
Bromomethane	25.0	27.3	109	55 - 144	
Butyl alcohol, tert-	250	262	105	75 - 125	
Carbon disulfide	25.0	21.9	88	59 - 134	
Carbon tetrachloride	25.0	26.3	105	72 - 134	
Chlorobenzene	25.0	25.2	101	80 - 120	
Chloroethane	25.0	29.7	119	69 - 136	
Chloroform	25.0	26.3	105	73 - 127	
Chloromethane	25.0	22.0	88	68 - 124	
cis-1,2-Dichloroethene	25.0	26.7	107	74 - 124	
cis-1,3-Dichloropropene	25.0	25.4	101	74 - 124	
Cyclohexane	25.0	28.0	112	59 - 135	

# Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Lab Control Sample - Batch: 480-388239**

**Method: 8260C  
Preparation: 5030C**

Lab Sample ID: LCS 480-388239/4	Analysis Batch: 480-388239	Instrument ID: HP5975T
Client Matrix: Water	Prep Batch: N/A	Lab File ID: T1980.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 0943	Units: ug/L	Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 0943		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Dibromochloromethane	25.0	25.6	102	75 - 125	
Dibromomethane	25.0	24.1	96	76 - 127	
Dichlorodifluoromethane	25.0	20.8	83	59 - 135	
Dichlorofluoromethane	25.0	23.5	94	76 - 127	
Ethyl ether	25.0	25.0	100	76 - 123	
Ethylbenzene	25.0	25.9	104	77 - 123	
Hexachlorobutadiene	25.0	29.1	116	68 - 131	
Hexane	25.0	29.2	117	54 - 146	
Iodomethane	25.0	21.3	85	78 - 123	
Isobutanol	625	660	106	51 - 150	
Isopropylbenzene	25.0	27.1	108	77 - 122	
Methyl acetate	50.0	52.1	104	74 - 133	
Methyl tert-butyl ether	25.0	27.2	109	77 - 120	
Methylcyclohexane	25.0	25.5	102	68 - 134	
Methylene Chloride	25.0	24.3	97	75 - 124	
m-Xylene & p-Xylene	25.0	25.7	103	76 - 122	
Naphthalene	25.0	27.3	109	66 - 125	
n-Butylbenzene	25.0	28.7	115	71 - 128	
N-Propylbenzene	25.0	27.0	108	75 - 127	
o-Chlorotoluene	25.0	26.0	104	76 - 121	
o-Xylene	25.0	25.7	103	76 - 122	
p-Chlorotoluene	25.0	25.8	103	77 - 121	
p-Cymene	25.0	27.7	111	73 - 120	
sec-Butylbenzene	25.0	28.6	114	74 - 127	
Styrene	25.0	25.7	103	80 - 120	
tert-Butylbenzene	25.0	27.6	110	75 - 123	
Tetrachloroethene	25.0	26.4	105	74 - 122	
Tetrahydrofuran	50.0	50.2	100	62 - 132	
Toluene	25.0	27.2	109	80 - 122	
trans-1,2-Dichloroethene	25.0	27.9	112	73 - 127	
trans-1,3-Dichloropropene	25.0	27.0	108	80 - 120	
trans-1,4-Dichloro-2-butene	25.0	25.3	101	41 - 131	
Trichloroethene	25.0	24.5	98	74 - 123	
Trichlorofluoromethane	25.0	21.8	87	62 - 150	
Vinyl acetate	50.0	60.2	120	50 - 144	
Vinyl chloride	25.0	26.2	105	65 - 133	
Surrogate		% Rec		Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)		102		77 - 120	
4-Bromofluorobenzene (Surr)		89		73 - 120	
Toluene-d8 (Surr)		103		80 - 120	

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 480-388239**

**Method: 8260C  
Preparation: 5030C**

MS Lab Sample ID: 480-127483-T-3 MS	Analysis Batch: 480-388239	Instrument ID: HP5975T
Client Matrix: Water	Prep Batch: N/A	Lab File ID: T2000.D
Dilution: 40	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1749		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1749		5 mL
Leach Date: N/A		

MSD Lab Sample ID: 480-127483-T-3 MSD	Analysis Batch: 480-388239	Instrument ID: HP5975T
Client Matrix: Water	Prep Batch: N/A	Lab File ID: T2001.D
Dilution: 40	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1813		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1813		5 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
1,1,1,2-Tetrachloroethane	106	101	80 - 120	4	20		
1,1,1-Trichloroethane	131	101	73 - 126	26	15	F1	F2
1,1,2,2-Tetrachloroethane	114	114	76 - 120	0	15		
1,1,2-Trichloroethane	130	117	76 - 122	10	15	F1	
1,1-Dichloroethane	129	111	77 - 120	15	20	F1	
1,1-Dichloroethene	159	111	66 - 127	36	16	F1	F2
1,1-Dichloropropene	138	110	72 - 122	23	20	F1	F2
1,2,3-Trichloropropane	104	114	68 - 122	9	14		
1,2,4-Trichlorobenzene	125	114	79 - 122	9	20	F1	
1,2-Dibromo-3-Chloropropane	96	107	56 - 134	12	15		
1,2-Dibromoethane (EDB)	112	113	77 - 120	1	15		
1,2-Dichlorobenzene	112	110	80 - 124	2	20		
1,2-Dichloroethane	121	107	75 - 120	12	20	F1	
1,2-Dichloropropane	141	112	76 - 120	23	20	F1	F2
1,3-Dichlorobenzene	117	113	77 - 120	4	20		
1,3-Dichloropropane	114	111	75 - 120	3	20		
1,4-Dichlorobenzene	112	113	78 - 124	1	20		
2,2-Dichloropropane	110	83	63 - 136	28	20		F2
2-Butanone (MEK)	130	105	57 - 140	22	20		F2
2-Hexanone	123	119	65 - 127	3	15		
4-Methyl-2-pentanone (MIBK)	127	120	71 - 125	6	35	F1	
Acetone	152	121	56 - 142	23	15	F1	F2
Acrolein	118	88	52 - 143	29	20		F2
Acrylonitrile	126	105	63 - 125	18	20	F1	
Benzene	126	115	71 - 124	9	13	F1	
Bromochloromethane	125	91	72 - 130	31	15		F2
Bromodichloromethane	126	110	80 - 122	14	15	F1	
Bromoform	97	89	61 - 132	9	15		
Bromomethane	121	91	55 - 144	28	15		F2
Carbon disulfide	145	110	59 - 134	28	15	F1	F2
Carbon tetrachloride	123	94	72 - 134	27	15		F2
Chlorobenzene	111	109	80 - 120	2	25		
Chloroethane	150	120	69 - 136	22	15	F1	F2

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 480-388239**

**Method: 8260C  
Preparation: 5030C**

MS Lab Sample ID: 480-127483-T-3 MS	Analysis Batch: 480-388239	Instrument ID: HP5975T
Client Matrix: Water	Prep Batch: N/A	Lab File ID: T2000.D
Dilution: 40	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1749		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1749		5 mL
Leach Date: N/A		

MSD Lab Sample ID: 480-127483-T-3 MSD	Analysis Batch: 480-388239	Instrument ID: HP5975T
Client Matrix: Water	Prep Batch: N/A	Lab File ID: T2001.D
Dilution: 40	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1813		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1813		5 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Chloroform	130	96	73 - 127	31	20	F1	F2
Chloromethane	126	93	68 - 124	30	15	F1	F2
cis-1,2-Dichloroethene	129	95	74 - 124	31	15	F1	F2
cis-1,3-Dichloropropene	128	107	74 - 124	18	15	F1	F2
Dibromochloromethane	118	110	75 - 125	6	15		
Dibromomethane	134	116	76 - 127	15	15	F1	
Dichlorodifluoromethane	108	80	59 - 135	30	20		F2
Ethylbenzene	113	111	77 - 123	1	15		
Hexachlorobutadiene	134	113	68 - 131	17	20	F1	
Iodomethane	140	106	78 - 123	27	20	F1	F2
Isobutanol	116	106	51 - 150	9	20		
Methylene Chloride	101	90	75 - 124	12	15		
m-Xylene & p-Xylene	108	104	76 - 122	4	16		
Naphthalene	130	119	66 - 125	9	20	F1	
o-Xylene	108	107	76 - 122	1	16		
Styrene	111	110	80 - 120	1	20		
Tetrachloroethene	123	113	74 - 122	9	20	F1	
Toluene	121	111	80 - 122	9	15		
trans-1,2-Dichloroethene	137	113	73 - 127	19	20	F1	
trans-1,3-Dichloropropene	117	106	80 - 120	9	15		
trans-1,4-Dichloro-2-butene	100	106	41 - 131	6	20		
Trichloroethene	128	103	74 - 123	21	16	F1	F2
Trichlorofluoromethane	131	80	62 - 150	49	20		F2
Vinyl acetate	116	95	50 - 144	20	23		
Vinyl chloride	161	114	65 - 133	34	15	F1	F2
Surrogate		MS % Rec	MSD % Rec	Acceptance Limits			
1,2-Dichloroethane-d4 (Surr)		112	99	77 - 120			
4-Bromofluorobenzene (Surr)		92	94	73 - 120			
Toluene-d8 (Surr)		106	103	80 - 120			

# Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 480-388239**

**Method: 8260C  
Preparation: 5030C**

MS Lab Sample ID: 480-127483-T-3 MS      Units: ug/L  
 Client Matrix: Water  
 Dilution: 40  
 Analysis Date: 11/19/2017 1749  
 Prep Date: 11/19/2017 1749  
 Leach Date: N/A

MSD Lab Sample ID: 480-127483-T-3 MSD  
 Client Matrix: Water  
 Dilution: 40  
 Analysis Date: 11/19/2017 1813  
 Prep Date: 11/19/2017 1813  
 Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
1,1,1,2-Tetrachloroethane	ND	1000	1000	1060	1010
1,1,1-Trichloroethane	ND	1000	1000	1310 F1	1010 F2
1,1,2,2-Tetrachloroethane	ND	1000	1000	1140	1140
1,1,2-Trichloroethane	ND	1000	1000	1300 F1	1170
1,1-Dichloroethane	ND	1000	1000	1290 F1	1110
1,1-Dichloroethene	ND	1000	1000	1590 F1	1110 F2
1,1-Dichloropropene	ND	1000	1000	1380 F1	1100 F2
1,2,3-Trichloropropane	ND	1000	1000	1040	1140
1,2,4-Trichlorobenzene	ND	1000	1000	1250 F1	1140
1,2-Dibromo-3-Chloropropane	ND	1000	1000	955	1070
1,2-Dibromoethane (EDB)	ND	1000	1000	1120	1130
1,2-Dichlorobenzene	ND	1000	1000	1120	1100
1,2-Dichloroethane	ND	1000	1000	1210 F1	1070
1,2-Dichloropropane	ND	1000	1000	1410 F1	1120 F2
1,3-Dichlorobenzene	ND	1000	1000	1170	1130
1,3-Dichloropropane	ND	1000	1000	1140	1110
1,4-Dichlorobenzene	ND	1000	1000	1120	1130
2,2-Dichloropropane	ND	1000	1000	1100	832 F2
2-Butanone (MEK)	ND	5000	5000	6500	5230 F2
2-Hexanone	ND	5000	5000	6150	5950
4-Methyl-2-pentanone (MIBK)	ND	5000	5000	6340 F1	5990
Acetone	ND	5000	5000	7590 F1	6050 F2
Acrolein	ND	5000	5000	5890	4380 F2
Acrylonitrile	ND	10000	10000	12600 F1	10500
Benzene	ND	1000	1000	1260 F1	1150
Bromochloromethane	ND	1000	1000	1250	914 F2
Bromodichloromethane	ND	1000	1000	1260 F1	1100
Bromoform	ND	1000	1000	975	891
Bromomethane	ND	1000	1000	1210	913 F2
Carbon disulfide	ND	1000	1000	1450 F1	1100 F2
Carbon tetrachloride	ND	1000	1000	1230	937 F2
Chlorobenzene	ND	1000	1000	1110	1090
Chloroethane	ND	1000	1000	1500 F1	1200 F2
Chloroform	ND	1000	1000	1300 F1	955 F2
Chloromethane	ND	1000	1000	1260 F1	928 F2
cis-1,2-Dichloroethene	ND	1000	1000	1290 F1	946 F2
cis-1,3-Dichloropropene	ND	1000	1000	1280 F1	1070 F2
Dibromochloromethane	ND	1000	1000	1180	1100
Dibromomethane	ND	1000	1000	1340 F1	1160
Dichlorodifluoromethane	ND	1000	1000	1080	797 F2
Ethylbenzene	ND	1000	1000	1130	1110
Hexachlorobutadiene	ND	1000	1000	1340 F1	1130
Iodomethane	ND	1000	1000	1400 F1	1060 F2

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 480-388239**

**Method: 8260C  
Preparation: 5030C**

MS Lab Sample ID: 480-127483-T-3 MS      Units: ug/L  
 Client Matrix: Water  
 Dilution: 40  
 Analysis Date: 11/19/2017 1749  
 Prep Date: 11/19/2017 1749  
 Leach Date: N/A

MSD Lab Sample ID: 480-127483-T-3 MSD  
 Client Matrix: Water  
 Dilution: 40  
 Analysis Date: 11/19/2017 1813  
 Prep Date: 11/19/2017 1813  
 Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual	
Isobutanol	ND	25000	25000	29100	26500	
Methylene Chloride	ND	1000	1000	1010	898	
m-Xylene & p-Xylene	31 J	1000	1000	1110	1080	
Naphthalene	ND	1000	1000	1300 F1	1190	
o-Xylene	ND	1000	1000	1080	1070	
Styrene	ND	1000	1000	1110	1100	
Tetrachloroethene	ND	1000	1000	1230 F1	1130	
Toluene	46	1000	1000	1260	1160	
trans-1,2-Dichloroethene	ND	1000	1000	1370 F1	1130	
trans-1,3-Dichloropropene	ND	1000	1000	1170	1060	
trans-1,4-Dichloro-2-butene	ND	1000	1000	996	1060	
Trichloroethene	ND	1000	1000	1280 F1	1030	F2
Trichlorofluoromethane	ND	1000	1000	1310	798	F2
Vinyl acetate	ND	2000	2000	2320	1900	
Vinyl chloride	ND	1000	1000	1610 F1	1140	F2

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Method Blank - Batch: 280-395708**

Lab Sample ID: MB 280-395708/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/21/2017 1710  
 Prep Date: 11/21/2017 0752  
 Leach Date: N/A

Analysis Batch: 280-396202  
 Prep Batch: 280-395708  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6010D  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_025  
 Lab File ID: 25A112117b.asc  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Calcium, Dissolved	ND		0.035	0.040
Iron, Dissolved	ND		0.022	0.060
Magnesium, Dissolved	ND		0.011	0.050
Potassium, Dissolved	ND		0.24	1.0
Sodium, Dissolved	ND		0.12	1.0

**Lab Control Sample - Batch: 280-395708**

Lab Sample ID: LCS 280-395708/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/21/2017 1713  
 Prep Date: 11/21/2017 0752  
 Leach Date: N/A

Analysis Batch: 280-396202  
 Prep Batch: 280-395708  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6010D  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_025  
 Lab File ID: 25A112117b.asc  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Calcium, Dissolved	50.0	49.3	99	90 - 111	
Iron, Dissolved	1.00	1.02	102	89 - 115	
Magnesium, Dissolved	50.0	53.9	108	90 - 113	
Potassium, Dissolved	50.0	50.8	102	89 - 114	
Sodium, Dissolved	50.0	52.7	105	90 - 115	



## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-395708**

**Method: 6010D  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-103420-A-6-B MS	Analysis Batch: 280-396202	Instrument ID: MT_025
Client Matrix: Water	Prep Batch: 280-395708	Lab File ID: 25A112117b.asc
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 11/21/2017 1723		Final Weight/Volume: 50 mL
Prep Date: 11/21/2017 0752		
Leach Date: N/A		

MSD Lab Sample ID: 280-103420-A-6-C MSD	Analysis Batch: 280-396202	Instrument ID: MT_025
Client Matrix: Water	Prep Batch: 280-395708	Lab File ID: 25A112117b.asc
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 11/21/2017 1725		Final Weight/Volume: 50 mL
Prep Date: 11/21/2017 0752		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Calcium, Dissolved	93	93	48 - 153	0	20		
Iron, Dissolved	100	100	52 - 155	1	20		
Magnesium, Dissolved	105	105	62 - 146	0	20		
Potassium, Dissolved	101	103	76 - 132	1	20		
Sodium, Dissolved	104	105	70 - 203	1	20		

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-395708**

**Method: 6010D  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-103420-A-6-B MS	Units: mg/L	MSD Lab Sample ID: 280-103420-A-6-C MSD
Client Matrix: Water		Client Matrix: Water
Dilution: 1.0		Dilution: 1.0
Analysis Date: 11/21/2017 1723		Analysis Date: 11/21/2017 1725
Prep Date: 11/21/2017 0752		Prep Date: 11/21/2017 0752
Leach Date: N/A		Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Calcium, Dissolved	57	50.0	50.0	103	104
Iron, Dissolved	ND	1.00	1.00	0.996	1.00
Magnesium, Dissolved	11	50.0	50.0	63.3	63.5
Potassium, Dissolved	6.0	50.0	50.0	56.6	57.4
Sodium, Dissolved	12	50.0	50.0	64.0	64.4

# Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Method Blank - Batch: 280-396510**

Lab Sample ID: MB 280-396510/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/28/2017 1941  
 Prep Date: 11/28/2017 0806  
 Leach Date: N/A

Analysis Batch: 280-396876  
 Prep Batch: 280-396510  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6010D  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_051  
 Lab File ID: 51A112817A.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Cobalt, Total	ND		0.0012	0.0030
Iron, Total	ND		0.022	0.060

**Lab Control Sample - Batch: 280-396510**

Lab Sample ID: LCS 280-396510/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/28/2017 1944  
 Prep Date: 11/28/2017 0806  
 Leach Date: N/A

Analysis Batch: 280-396876  
 Prep Batch: 280-396510  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6010D  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_051  
 Lab File ID: 51A112817A.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Cobalt, Total	0.500	0.537	107	89 - 111	
Iron, Total	1.00	1.12	112	89 - 115	

**Matrix Spike/  
 Matrix Spike Duplicate Recovery Report - Batch: 280-396510**

MS Lab Sample ID: 280-103614-2  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/28/2017 1956  
 Prep Date: 11/28/2017 0806  
 Leach Date: N/A

Analysis Batch: 280-396876  
 Prep Batch: 280-396510  
 Leach Batch: N/A

**Method: 6010D  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_051  
 Lab File ID: 51A112817A.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-103614-2  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/28/2017 1959  
 Prep Date: 11/28/2017 0806  
 Leach Date: N/A

Analysis Batch: 280-396876  
 Prep Batch: 280-396510  
 Leach Batch: N/A

Instrument ID: MT\_051  
 Lab File ID: 51A112817A.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Cobalt, Total	106	103	82 - 119	3	20		
Iron, Total	113	129	52 - 155	4	20		

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

### Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 280-396510

**Method: 6010D**  
**Preparation: 3005A**  
**Total Recoverable**

MS Lab Sample ID: 280-103614-2                      Units: mg/L  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/28/2017 1956  
Prep Date: 11/28/2017 0806  
Leach Date: N/A

MSD Lab Sample ID: 280-103614-2  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/28/2017 1959  
Prep Date: 11/28/2017 0806  
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Cobalt, Total	ND	0.500	0.500	0.528	0.514
Iron, Total	2.5	1.00	1.00	3.66	3.82

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Method Blank - Batch: 280-395711**

Lab Sample ID: MB 280-395711/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/21/2017 1717  
 Prep Date: 11/21/2017 0752  
 Leach Date: N/A

Analysis Batch: 280-396328  
 Prep Batch: 280-395711  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_077  
 Lab File ID: 049\_BLK.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Manganese, Dissolved	ND		0.00031	0.0010

**Lab Control Sample - Batch: 280-395711**

Lab Sample ID: LCS 280-395711/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/21/2017 1720  
 Prep Date: 11/21/2017 0752  
 Leach Date: N/A

Analysis Batch: 280-396328  
 Prep Batch: 280-395711  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_077  
 Lab File ID: 050\_LCS.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Manganese, Dissolved	0.0400	0.0412	103	89 - 119	

**Matrix Spike/  
 Matrix Spike Duplicate Recovery Report - Batch: 280-395711**

MS Lab Sample ID: 280-103420-A-6-E MS  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/21/2017 1736  
 Prep Date: 11/21/2017 0752  
 Leach Date: N/A

Analysis Batch: 280-396328  
 Prep Batch: 280-395711  
 Leach Batch: N/A

**Method: 6020B  
 Preparation: 3005A  
 Dissolved**

Instrument ID: MT\_077  
 Lab File ID: 054SMPL.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-103420-A-6-F MSD  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/21/2017 1739  
 Prep Date: 11/21/2017 0752  
 Leach Date: N/A

Analysis Batch: 280-396328  
 Prep Batch: 280-395711  
 Leach Batch: N/A

Instrument ID: MT\_077  
 Lab File ID: 055SMPL.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Manganese, Dissolved	106	92	85 - 117	15	20		

**Quality Control Results**

Client: Waste Management

Job Number: 280-103614-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-395711**

**Method: 6020B  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-103420-A-6-E MS      Units: mg/L  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/21/2017 1736  
Prep Date: 11/21/2017 0752  
Leach Date: N/A

MSD Lab Sample ID: 280-103420-A-6-F MSD  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/21/2017 1739  
Prep Date: 11/21/2017 0752  
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Manganese, Dissolved	ND	0.0400	0.0400	0.0425	0.0367

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Method Blank - Batch: 280-396509**

Lab Sample ID: MB 280-396509/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/27/2017 2333  
 Prep Date: 11/27/2017 1610  
 Leach Date: N/A

Analysis Batch: 280-396711  
 Prep Batch: 280-396509  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_078  
 Lab File ID: 183\_BLK\_112717.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Antimony, Total	ND		0.00040	0.0010
Barium, Total	ND		0.00029	0.0010
Beryllium, Total	ND		0.000080	0.0010
Cadmium, Total	ND		0.00027	0.00020
Chromium, Total	ND		0.00050	0.0030
Copper, Total	ND		0.00056	0.0020
Lead, Total	ND		0.00018	0.0010
Manganese, Total	ND		0.00031	0.0010
Nickel, Total	ND		0.00030	0.0040
Silver, Total	ND		0.000033	0.0020
Thallium, Total	ND		0.000050	0.0010
Vanadium, Total	ND		0.00050	0.0020
Zinc, Total	ND		0.0020	0.0050

**Method Blank - Batch: 280-396509**

Lab Sample ID: MB 280-396509/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/28/2017 0133  
 Prep Date: 11/27/2017 1610  
 Leach Date: N/A

Analysis Batch: 280-396711  
 Prep Batch: 280-396509  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_078  
 Lab File ID: 218\_BLK\_112717.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Selenium, Total	ND		0.00070	0.0010

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Lab Control Sample - Batch: 280-396509**

**Method: 6020B  
Preparation: 3005A  
Total Recoverable**

Lab Sample ID: LCS 280-396509/2-A	Analysis Batch: 280-396711	Instrument ID: MT_078
Client Matrix: Water	Prep Batch: 280-396509	Lab File ID: 184_LCS_112717.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 11/27/2017 2336	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 11/27/2017 1610		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony, Total	0.0400	0.0376	94	79 - 111	
Barium, Total	0.0400	0.0406	102	92 - 117	
Beryllium, Total	0.0400	0.0422	105	87 - 118	
Cadmium, Total	0.0400	0.0390	97	91 - 114	
Chromium, Total	0.0400	0.0414	103	91 - 114	
Copper, Total	0.0400	0.0433	108	89 - 116	
Lead, Total	0.0400	0.0402	101	95 - 116	
Manganese, Total	0.0400	0.0418	104	89 - 119	
Nickel, Total	0.0400	0.0415	104	92 - 116	
Silver, Total	0.0400	0.0385	96	93 - 118	
Thallium, Total	0.0400	0.0385	96	94 - 115	
Vanadium, Total	0.0400	0.0399	100	91 - 114	
Zinc, Total	0.0400	0.0418	104	86 - 123	

**Lab Control Sample - Batch: 280-396509**

**Method: 6020B  
Preparation: 3005A  
Total Recoverable**

Lab Sample ID: LCS 280-396509/2-A	Analysis Batch: 280-396711	Instrument ID: MT_078
Client Matrix: Water	Prep Batch: 280-396509	Lab File ID: 219_LCS_112717.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 11/28/2017 0137	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 11/27/2017 1610		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Selenium, Total	0.0400	0.0398	99	90 - 115	

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396509**

**Method: 6020B  
Preparation: 3005A  
Total Recoverable**

MS Lab Sample ID: 280-103614-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/27/2017 2346  
Prep Date: 11/27/2017 1610  
Leach Date: N/A

Analysis Batch: 280-396711  
Prep Batch: 280-396509  
Leach Batch: N/A

Instrument ID: MT\_078  
Lab File ID: 187SMPL\_112717.D  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-103614-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/27/2017 2350  
Prep Date: 11/27/2017 1610  
Leach Date: N/A

Analysis Batch: 280-396711  
Prep Batch: 280-396509  
Leach Batch: N/A

Instrument ID: MT\_078  
Lab File ID: 188SMPL\_112717.D  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Antimony, Total	94	97	85 - 115	4	20		
Barium, Total	97	100	85 - 118	2	20		
Beryllium, Total	106	106	80 - 125	0	20		
Cadmium, Total	98	103	85 - 115	5	20		
Chromium, Total	99	99	84 - 121	0	20		
Copper, Total	101	104	85 - 119	3	20		
Lead, Total	98	101	85 - 118	3	20		
Manganese, Total	97	99	85 - 117	2	20		
Nickel, Total	98	99	85 - 119	1	20		
Silver, Total	95	96	85 - 115	0	20		
Thallium, Total	93	96	85 - 118	3	20		
Vanadium, Total	95	98	85 - 120	3	20		
Zinc, Total	104	99	83 - 122	5	20		



## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396509**

**Method: 6020B  
Preparation: 3005A  
Total Recoverable**

MS Lab Sample ID: 280-103614-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/28/2017 0147  
Prep Date: 11/27/2017 1610  
Leach Date: N/A

Analysis Batch: 280-396711  
Prep Batch: 280-396509  
Leach Batch: N/A

Instrument ID: MT\_078  
Lab File ID: 222SMPL\_112717.D  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-103614-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/28/2017 0151  
Prep Date: 11/27/2017 1610  
Leach Date: N/A

Analysis Batch: 280-396711  
Prep Batch: 280-396509  
Leach Batch: N/A

Instrument ID: MT\_078  
Lab File ID: 223SMPL\_112717.D  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Selenium, Total	97	98	77 - 122	1	20		

**Quality Control Results**

Client: Waste Management

Job Number: 280-103614-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396509**

**Method: 6020B  
Preparation: 3005A  
Total Recoverable**

MS Lab Sample ID: 280-103614-1                      Units: mg/L  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/27/2017 2346  
Prep Date: 11/27/2017 1610  
Leach Date: N/A

MSD Lab Sample ID: 280-103614-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/27/2017 2350  
Prep Date: 11/27/2017 1610  
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Antimony, Total	0.00049 J	0.0400	0.0400	0.0380	0.0394
Barium, Total	0.0025	0.0400	0.0400	0.0415	0.0424
Beryllium, Total	0.000092 J	0.0400	0.0400	0.0424	0.0426
Cadmium, Total	ND	0.0400	0.0400	0.0394	0.0414
Chromium, Total	0.0081	0.0400	0.0400	0.0478	0.0479
Copper, Total	ND	0.0400	0.0400	0.0405	0.0417
Lead, Total	ND	0.0400	0.0400	0.0392	0.0405
Manganese, Total	0.0029	0.0400	0.0400	0.0418	0.0426
Nickel, Total	0.0015 J	0.0400	0.0400	0.0408	0.0411
Silver, Total	ND	0.0400	0.0400	0.0381	0.0382
Thallium, Total	ND	0.0400	0.0400	0.0371	0.0383
Vanadium, Total	0.0023	0.0400	0.0400	0.0403	0.0415
Zinc, Total	ND	0.0400	0.0400	0.0416	0.0398

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396509**

**Method: 6020B  
Preparation: 3005A  
Total Recoverable**

MS Lab Sample ID: 280-103614-1                      Units: mg/L  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/28/2017 0147  
Prep Date: 11/27/2017 1610  
Leach Date: N/A

MSD Lab Sample ID: 280-103614-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/28/2017 0151  
Prep Date: 11/27/2017 1610  
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Selenium, Total	ND	0.0400	0.0400	0.0390	0.0392

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Method Blank - Batch: 280-397718**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 280-397718/6	Analysis Batch: 280-397718	Instrument ID: WC_IonChrom8
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 06.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/06/2017 1229	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Chloride	ND		1.0	1.0
Sulfate	ND		1.0	1.0

**Method Reporting Limit Check - Batch: 280-397718**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MRL 280-397718/3	Analysis Batch: 280-397718	Instrument ID: WC_IonChrom8
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 03.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/06/2017 1139	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	2.50	ND	99	50 - 150	
Sulfate	2.50	ND	93	50 - 150	

**Lab Control Sample/**

**Lab Control Sample Duplicate Recovery Report - Batch: 280-397718**

**Method: 300.0**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-397718/4	Analysis Batch: 280-397718	Instrument ID: WC_IonChrom8
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 04.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/06/2017 1156	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-397718/5	Analysis Batch: 280-397718	Instrument ID: WC_IonChrom8
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 05.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/06/2017 1212	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Chloride	96	96	90 - 110	0	10		
Sulfate	96	96	90 - 110	0	10		

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Laboratory Control/  
Laboratory Duplicate Data Report - Batch: 280-397718**

**Method: 300.0  
Preparation: N/A**

LCS Lab Sample ID: LCS 280-397718/4      Units: mg/L  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/06/2017 1156  
 Prep Date: N/A  
 Leach Date: N/A

LCSD Lab Sample ID: LCSD 280-397718/5  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/06/2017 1212  
 Prep Date: N/A  
 Leach Date: N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Chloride	100	100	96.0	96.0
Sulfate	100	100	95.7	95.6

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-397718**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-103614-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/06/2017 1801  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-397718  
 Prep Batch: N/A  
 Leach Batch: N/A

Instrument ID: WC\_IonChrom8  
 Lab File ID: 24.0000.d  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL  
 25 uL

MSD Lab Sample ID: 280-103614-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/06/2017 1817  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-397718  
 Prep Batch: N/A  
 Leach Batch: N/A

Instrument ID: WC\_IonChrom8  
 Lab File ID: 25.0000.d  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL  
 25 uL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Chloride	105	102	80 - 120	3	20		
Sulfate	104	101	80 - 120	3	20		

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-397718**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-103614-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/06/2017 1801  
 Prep Date: N/A  
 Leach Date: N/A

Units: mg/L

MSD Lab Sample ID: 280-103614-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/06/2017 1817  
 Prep Date: N/A  
 Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Chloride	1.8	25.0	25.0	28.0	27.3
Sulfate	2.7	25.0	25.0	28.7	27.9

**Duplicate - Batch: 280-397718**

**Method: 300.0  
Preparation: N/A**

Lab Sample ID: 280-103614-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/06/2017 1744  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-397718  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: mg/L

Instrument ID: WC\_IonChrom8  
 Lab File ID: 23.0000.d  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL  
 25 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Chloride	1.8	1.83	1	15	
Sulfate	2.7	2.58	3	15	

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Method Blank - Batch: 280-397108**

**Method: 350.1**  
**Preparation: N/A**

Lab Sample ID: MB 280-397108/20	Analysis Batch: 280-397108	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\112917.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/29/2017 1159	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Ammonia (as N)	ND		0.030	0.030

**Lab Control Sample/**  
**Lab Control Sample Duplicate Recovery Report - Batch: 280-397108**

**Method: 350.1**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-397108/18	Analysis Batch: 280-397108	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\112917.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 11/29/2017 1155	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-397108/19	Analysis Batch: 280-397108	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\112917.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 11/29/2017 1157	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Ammonia (as N)	100	99	90 - 110	1	10		

**Laboratory Control/**  
**Laboratory Duplicate Data Report - Batch: 280-397108**

**Method: 350.1**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-397108/18	Units: mg/L	LCSD Lab Sample ID: LCSD 280-397108/19
Client Matrix: Water		Client Matrix: Water
Dilution: 1.0		Dilution: 1.0
Analysis Date: 11/29/2017 1155		Analysis Date: 11/29/2017 1157
Prep Date: N/A		Prep Date: N/A
Leach Date: N/A		Leach Date: N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Ammonia (as N)	2.50	2.50	2.51	2.48

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-397108**

**Method: 350.1  
Preparation: N/A**

MS Lab Sample ID: 280-103614-10  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/29/2017 1300  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-397108  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_Alp 3  
Lab File ID: C:\FLOW\_4\112917.RS  
Initial Weight/Volume: 10 mL  
Final Weight/Volume: 10 mL

MSD Lab Sample ID: 280-103614-10  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/29/2017 1302  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-397108  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_Alp 3  
Lab File ID: C:\FLOW\_4\112917.RS  
Initial Weight/Volume: 10 mL  
Final Weight/Volume: 10 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Ammonia (as N)	108	86	90 - 110	15	10		F1 F2

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-397108**

**Method: 350.1  
Preparation: N/A**

MS Lab Sample ID: 280-103614-10  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/29/2017 1300  
Prep Date: N/A  
Leach Date: N/A

Units: mg/L

MSD Lab Sample ID: 280-103614-10  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/29/2017 1302  
Prep Date: N/A  
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Ammonia (as N)	0.46	1.00	1.00	1.54	1.32 F1 F2

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Method Blank - Batch: 280-397284**

**Method: 350.1**  
**Preparation: N/A**

Lab Sample ID: MB 280-397284/20	Analysis Batch: 280-397284	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\113017.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/30/2017 1852	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Ammonia (as N)	ND		0.030	0.030

**Lab Control Sample/**  
**Lab Control Sample Duplicate Recovery Report - Batch: 280-397284**

**Method: 350.1**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-397284/18	Analysis Batch: 280-397284	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\113017.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 11/30/2017 1848	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-397284/19	Analysis Batch: 280-397284	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\113017.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 11/30/2017 1850	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Ammonia (as N)	102	101	90 - 110	1	10		

**Laboratory Control/**  
**Laboratory Duplicate Data Report - Batch: 280-397284**

**Method: 350.1**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-397284/18	Units: mg/L	LCSD Lab Sample ID: LCSD 280-397284/19
Client Matrix: Water		Client Matrix: Water
Dilution: 1.0		Dilution: 1.0
Analysis Date: 11/30/2017 1848		Analysis Date: 11/30/2017 1850
Prep Date: N/A		Prep Date: N/A
Leach Date: N/A		Leach Date: N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Ammonia (as N)	2.50	2.50	2.55	2.52



## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-397284**

**Method: 350.1  
Preparation: N/A**

MS Lab Sample ID: 280-103653-B-1 MS	Analysis Batch: 280-397284	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\113017.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 11/30/2017 1856		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-103653-B-1 MSD	Analysis Batch: 280-397284	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\113017.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 11/30/2017 1858		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Ammonia (as N)	91	91	90 - 110	0	10		

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-397284**

**Method: 350.1  
Preparation: N/A**

MS Lab Sample ID: 280-103653-B-1 MS	Units: mg/L	MSD Lab Sample ID: 280-103653-B-1 MSD
Client Matrix: Water		Client Matrix: Water
Dilution: 1.0		Dilution: 1.0
Analysis Date: 11/30/2017 1856		Analysis Date: 11/30/2017 1858
Prep Date: N/A		Prep Date: N/A
Leach Date: N/A		Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Ammonia (as N)	0.24	1.00	1.00	1.15	1.15

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Method Blank - Batch: 280-396672**

**Method: 353.2**  
**Preparation: N/A**

Lab Sample ID: MB 280-396672/66	Analysis Batch: 280-396672	Instrument ID: WC_Alp 2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\112717.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 11/27/2017 1853	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Nitrate Nitrite as N	ND		0.10	0.10

**Lab Control Sample - Batch: 280-396672**

**Method: 353.2**  
**Preparation: N/A**

Lab Sample ID: LCS 280-396672/65	Analysis Batch: 280-396672	Instrument ID: WC_Alp 2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\112717.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 11/27/2017 1851	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate Nitrite as N	5.00	4.82	96	90 - 110	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396672**

**Method: 353.2**  
**Preparation: N/A**

MS Lab Sample ID: 280-103614-D-1 MS	Analysis Batch: 280-396672	Instrument ID: WC_Alp 2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\112717.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/27/2017 1933		Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-103614-D-1 MSD	Analysis Batch: 280-396672	Instrument ID: WC_Alp 2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\112717.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/27/2017 1935		Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrate Nitrite as N	96	97	90 - 110	1	10		

# Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396672**

**Method: 353.2  
Preparation: N/A**

MS Lab Sample ID: 280-103614-D-1 MS      Units: mg/L  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/27/2017 1933  
Prep Date: N/A  
Leach Date: N/A

MSD Lab Sample ID: 280-103614-D-1 MSD  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/27/2017 1935  
Prep Date: N/A  
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Nitrate Nitrite as N	0.22	4.00	4.00	4.06	4.10

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Method Blank - Batch: 280-396846**

**Method: 353.2**  
**Preparation: N/A**

Lab Sample ID: MB 280-396846/110	Analysis Batch: 280-396846	Instrument ID: WC_Alp 2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\112817.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 11/28/2017 2054	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Nitrate Nitrite as N	ND		0.10	0.10

**Lab Control Sample - Batch: 280-396846**

**Method: 353.2**  
**Preparation: N/A**

Lab Sample ID: LCS 280-396846/109	Analysis Batch: 280-396846	Instrument ID: WC_Alp 2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\112817.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 11/28/2017 2052	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate Nitrite as N	5.00	4.59	92	90 - 110	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396846**

**Method: 353.2**  
**Preparation: N/A**

MS Lab Sample ID: 280-103656-B-2 MS	Analysis Batch: 280-396846	Instrument ID: WC_Alp 2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\112817.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/28/2017 2058		Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-103656-B-2 MSD	Analysis Batch: 280-396846	Instrument ID: WC_Alp 2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\112817.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/28/2017 2100		Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrate Nitrite as N	102	101	90 - 110	0	10		

# Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396846**

**Method: 353.2  
Preparation: N/A**

MS Lab Sample ID: 280-103656-B-2 MS      Units: mg/L  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/28/2017 2058  
Prep Date: N/A  
Leach Date: N/A

MSD Lab Sample ID: 280-103656-B-2 MSD  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/28/2017 2100  
Prep Date: N/A  
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Nitrate Nitrite as N	0.24	4.00	4.00	4.31	4.30

# Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

## Method Blank - Batch: 280-397461

**Method: 353.2**  
**Preparation: N/A**

Lab Sample ID:	MB 280-397461/1	Analysis Batch:	280-397461	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	12/04/2017 1348	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	RL	RL
Nitrate as N	ND		0.050	0.050

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Method Blank - Batch: 280-396189**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: MB 280-396189/5	Analysis Batch: 280-396189	Instrument ID: WC-AT3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 112117.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/21/2017 1643	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Alkalinity, Total (As CaCO3)	ND		5.0	5.0
Alkalinity, Bicarbonate (As CaCO3)	ND		5.0	5.0

**Lab Control Sample - Batch: 280-396189**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: LCS 280-396189/4	Analysis Batch: 280-396189	Instrument ID: WC-AT3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 112117.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/21/2017 1639	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity, Total (As CaCO3)	200	194	97	90 - 110	

**Duplicate - Batch: 280-396189**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: 280-103615-A-3 DU	Analysis Batch: 280-396189	Instrument ID: WC-AT3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 112117.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/21/2017 1652	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Alkalinity, Total (As CaCO3)	ND	ND	NC	10	

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Method Blank - Batch: 280-396190**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: MB 280-396190/31	Analysis Batch: 280-396190	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 112117.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/21/2017 1929	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Alkalinity, Total (As CaCO3)	ND		5.0	5.0
Alkalinity, Bicarbonate (As CaCO3)	ND		5.0	5.0

**Lab Control Sample - Batch: 280-396190**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: LCS 280-396190/30	Analysis Batch: 280-396190	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 112117.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/21/2017 1922	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity, Total (As CaCO3)	200	186	93	90 - 110	

**Duplicate - Batch: 280-396190**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: 280-103555-C-2 DU	Analysis Batch: 280-396190	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 112117.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/21/2017 1942	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Alkalinity, Total (As CaCO3)	100	103	0.4	10	



## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Method Blank - Batch: 280-396376**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: MB 280-396376/5	Analysis Batch: 280-396376	Instrument ID: WC-AT3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 112417.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/22/2017 1307	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Alkalinity, Total (As CaCO3)	ND		5.0	5.0
Alkalinity, Bicarbonate (As CaCO3)	ND		5.0	5.0

**Lab Control Sample - Batch: 280-396376**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: LCS 280-396376/4	Analysis Batch: 280-396376	Instrument ID: WC-AT3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 112417.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/22/2017 1303	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity, Total (As CaCO3)	200	195	97	90 - 110	

**Duplicate - Batch: 280-396376**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: 280-103734-A-2 DU	Analysis Batch: 280-396376	Instrument ID: WC-AT3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 112417.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/22/2017 1320	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Alkalinity, Total (As CaCO3)	1400	1360	0.8	10	

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Method Blank - Batch: 280-395482**

**Method: SM 2540C**

**Preparation: N/A**

Lab Sample ID: MB 280-395482/1	Analysis Batch: 280-395482	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 11/16/2017 0733	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Total Dissolved Solids (TDS)	ND		5.0	5.0

**Lab Control Sample - Batch: 280-395482**

**Method: SM 2540C**

**Preparation: N/A**

Lab Sample ID: LCS 280-395482/2	Analysis Batch: 280-395482	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 11/16/2017 0733	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Dissolved Solids (TDS)	500	493	99	86 - 110	

**Duplicate - Batch: 280-395482**

**Method: SM 2540C**

**Preparation: N/A**

Lab Sample ID: 280-103614-10	Analysis Batch: 280-395482	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 11/16/2017 0733	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Dissolved Solids (TDS)	120	120	3	10	

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Method Blank - Batch: 280-395606**

**Method: SM 2540D**

**Preparation: N/A**

Lab Sample ID: MB 280-395606/2	Analysis Batch: 280-395606	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 11/16/2017 1842	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Total Suspended Solids	ND		4.0	4.0

**Lab Control Sample - Batch: 280-395606**

**Method: SM 2540D**

**Preparation: N/A**

Lab Sample ID: LCS 280-395606/1	Analysis Batch: 280-395606	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 11/16/2017 1842	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Suspended Solids	100	96.4	96	86 - 114	

**Duplicate - Batch: 280-395606**

**Method: SM 2540D**

**Preparation: N/A**

Lab Sample ID: 280-103614-10	Analysis Batch: 280-395606	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 11/16/2017 1842	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Suspended Solids	ND	ND	NC	10	

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Method Blank - Batch: 280-397620**

**Method: SM 5310B**

**Preparation: N/A**

Lab Sample ID: MB 280-397620/13	Analysis Batch: 280-397620	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 120417.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 12/04/2017 1915	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Total Organic Carbon - Average	ND		1.0	1.0

**Lab Control Sample - Batch: 280-397620**

**Method: SM 5310B**

**Preparation: N/A**

Lab Sample ID: LCS 280-397620/12	Analysis Batch: 280-397620	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 120417.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 12/04/2017 1856	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon - Average	25.0	24.7	99	88 - 112	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-397620**

**Method: SM 5310B**

**Preparation: N/A**

MS Lab Sample ID: 280-103614-1	Analysis Batch: 280-397620	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 120417.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 12/05/2017 0004		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-103614-1	Analysis Batch: 280-397620	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 120417.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 12/05/2017 0023		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Total Organic Carbon - Average	100	100	88 - 112	1	15		

# Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-397620**

**Method: SM 5310B  
Preparation: N/A**

MS Lab Sample ID: 280-103614-1                      Units: mg/L  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 12/05/2017 0004  
Prep Date: N/A  
Leach Date: N/A

MSD Lab Sample ID: 280-103614-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 12/05/2017 0023  
Prep Date: N/A  
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Total Organic Carbon - Average	ND	25.0	25.0	25.0	24.9

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

### Laboratory Chronicle

Lab ID: 280-103614-1

Client ID: MW-36A

Sample Date/Time: 11/14/2017 09:43    Received Date/Time: 11/15/2017 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103614-I-1		280-396651		11/27/2017 21:57	1	TAL DEN	MRM
A:8260B SIM	280-103614-I-1		280-396651		11/27/2017 21:57	1	TAL DEN	MRM
P:5030C	280-103614-J-1		480-388235		11/19/2017 15:19	1	TAL BUF	RRS
A:8260C	280-103614-J-1		480-388235		11/19/2017 15:19	1	TAL BUF	RRS
P:3005A	280-103614-F-1-A		280-396202	280-395708	11/21/2017 07:52	1	TAL DEN	CDH
A:6010D	280-103614-F-1-A		280-396202	280-395708	11/21/2017 17:41	1	TAL DEN	CRR
P:3005A	280-103614-E-1-D		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	280-103614-E-1-D		280-396876	280-396510	11/28/2017 19:47	1	TAL DEN	CML
P:3005A	280-103614-F-1-B		280-396328	280-395711	11/21/2017 07:52	1	TAL DEN	CDH
A:6020B	280-103614-F-1-B		280-396328	280-395711	11/21/2017 17:58	1	TAL DEN	LMT
P:3005A	280-103614-E-1-A		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103614-E-1-A		280-396711	280-396509	11/27/2017 23:40	1	TAL DEN	LMT
P:3005A	280-103614-E-1-A		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103614-E-1-A		280-396711	280-396509	11/28/2017 01:40	1	TAL DEN	LMT
A:300.0	280-103614-A-1		280-397718		12/06/2017 17:27	1	TAL DEN	JML
A:350.1	280-103614-C-1		280-397108		11/29/2017 12:07	1	TAL DEN	KAM
A:353.2	280-103614-A-1		280-397461		12/04/2017 13:48	1	TAL DEN	AJA
A:SM 2320B	280-103614-A-1		280-396189		11/21/2017 18:07	1	TAL DEN	A1D
A:SM 2540C	280-103614-B-1		280-395482		11/16/2017 07:33	1	TAL DEN	JAP
A:SM 2540D	280-103614-A-1		280-395606		11/16/2017 18:42	1	TAL DEN	SVC
A:SM 5310B	280-103614-C-1		280-397620		12/04/2017 23:48	1	TAL DEN	CCJ
A:Field Sampling	280-103614-A-1		280-395824		11/14/2017 10:43	1	TAL DEN	CS

Lab ID: 280-103614-1 MS

Client ID: MW-36A

Sample Date/Time: 11/14/2017 09:43    Received Date/Time: 11/15/2017 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3005A	280-103614-E-1-B MS		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103614-E-1-B MS		280-396711	280-396509	11/27/2017 23:46	1	TAL DEN	LMT
P:3005A	280-103614-E-1-B MS		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103614-E-1-B MS		280-396711	280-396509	11/28/2017 01:47	1	TAL DEN	LMT
A:300.0	280-103614-A-1 MS		280-397718		12/06/2017 18:01	1	TAL DEN	JML
A:353.2	280-103614-D-1 MS		280-396672		11/27/2017 19:33	1	TAL DEN	SVC
A:SM 5310B	280-103614-C-1 MS		280-397620		12/05/2017 00:04	1	TAL DEN	CCJ

# Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

## Laboratory Chronicle

Lab ID: 280-103614-1 MSD

Client ID: MW-36A

Sample Date/Time: 11/14/2017 09:43 Received Date/Time: 11/15/2017 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3005A	280-103614-E-1-C MSD		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103614-E-1-C MSD		280-396711	280-396509	11/27/2017 23:50	1	TAL DEN	LMT
P:3005A	280-103614-E-1-C MSD		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103614-E-1-C MSD		280-396711	280-396509	11/28/2017 01:51	1	TAL DEN	LMT
A:300.0	280-103614-A-1 MSD		280-397718		12/06/2017 18:17	1	TAL DEN	JML
A:353.2	280-103614-D-1 MSD		280-396672		11/27/2017 19:35	1	TAL DEN	SVC
A:SM 5310B	280-103614-C-1 MSD		280-397620		12/05/2017 00:23	1	TAL DEN	CCJ

Lab ID: 280-103614-1 DU

Client ID: MW-36A

Sample Date/Time: 11/14/2017 09:43 Received Date/Time: 11/15/2017 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:300.0	280-103614-A-1 DU		280-397718		12/06/2017 17:44	1	TAL DEN	JML

# Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

## Laboratory Chronicle

Lab ID: 280-103614-2

Client ID: MW-33A

Sample Date/Time: 11/14/2017 11:50 Received Date/Time: 11/15/2017 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103614-K-2		280-396651		11/27/2017 22:15	1	TAL DEN	MRM
A:8260B SIM	280-103614-K-2		280-396651		11/27/2017 22:15	1	TAL DEN	MRM
P:5030C	280-103614-G-2		480-388235		11/19/2017 15:44	1	TAL BUF	RRS
A:8260C	280-103614-G-2		480-388235		11/19/2017 15:44	1	TAL BUF	RRS
P:3005A	280-103614-F-2-A		280-396202	280-395708	11/21/2017 07:52	1	TAL DEN	CDH
A:6010D	280-103614-F-2-A		280-396202	280-395708	11/21/2017 17:43	1	TAL DEN	CRR
P:3005A	280-103614-E-2-B		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	280-103614-E-2-B		280-396876	280-396510	11/28/2017 19:50	1	TAL DEN	CML
P:3005A	280-103614-F-2-B		280-396328	280-395711	11/21/2017 07:52	1	TAL DEN	CDH
A:6020B	280-103614-F-2-B		280-396328	280-395711	11/21/2017 18:02	1	TAL DEN	LMT
P:3005A	280-103614-E-2-A		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103614-E-2-A		280-396711	280-396509	11/27/2017 23:57	1	TAL DEN	LMT
P:3005A	280-103614-E-2-A		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103614-E-2-A		280-396711	280-396509	11/28/2017 01:58	1	TAL DEN	LMT
A:300.0	280-103614-A-2		280-397718		12/06/2017 18:34	1	TAL DEN	JML
A:350.1	280-103614-D-2		280-397284		11/30/2017 19:28	1	TAL DEN	KAM
A:353.2	280-103614-A-2		280-397461		12/04/2017 13:48	1	TAL DEN	AJA
A:SM 2320B	280-103614-A-2		280-396189		11/21/2017 18:03	1	TAL DEN	A1D
A:SM 2540C	280-103614-B-2		280-395482		11/16/2017 07:33	1	TAL DEN	JAP
A:SM 2540D	280-103614-A-2		280-395606		11/16/2017 18:42	1	TAL DEN	SVC
A:SM 5310B	280-103614-D-2		280-397620		12/05/2017 00:42	1	TAL DEN	CCJ
A:Field Sampling	280-103614-A-2		280-395824		11/14/2017 12:50	1	TAL DEN	CS

Lab ID: 280-103614-2 MS

Client ID: MW-33A

Sample Date/Time: 11/14/2017 11:50 Received Date/Time: 11/15/2017 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3005A	280-103614-E-2-C MS		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	280-103614-E-2-C MS		280-396876	280-396510	11/28/2017 19:56	1	TAL DEN	CML

Lab ID: 280-103614-2 MSD

Client ID: MW-33A

Sample Date/Time: 11/14/2017 11:50 Received Date/Time: 11/15/2017 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3005A	280-103614-E-2-D MSD		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	280-103614-E-2-D MSD		280-396876	280-396510	11/28/2017 19:59	1	TAL DEN	CML



## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

### Laboratory Chronicle

Lab ID: 280-103614-3

Client ID: MW-33C

Sample Date/Time: 11/14/2017 12:48    Received Date/Time: 11/15/2017 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103614-J-3		280-396651		11/27/2017 22:33	1	TAL DEN	MRM
A:8260B SIM	280-103614-J-3		280-396651		11/27/2017 22:33	1	TAL DEN	MRM
P:5030C	280-103614-G-3		480-388235		11/19/2017 16:09	1	TAL BUF	RRS
A:8260C	280-103614-G-3		480-388235		11/19/2017 16:09	1	TAL BUF	RRS
P:3005A	280-103614-F-3-A		280-396202	280-395708	11/21/2017 07:52	1	TAL DEN	CDH
A:6010D	280-103614-F-3-A		280-396202	280-395708	11/21/2017 17:46	1	TAL DEN	CRR
P:3005A	280-103614-E-3-C		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	280-103614-E-3-C		280-396876	280-396510	11/28/2017 20:04	1	TAL DEN	CML
P:3005A	280-103614-F-3-B		280-396328	280-395711	11/21/2017 07:52	1	TAL DEN	CDH
A:6020B	280-103614-F-3-B		280-396328	280-395711	11/21/2017 18:06	1	TAL DEN	LMT
P:3005A	280-103614-E-3-A		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103614-E-3-A		280-396711	280-396509	11/28/2017 00:24	1	TAL DEN	LMT
A:300.0	280-103614-A-3		280-397718		12/06/2017 18:51	1	TAL DEN	JML
A:350.1	280-103614-D-3		280-397108		11/29/2017 12:11	1	TAL DEN	KAM
A:353.2	280-103614-A-3		280-397461		12/04/2017 13:48	1	TAL DEN	AJA
A:SM 2320B	280-103614-A-3		280-396189		11/21/2017 17:58	1	TAL DEN	A1D
A:SM 2540C	280-103614-B-3		280-395482		11/16/2017 07:33	1	TAL DEN	JAP
A:SM 2540D	280-103614-A-3		280-395606		11/16/2017 18:42	1	TAL DEN	SVC
A:SM 5310B	280-103614-D-3		280-397620		12/05/2017 00:59	1	TAL DEN	CCJ
A:Field Sampling	280-103614-A-3		280-395824		11/14/2017 13:48	1	TAL DEN	CS

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

### Laboratory Chronicle

Lab ID: 280-103614-4

Client ID: MW-15R

Sample Date/Time: 11/14/2017 14:18    Received Date/Time: 11/15/2017 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103614-K-4		280-396651		11/27/2017 22:52	1	TAL DEN	MRM
A:8260B SIM	280-103614-K-4		280-396651		11/27/2017 22:52	1	TAL DEN	MRM
P:5030C	280-103614-G-4		480-388235		11/19/2017 16:35	1	TAL BUF	RRS
A:8260C	280-103614-G-4		480-388235		11/19/2017 16:35	1	TAL BUF	RRS
P:3005A	280-103614-E-4-A		280-396202	280-395708	11/21/2017 07:52	1	TAL DEN	CDH
A:6010D	280-103614-E-4-A		280-396202	280-395708	11/21/2017 17:49	1	TAL DEN	CRR
P:3005A	280-103614-D-4-A		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	280-103614-D-4-A		280-396876	280-396510	11/28/2017 20:19	1	TAL DEN	CML
P:3005A	280-103614-E-4-B		280-396328	280-395711	11/21/2017 07:52	1	TAL DEN	CDH
A:6020B	280-103614-E-4-B		280-396328	280-395711	11/21/2017 18:10	1	TAL DEN	LMT
P:3005A	280-103614-E-4-C		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103614-E-4-C		280-396711	280-396509	11/28/2017 00:28	1	TAL DEN	LMT
A:300.0	280-103614-A-4		280-397718		12/06/2017 19:08	1	TAL DEN	JML
A:350.1	280-103614-C-4		280-397108		11/29/2017 12:13	1	TAL DEN	KAM
A:353.2	280-103614-A-4		280-397461		12/04/2017 13:48	1	TAL DEN	AJA
A:SM 2320B	280-103614-A-4		280-396189		11/21/2017 17:53	1	TAL DEN	A1D
A:SM 2540C	280-103614-B-4		280-395482		11/16/2017 07:33	1	TAL DEN	JAP
A:SM 2540D	280-103614-A-4		280-395606		11/16/2017 18:42	1	TAL DEN	SVC
A:SM 5310B	280-103614-C-4		280-397620		12/05/2017 01:47	1	TAL DEN	CCJ
A:Field Sampling	280-103614-A-4		280-395824		11/14/2017 15:18	1	TAL DEN	CS

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

### Laboratory Chronicle

Lab ID: 280-103614-5

Client ID: DUP2

Sample Date/Time: 11/14/2017 14:45    Received Date/Time: 11/15/2017 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103614-K-5		280-396651		11/27/2017 23:10	1	TAL DEN	MRM
A:8260B SIM	280-103614-K-5		280-396651		11/27/2017 23:10	1	TAL DEN	MRM
P:5030C	280-103614-G-5		480-388235		11/19/2017 17:00	1	TAL BUF	RRS
A:8260C	280-103614-G-5		480-388235		11/19/2017 17:00	1	TAL BUF	RRS
P:3005A	280-103614-E-5-A		280-396202	280-395708	11/21/2017 07:52	1	TAL DEN	CDH
A:6010D	280-103614-E-5-A		280-396202	280-395708	11/21/2017 17:51	1	TAL DEN	CRR
P:3005A	280-103614-D-5-A		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	280-103614-D-5-A		280-396876	280-396510	11/28/2017 20:22	1	TAL DEN	CML
P:3005A	280-103614-E-5-B		280-396328	280-395711	11/21/2017 07:52	1	TAL DEN	CDH
A:6020B	280-103614-E-5-B		280-396328	280-395711	11/21/2017 18:14	1	TAL DEN	LMT
P:3005A	280-103614-E-5-C		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103614-E-5-C		280-396711	280-396509	11/28/2017 00:31	1	TAL DEN	LMT
A:300.0	280-103614-A-5		280-397718		12/06/2017 19:58	1	TAL DEN	JML
A:350.1	280-103614-C-5		280-397108		11/29/2017 12:15	1	TAL DEN	KAM
A:353.2	280-103614-A-5		280-397461		12/04/2017 13:48	1	TAL DEN	AJA
A:SM 2320B	280-103614-A-5		280-396189		11/21/2017 17:48	1	TAL DEN	A1D
A:SM 2540C	280-103614-B-5		280-395482		11/16/2017 07:33	1	TAL DEN	JAP
A:SM 2540D	280-103614-A-5		280-395606		11/16/2017 18:42	1	TAL DEN	SVC
A:SM 5310B	280-103614-C-5		280-397620		12/05/2017 02:04	1	TAL DEN	CCJ

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

### Laboratory Chronicle

Lab ID: 280-103614-6

Client ID: MW-34C

Sample Date/Time: 11/14/2017 09:25    Received Date/Time: 11/15/2017 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103614-I-6		280-396651		11/27/2017 23:28	1	TAL DEN	MRM
A:8260B SIM	280-103614-I-6		280-396651		11/27/2017 23:28	1	TAL DEN	MRM
P:5030C	280-103614-G-6		480-388235		11/19/2017 17:25	1	TAL BUF	RRS
A:8260C	280-103614-G-6		480-388235		11/19/2017 17:25	1	TAL BUF	RRS
P:3005A	280-103614-E-6-A		280-396202	280-395708	11/21/2017 07:52	1	TAL DEN	CDH
A:6010D	280-103614-E-6-A		280-396202	280-395708	11/21/2017 17:54	1	TAL DEN	CRR
P:3005A	280-103614-D-6-A		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	280-103614-D-6-A		280-396876	280-396510	11/28/2017 20:25	1	TAL DEN	CML
P:3005A	280-103614-E-6-B		280-396328	280-395711	11/21/2017 07:52	1	TAL DEN	CDH
A:6020B	280-103614-E-6-B		280-396328	280-395711	11/21/2017 18:17	1	TAL DEN	LMT
P:3005A	280-103614-E-6-C		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103614-E-6-C		280-396711	280-396509	11/28/2017 00:34	1	TAL DEN	LMT
A:300.0	280-103614-A-6		280-397718		12/06/2017 20:15	1	TAL DEN	JML
A:350.1	280-103614-C-6		280-397108		11/29/2017 12:17	1	TAL DEN	KAM
A:353.2	280-103614-A-6		280-397461		12/04/2017 13:48	1	TAL DEN	AJA
A:SM 2320B	280-103614-A-6		280-396189		11/21/2017 17:43	1	TAL DEN	A1D
A:SM 2540C	280-103614-B-6		280-395482		11/16/2017 07:33	1	TAL DEN	JAP
A:SM 2540D	280-103614-A-6		280-395606		11/16/2017 18:42	1	TAL DEN	SVC
A:SM 5310B	280-103614-C-6		280-397620		12/05/2017 02:20	1	TAL DEN	CCJ
A:Field Sampling	280-103614-A-6		280-395824		11/14/2017 10:25	1	TAL DEN	CS

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

### Laboratory Chronicle

Lab ID: 280-103614-7

Client ID: MW-34A

Sample Date/Time: 11/14/2017 10:15    Received Date/Time: 11/15/2017 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103614-J-7		280-396684		11/28/2017 16:57	1	TAL DEN	MRM
A:8260B SIM	280-103614-J-7		280-396684		11/28/2017 16:57	1	TAL DEN	MRM
P:5030C	280-103614-G-7		480-388235		11/19/2017 17:50	1	TAL BUF	RRS
A:8260C	280-103614-G-7		480-388235		11/19/2017 17:50	1	TAL BUF	RRS
P:3005A	280-103614-E-7-A		280-396202	280-395708	11/21/2017 07:52	1	TAL DEN	CDH
A:6010D	280-103614-E-7-A		280-396202	280-395708	11/21/2017 17:57	1	TAL DEN	CRR
P:3005A	280-103614-D-7-A		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	280-103614-D-7-A		280-396876	280-396510	11/28/2017 20:28	1	TAL DEN	CML
P:3005A	280-103614-E-7-B		280-396328	280-395711	11/21/2017 07:52	1	TAL DEN	CDH
A:6020B	280-103614-E-7-B		280-396328	280-395711	11/21/2017 18:21	1	TAL DEN	LMT
P:3005A	280-103614-E-7-C		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103614-E-7-C		280-396711	280-396509	11/28/2017 00:38	1	TAL DEN	LMT
A:300.0	280-103614-A-7		280-397718		12/06/2017 20:32	1	TAL DEN	JML
A:350.1	280-103614-C-7		280-397108		11/29/2017 12:19	1	TAL DEN	KAM
A:353.2	280-103614-A-7		280-397461		12/04/2017 13:48	1	TAL DEN	AJA
A:SM 2320B	280-103614-A-7		280-396189		11/21/2017 17:38	1	TAL DEN	A1D
A:SM 2540C	280-103614-B-7		280-395482		11/16/2017 07:33	1	TAL DEN	JAP
A:SM 2540D	280-103614-A-7		280-395606		11/16/2017 18:42	1	TAL DEN	SVC
A:SM 5310B	280-103614-C-7		280-397620		12/05/2017 02:37	1	TAL DEN	CCJ
A:Field Sampling	280-103614-A-7		280-395824		11/14/2017 11:15	1	TAL DEN	CS

# Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

## Laboratory Chronicle

Lab ID: 280-103614-8

Client ID: DUP1

Sample Date/Time: 11/14/2017 10:25 Received Date/Time: 11/15/2017 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103614-I-8		280-396651		11/28/2017 00:04	1	TAL DEN	MRM
A:8260B SIM	280-103614-I-8		280-396651		11/28/2017 00:04	1	TAL DEN	MRM
P:5030C	280-103614-G-8		480-388235		11/19/2017 18:15	1	TAL BUF	RRS
A:8260C	280-103614-G-8		480-388235		11/19/2017 18:15	1	TAL BUF	RRS
P:3005A	280-103614-E-8-A		280-396202	280-395708	11/21/2017 07:52	1	TAL DEN	CDH
A:6010D	280-103614-E-8-A		280-396202	280-395708	11/21/2017 17:59	1	TAL DEN	CRR
P:3005A	280-103614-D-8-A		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	280-103614-D-8-A		280-396876	280-396510	11/28/2017 20:31	1	TAL DEN	CML
P:3005A	280-103614-E-8-B		280-396328	280-395711	11/21/2017 07:52	1	TAL DEN	CDH
A:6020B	280-103614-E-8-B		280-396328	280-395711	11/21/2017 18:25	1	TAL DEN	LMT
P:3005A	280-103614-E-8-C		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103614-E-8-C		280-396711	280-396509	11/28/2017 00:41	1	TAL DEN	LMT
A:300.0	280-103614-A-8		280-397718		12/06/2017 20:49	1	TAL DEN	JML
A:350.1	280-103614-C-8		280-397108		11/29/2017 12:54	1	TAL DEN	KAM
A:353.2	280-103614-A-8		280-397461		12/04/2017 13:48	1	TAL DEN	AJA
A:SM 2320B	280-103614-A-8		280-396189		11/21/2017 17:24	1	TAL DEN	A1D
A:SM 2540C	280-103614-B-8		280-395482		11/16/2017 07:33	1	TAL DEN	JAP
A:SM 2540D	280-103614-A-8		280-395606		11/16/2017 18:42	1	TAL DEN	SVC
A:SM 5310B	280-103614-C-8		280-397620		12/05/2017 02:54	1	TAL DEN	CCJ

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

### Laboratory Chronicle

Lab ID: 280-103614-9

Client ID: MW-43

Sample Date/Time: 11/13/2017 16:18      Received Date/Time: 11/15/2017 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103614-I-9		280-396651		11/27/2017 20:45	1	TAL DEN	MRM
A:8260B SIM	280-103614-I-9		280-396651		11/27/2017 20:45	1	TAL DEN	MRM
P:5030C	280-103614-F-9		480-388239		11/19/2017 13:27	1	TAL BUF	RRS
A:8260C	280-103614-F-9		480-388239		11/19/2017 13:27	1	TAL BUF	RRS
P:3005A	280-103614-E-9-A		280-396202	280-395708	11/21/2017 07:52	1	TAL DEN	CDH
A:6010D	280-103614-E-9-A		280-396202	280-395708	11/21/2017 18:02	1	TAL DEN	CRR
P:3005A	280-103614-D-9-A		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	280-103614-D-9-A		280-396876	280-396510	11/28/2017 20:34	1	TAL DEN	CML
P:3005A	280-103614-E-9-B		280-396328	280-395711	11/21/2017 07:52	1	TAL DEN	CDH
A:6020B	280-103614-E-9-B		280-396328	280-395711	11/21/2017 18:36	1	TAL DEN	LMT
P:3005A	280-103614-E-9-C		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103614-E-9-C		280-396711	280-396509	11/28/2017 00:45	1	TAL DEN	LMT
A:300.0	280-103614-A-9		280-397718		12/06/2017 21:05	1	TAL DEN	JML
A:350.1	280-103614-C-9		280-397108		11/29/2017 12:56	1	TAL DEN	KAM
A:353.2	280-103614-C-9		280-396672		11/27/2017 20:03	1	TAL DEN	SVC
A:353.2	280-103614-A-9		280-397461		12/04/2017 13:48	1	TAL DEN	AJA
A:SM 2320B	280-103614-A-9		280-396190		11/21/2017 20:26	1	TAL DEN	A1D
A:SM 2540C	280-103614-B-9		280-395482		11/16/2017 07:33	1	TAL DEN	JAP
A:SM 2540D	280-103614-A-9		280-395606		11/16/2017 18:42	1	TAL DEN	SVC
A:SM 5310B	280-103614-C-9		280-397620		12/05/2017 03:10	1	TAL DEN	CCJ
A:Field Sampling	280-103614-A-9		280-395824		11/13/2017 17:18	1	TAL DEN	CS

# Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

## Laboratory Chronicle

Lab ID: 280-103614-10

Client ID: MW-19C

Sample Date/Time: 11/13/2017 17:00 Received Date/Time: 11/15/2017 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103614-I-10		280-396651		11/27/2017 21:03	1	TAL DEN	MRM
A:8260B SIM	280-103614-I-10		280-396651		11/27/2017 21:03	1	TAL DEN	MRM
P:5030C	280-103614-G-10		480-388239		11/19/2017 13:51	1	TAL BUF	RRS
A:8260C	280-103614-G-10		480-388239		11/19/2017 13:51	1	TAL BUF	RRS
P:3005A	280-103614-F-10-A		280-396202	280-395708	11/21/2017 07:52	1	TAL DEN	CDH
A:6010D	280-103614-F-10-A		280-396202	280-395708	11/21/2017 18:05	1	TAL DEN	CRR
P:3005A	280-103614-E-10-B		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	280-103614-E-10-B		280-396876	280-396510	11/28/2017 20:37	1	TAL DEN	CML
P:3005A	280-103614-F-10-B		280-396328	280-395711	11/21/2017 07:52	1	TAL DEN	CDH
A:6020B	280-103614-F-10-B		280-396328	280-395711	11/21/2017 18:40	1	TAL DEN	LMT
P:3005A	280-103614-E-10-A		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103614-E-10-A		280-396711	280-396509	11/28/2017 00:48	1	TAL DEN	LMT
A:300.0	280-103614-A-10		280-397718		12/06/2017 21:22	1	TAL DEN	JML
A:350.1	280-103614-C-10		280-397108		11/29/2017 12:58	1	TAL DEN	KAM
A:353.2	280-103614-C-10		280-396672		11/27/2017 20:05	1	TAL DEN	SVC
A:353.2	280-103614-A-10		280-397461		12/04/2017 16:19	1	TAL DEN	AJA
A:SM 2320B	280-103614-A-10		280-396190		11/21/2017 20:21	1	TAL DEN	A1D
A:SM 2540C	280-103614-B-10		280-395482		11/16/2017 07:33	1	TAL DEN	JAP
A:SM 2540D	280-103614-A-10		280-395606		11/16/2017 18:42	1	TAL DEN	SVC
A:SM 5310B	280-103614-C-10		280-397620		12/05/2017 03:27	1	TAL DEN	CCJ
A:Field Sampling	280-103614-A-10		280-395824		11/13/2017 18:00	1	TAL DEN	CS

Lab ID: 280-103614-10 MS

Client ID: MW-19C

Sample Date/Time: 11/13/2017 17:00 Received Date/Time: 11/15/2017 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:350.1	280-103614-C-10 MS		280-397108		11/29/2017 13:00	1	TAL DEN	KAM

Lab ID: 280-103614-10 MSD

Client ID: MW-19C

Sample Date/Time: 11/13/2017 17:00 Received Date/Time: 11/15/2017 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:350.1	280-103614-C-10 MSD		280-397108		11/29/2017 13:02	1	TAL DEN	KAM

Lab ID: 280-103614-10 DU

Client ID: MW-19C

Sample Date/Time: 11/13/2017 17:00 Received Date/Time: 11/15/2017 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:SM 2540C	280-103614-B-10 DU		280-395482		11/16/2017 07:33	1	TAL DEN	JAP
A:SM 2540D	280-103614-A-10 DU		280-395606		11/16/2017 18:42	1	TAL DEN	SVC



## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

### Laboratory Chronicle

Lab ID: 280-103614-11

Client ID: TRIP BLANK

Sample Date/Time: 11/14/2017 00:00      Received Date/Time: 11/15/2017 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103614-C-11		280-396684		11/28/2017 17:15	1	TAL DEN	MRM
A:8260B SIM	280-103614-C-11		280-396684		11/28/2017 17:15	1	TAL DEN	MRM
P:5030C	280-103614-A-11		480-388235		11/19/2017 18:40	1	TAL BUF	RRS
A:8260C	280-103614-A-11		480-388235		11/19/2017 18:40	1	TAL BUF	RRS

Lab ID: MB

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	MB 280-396651/8		280-396651		11/27/2017 18:39	1	TAL DEN	MRM
A:8260B SIM	MB 280-396651/8		280-396651		11/27/2017 18:39	1	TAL DEN	MRM
P:5030C	MB 480-388239/6		480-388239		11/19/2017 10:31	1	TAL BUF	RRS
A:8260C	MB 480-388239/6		480-388239		11/19/2017 10:31	1	TAL BUF	RRS
P:5030C	MB 480-388235/6		480-388235		11/19/2017 13:43	1	TAL BUF	RRS
A:8260C	MB 480-388235/6		480-388235		11/19/2017 13:43	1	TAL BUF	RRS
P:3005A	MB 280-395708/1-A		280-396202	280-395708	11/21/2017 07:52	1	TAL DEN	CDH
A:6010D	MB 280-395708/1-A		280-396202	280-395708	11/21/2017 17:10	1	TAL DEN	CRR
P:3005A	MB 280-396510/1-A		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	MB 280-396510/1-A		280-396876	280-396510	11/28/2017 19:41	1	TAL DEN	CML
P:3005A	MB 280-395711/1-A		280-396328	280-395711	11/21/2017 07:52	1	TAL DEN	CDH
A:6020B	MB 280-395711/1-A		280-396328	280-395711	11/21/2017 17:17	1	TAL DEN	LMT
P:3005A	MB 280-396509/1-A		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	MB 280-396509/1-A		280-396711	280-396509	11/27/2017 23:33	1	TAL DEN	LMT
P:3005A	MB 280-396509/1-A		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	MB 280-396509/1-A		280-396711	280-396509	11/28/2017 01:33	1	TAL DEN	LMT
A:300.0	MB 280-397718/6		280-397718		12/06/2017 12:29	1	TAL DEN	JML
A:350.1	MB 280-397108/20		280-397108		11/29/2017 11:59	1	TAL DEN	KAM
A:350.1	MB 280-397284/20		280-397284		11/30/2017 18:52	1	TAL DEN	KAM
A:353.2	MB 280-396672/66		280-396672		11/27/2017 18:53	1	TAL DEN	SVC
A:353.2	MB 280-396846/110		280-396846		11/28/2017 20:54	1	TAL DEN	SVC
A:353.2	MB 280-397461/1		280-397461		12/04/2017 13:48	1	TAL DEN	AJA
A:SM 2320B	MB 280-396189/5		280-396189		11/21/2017 16:43	1	TAL DEN	A1D
A:SM 2320B	MB 280-396190/31		280-396190		11/21/2017 19:29	1	TAL DEN	A1D
A:SM 2320B	MB 280-396376/5		280-396376		11/22/2017 13:07	1	TAL DEN	A1D
A:SM 2540C	MB 280-395482/1		280-395482		11/16/2017 07:33	1	TAL DEN	JAP
A:SM 2540D	MB 280-395606/2		280-395606		11/16/2017 18:42	1	TAL DEN	SVC
A:SM 5310B	MB 280-397620/13		280-397620		12/04/2017 19:15	1	TAL DEN	CCJ

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

### Laboratory Chronicle

Lab ID: LCS

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	LCS 280-396651/6		280-396651		11/27/2017 18:21	1	TAL DEN	MRM
A:8260B SIM	LCS 280-396651/6		280-396651		11/27/2017 18:21	1	TAL DEN	MRM
P:5030B	LCS 280-396684/4		280-396684		11/28/2017 08:30	1	TAL DEN	MRM
A:8260B SIM	LCS 280-396684/4		280-396684		11/28/2017 08:30	1	TAL DEN	MRM
P:5030B	LCS 280-396684/6		280-396684		11/28/2017 16:03	1	TAL DEN	MRM
A:8260B SIM	LCS 280-396684/6		280-396684		11/28/2017 16:03	1	TAL DEN	MRM
P:5030C	LCS 480-388239/4		480-388239		11/19/2017 09:43	1	TAL BUF	RRS
A:8260C	LCS 480-388239/4		480-388239		11/19/2017 09:43	1	TAL BUF	RRS
P:5030C	LCS 480-388235/4		480-388235		11/19/2017 12:52	1	TAL BUF	RRS
A:8260C	LCS 480-388235/4		480-388235		11/19/2017 12:52	1	TAL BUF	RRS
P:3005A	LCS 280-395708/2-A		280-396202	280-395708	11/21/2017 07:52	1	TAL DEN	CDH
A:6010D	LCS 280-395708/2-A		280-396202	280-395708	11/21/2017 17:13	1	TAL DEN	CRR
P:3005A	LCS 280-396510/2-A		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	LCS 280-396510/2-A		280-396876	280-396510	11/28/2017 19:44	1	TAL DEN	CML
P:3005A	LCS 280-395711/2-A		280-396328	280-395711	11/21/2017 07:52	1	TAL DEN	CDH
A:6020B	LCS 280-395711/2-A		280-396328	280-395711	11/21/2017 17:20	1	TAL DEN	LMT
P:3005A	LCS 280-396509/2-A		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	LCS 280-396509/2-A		280-396711	280-396509	11/27/2017 23:36	1	TAL DEN	LMT
P:3005A	LCS 280-396509/2-A		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	LCS 280-396509/2-A		280-396711	280-396509	11/28/2017 01:37	1	TAL DEN	LMT
A:300.0	LCS 280-397718/4		280-397718		12/06/2017 11:56	1	TAL DEN	JML
A:350.1	LCS 280-397108/18		280-397108		11/29/2017 11:55	1	TAL DEN	KAM
A:350.1	LCS 280-397284/18		280-397284		11/30/2017 18:48	1	TAL DEN	KAM
A:353.2	LCS 280-396672/65		280-396672		11/27/2017 18:51	1	TAL DEN	SVC
A:353.2	LCS 280-396846/109		280-396846		11/28/2017 20:52	1	TAL DEN	SVC
A:SM 2320B	LCS 280-396189/4		280-396189		11/21/2017 16:39	1	TAL DEN	A1D
A:SM 2320B	LCS 280-396190/30		280-396190		11/21/2017 19:22	1	TAL DEN	A1D
A:SM 2320B	LCS 280-396376/4		280-396376		11/22/2017 13:03	1	TAL DEN	A1D
A:SM 2540C	LCS 280-395482/2		280-395482		11/16/2017 07:33	1	TAL DEN	JAP
A:SM 2540D	LCS 280-395606/1		280-395606		11/16/2017 18:42	1	TAL DEN	SVC
A:SM 5310B	LCS 280-397620/12		280-397620		12/04/2017 18:56	1	TAL DEN	CCJ

Lab ID: LCSD

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:300.0	LCSD 280-397718/5		280-397718		12/06/2017 12:12	1	TAL DEN	JML
A:350.1	LCSD 280-397108/19		280-397108		11/29/2017 11:57	1	TAL DEN	KAM
A:350.1	LCSD 280-397284/19		280-397284		11/30/2017 18:50	1	TAL DEN	KAM

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

### Laboratory Chronicle

Lab ID: MRL

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:300.0	MRL 280-397718/3		280-397718		12/06/2017 11:39	1	TAL DEN	JML

Lab ID: MS

Client ID: N/A

Sample Date/Time: 11/13/2017 11:21

Received Date/Time: 11/14/2017 08:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103543-J-1 MS		280-396651		11/27/2017 21:21	1	TAL DEN	MRM
A:8260B SIM	280-103543-J-1 MS		280-396651		11/27/2017 21:21	1	TAL DEN	MRM
P:5030B	280-103795-A-7 MS		280-396684		11/28/2017 11:15	1	TAL DEN	MRM
A:8260B SIM	280-103795-A-7 MS		280-396684		11/28/2017 11:15	1	TAL DEN	MRM
P:5030C	480-127483-T-3 MS		480-388239		11/19/2017 17:49	40	TAL BUF	RRS
A:8260C	480-127483-T-3 MS		480-388239		11/19/2017 17:49	40	TAL BUF	RRS
P:5030C	480-127530-M-1 MS		480-388235		11/19/2017 22:01	5	TAL BUF	RRS
A:8260C	480-127530-M-1 MS		480-388235		11/19/2017 22:01	5	TAL BUF	RRS
P:3005A	280-103420-A-6-B MS		280-396202	280-395708	11/21/2017 07:52	1	TAL DEN	CDH
A:6010D	280-103420-A-6-B MS		280-396202	280-395708	11/21/2017 17:23	1	TAL DEN	CRR
P:3005A	280-103420-A-6-E MS		280-396328	280-395711	11/21/2017 07:52	1	TAL DEN	CDH
A:6020B	280-103420-A-6-E MS		280-396328	280-395711	11/21/2017 17:36	1	TAL DEN	LMT
A:350.1	280-103653-B-1 MS		280-397284		11/30/2017 18:56	1	TAL DEN	KAM
A:353.2	280-103656-B-2 MS		280-396846		11/28/2017 20:58	1	TAL DEN	SVC

## Quality Control Results

Client: Waste Management

Job Number: 280-103614-1

### Laboratory Chronicle

Lab ID: MSD

Client ID: N/A

Sample Date/Time: 11/13/2017 11:21    Received Date/Time: 11/14/2017 08:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103543-J-1 MSD		280-396651		11/27/2017 21:39	1	TAL DEN	MRM
A:8260B SIM	280-103543-J-1 MSD		280-396651		11/27/2017 21:39	1	TAL DEN	MRM
P:5030B	280-103795-A-7 MSD		280-396684		11/28/2017 11:33	1	TAL DEN	MRM
A:8260B SIM	280-103795-A-7 MSD		280-396684		11/28/2017 11:33	1	TAL DEN	MRM
P:5030C	480-127483-T-3 MSD		480-388239		11/19/2017 18:13	40	TAL BUF	RRS
A:8260C	480-127483-T-3 MSD		480-388239		11/19/2017 18:13	40	TAL BUF	RRS
P:5030C	480-127530-M-1 MSD		480-388235		11/19/2017 22:27	5	TAL BUF	RRS
A:8260C	480-127530-M-1 MSD		480-388235		11/19/2017 22:27	5	TAL BUF	RRS
P:3005A	280-103420-A-6-C MSD		280-396202	280-395708	11/21/2017 07:52	1	TAL DEN	CDH
A:6010D	280-103420-A-6-C MSD		280-396202	280-395708	11/21/2017 17:25	1	TAL DEN	CRR
P:3005A	280-103420-A-6-F MSD		280-396328	280-395711	11/21/2017 07:52	1	TAL DEN	CDH
A:6020B	280-103420-A-6-F MSD		280-396328	280-395711	11/21/2017 17:39	1	TAL DEN	LMT
A:350.1	280-103653-B-1 MSD		280-397284		11/30/2017 18:58	1	TAL DEN	KAM
A:353.2	280-103656-B-2 MSD		280-396846		11/28/2017 21:00	1	TAL DEN	SVC

Lab ID: DU

Client ID: N/A

Sample Date/Time: 11/14/2017 07:50    Received Date/Time: 11/15/2017 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:SM 2320B	280-103615-A-3 DU		280-396189		11/21/2017 16:52	1	TAL DEN	A1D
A:SM 2320B	280-103555-C-2 DU		280-396190		11/21/2017 19:42	1	TAL DEN	A1D
A:SM 2320B	280-103734-A-2 DU		280-396376		11/22/2017 13:20	1	TAL DEN	A1D

**Lab References:**

TAL BUF = TestAmerica Buffalo

TAL DEN = TestAmerica Denver

Chain of Custody Record

B113 9351 2540  
4150 9259 2503

<b>Client Information</b> Client Contact: Mr. Patrick Madej Company: Waste Management Address: 2615 Davis Street City: San Leandro State, Zip: CA, 94577 Phone: 612 940 2980 Email: Spentard@sensuinc.com		Lab PM: Sara, Betsy A E-Mail: betsy.sara@testamericainc.com Carrier Tracking No(s): 4150 9259 2514 4150 9259 2525 Page: 1 of 1 Job #: 01204027.20	
Due Date Requested: Standard TAT Requested (days): PO #: WO #: Project #: 28002692 SSOV #:		COC No: 280-17318-3224.1 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 Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)	
Project Name: WA02(Olympic View Sanitary LF) Event Desc: Quarterly GW App/II - Mar Jun Sep Dec Site: Washington		Special Instructions/Note: Short Hold: NO3(cad) Arsenic - Direct sub to ARI * Samples collected on 11/13/17. Hold time for Nitrate expires after 48 hrs. ** Please run semi-annual samples for exact same analytes as regular samples	
Sample Identification MW-36A ** MW-33A ** MW-33C ** MW-15R Dup 2 MW-34C MW-34A Dup 1 MW-43 * MW-19C * * * Tap blank		Total Number of containers: 3	
Sample Date: 11/14/17 Sample Time: 943 1150 1248 1418 1445 425 605 1025 11/13/17 1618 11/13/17 1700 11/14/17 -		Field Filtered Sample (Yes or No): Perform M/MSD (Yes or No): TDS/Alks/Cl/SO4/NO3(cad): Dissolved Metals: Ammonia/TOC 8260B - long list (TA Buffalo) 8260B SIM (TA Buffalo) Total Metals: TSS Total Arsenic (direct sub to ARI)	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirements:	
Empty Kit Relinquished by:		Method of Shipment:	
Relinquished by: [Signature] Date/Time: 11/14/17 1600 Company: SES		Received by: [Signature] Date/Time: 11-15-17 0950 Company: TAD	
Relinquished by: [Signature] Date/Time: Company:		Received by: Date/Time: Company:	
Relinquished by: Date/Time: Company:		Received by: Date/Time: Company:	
Custody Seals Intact: A Yes A No		Custody Seal No.: 148203, 148204, 148205, 148206 Cooler Temperature(s) °C and Other Remarks: 2.3, 0.6, 0.5, 1.9, 10.5 IRIS transferred by ST 11-19-17	

# FIELD INFORMATION FORM



Site Name: asc  
 Site No.:       
 Sample Point: 4W-36A  
 Sample ID:     

**This Waste Management Field Information Form is Required.**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:     

**PURGE INFO**

PURGE DATE (MM DD YY) <u>11/14/17</u>	PURGE TIME (2400 Hr Clock) <u>9:43</u>	ELAPSED HRS (hrs:min) <u>20</u>	WATER VOL IN CASING (Gallons) <u>    </u>	ACTUAL VOL PURGED (Gallons) <u>    </u>	WELL VOL PURGED <u>    </u>
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*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**

Purging and Sampling Equipment... Dedicated:  Y or  N

Filter Device:  Y or  N 0.45 μ or      μ (circle or fill in)

Purging Device:  C A-Submersible Pump  D-Bailer  
 B-Peristaltic Pump  E-Piston Pump  
 Sampling Device:  C C-QED Bladder Pump  F-Dipper/Bottle  
 X-Other:     

Filter Type:  A  
 B-Pressure  C-Vacuum  
 X-Other:     

Sample Tube Type:  D  
 A-Teflon  C-PVC  X-Other:       
 B-Stainless Steel  D-Polypropylene

**WELL DATA**

Well Elevation (at TOC):      (ft/msl)      Depth to Water (DTW) (from TOC) 310.5 (ft) \*      Groundwater Elevation (site datum, from TOC):      (ft/msl)

Total Well Depth (from TOC):      (ft)      Stick Up (from ground elevation):      (ft)      Casing ID 0.2 (in)      Casing Material PVC

*Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate (gpm)	pH (std)	Conductance (SC/EC) (μmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
<u>9:23</u>	<u>350</u>	<u>5.91</u>	<u>123</u>	<u>9.60</u>		<u>12.89</u>	<u>1760</u>	
<u>9:28</u>		<u>5.90</u>	<u>122</u>	<u>9.60</u>		<u>13.25</u>	<u>1760</u>	
<u>9:31</u>		<u>5.89</u>	<u>123</u>	<u>9.60</u>		<u>13.54</u>	<u>1760</u>	
<u>9:34</u>		<u>5.92</u>	<u>123</u>	<u>9.60</u>		<u>13.19</u>	<u>1760</u>	
<u>9:37</u>		<u>5.94</u>	<u>123</u>	<u>9.58</u>		<u>12.78</u>	<u>1760</u>	
<u>9:40</u>		<u>5.92</u>	<u>123</u>	<u>9.60</u>		<u>13.23</u>	<u>1760</u>	
<u>9:43</u>		<u>5.91</u>	<u>123</u>	<u>9.60</u>	<u>3.22</u>	<u>13.38</u>	<u>1760</u>	<u>310.2</u>

Suggested range for 3 consec. readings or note Permit/State requirements:  
 pH: +/- 0.2      Conductance: +/- 3%      D.O.: +/- 10%      eH/ORP: +/- 25 mV      DTW: Stabilize

**Final Field Readings are required** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (μmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units
<u>11/14/17</u>	<u>5.91</u>	<u>123</u>	<u>9.60</u>	<u>3.22</u>	<u>3.38</u>	<u>1760</u>	<u>1760</u> <u>310.2</u>

**Sample Appearance:** Clear      **Odor:** None      **Color:**         **Other:**   

**Weather Conditions** (required daily, or as conditions change):      **Direction/Speed:**         **Outlook:** Cloudy      **Precipitation:**  Y or  N

**Specific Comments (including purge/well volume calculations if required):**   

**FIELD COMMENTS**

I used glass solinst w/ meter

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

11/14/17      Sara Graber      [Signature]      SCS

Date      Name      Signature      Company

# FIELD INFORMATION FORM



Site Name: 05C  
 Site No.:       
 Sample Point: MW-33A  
 Sample ID:     

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:     

**PURGE INFO**

PURGE DATE (MM DD YY): 11 17  
 PURGE TIME (2400 Hr Clock): 130  
 ELAPSED HRS (hrs:min): 20  
 WATER VOL IN CASING (Gallons):       
 ACTUAL VOL PURGED (Gallons):       
 WELL VOLS PURGED:     

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**

Purging and Sampling Equipment... Dedicated:  or  N

Filter Device:  or  N 0.45 µ or      µ (circle or fill in)

Purging Device:  C A-Submersible Pump D-Bailer  
 B-Peristaltic Pump E-Piston Pump  
 F-Dipper/Bottle

Filter Type:  A  
 B-Pressure X-Other:     

Sampling Device:  C C-QED Bladder Pump F-Dipper/Bottle

X-Other:      Sample Tube Type:  D  
 A-Teflon C-PVC X-Other:       
 B-Stainless Steel D-Polypropylene

**WELL DATA**

Well Elevation (at TOC):      (ft/msl) Depth to Water (DTW) (from TOC): 402 \* (ft) Groundwater Elevation (site datum, from TOC):      (ft/msl)

Total Well Depth (from TOC):      (ft) Stick Up (from ground elevation):      (ft) Casing ID: 02 (in) Casing Material: PVC

*Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate/Unit (ml/min)	pH (std)	Conductance (SC/EC) (µmhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
11:30	360	6.40	183	9.42		11.46	630	
11:35		6.18	81	9.79		11.14	610	
11:38		6.17	80	9.69		11.16	680	
11:41		6.19	91	9.64		10.75	570	
11:44		6.21	97	9.62		10.43	500	
11:47		6.31	110	9.60		10.43	450	
11:50	V	6.33	109	9.60	386	10.39	520	640

*Suggested range for 3 consec. readings or note Permit/State requirements:*  
 pH: +/- 0.2    Conductance: +/- 3%    Temp: --    Turbidity: --    D.O.: +/- 10%    eH/ORP: +/- 25 mV    DTW: Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/State. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are used, use separate sheet or form.

**FIELD DATA**

SAMPLE DATE (MM DD YY): 11 17 pH (std): 6.33 CONDUCTANCE (µmhos/cm @ 25°C): 109 TEMP. (°C): 9.60 TURBIDITY (ntu): 386 DO (mg/L-ppm): 0.39 eH/ORP (mV): 520 Other: DTW  
 Units: FT

*Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/State).*

Sample Appearance: Clear Odor: None Color:      Other:       
 Weather Conditions (required daily, or as conditions change):      Direction/Speed:      Outlook: cloudy Precipitation: Y or  N

Specific Comments (including purge/well volume calculations if required):  
\* used back against well meter

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
11, 14, 17 Sum Graber [Signature] SCS  
 Date Name Signature Company





# FIELD INFORMATION FORM



Site Name: 25C  
 Site No.: 111417  
 Sample Point: MW-1512  
 Sample ID: \_\_\_\_\_

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID: \_\_\_\_\_

**PURGE INFO**  
 PURGE DATE (MM DD YY): 11/14/17  
 PURGE TIME (2400 Hr Clock): 1358  
 ELAPSED HRS (hrs:min): 20  
 WATER VOL IN CASING (Gallons): \_\_\_\_\_  
 ACTUAL VOL PURGED (Gallons): \_\_\_\_\_  
 WELL VOL PURGED: \_\_\_\_\_

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment ... Dedicated:  Y or  N  
 Purging Device: C A-Submersible Pump D-Bailer  
 B-Peristaltic Pump E-Piston Pump  
 Sampling Device: C C-QED Bladder Pump F-Dipper/Bottle  
 X-Other: \_\_\_\_\_  
 Filter Device:  Y or  N 0.45 µ or \_\_\_\_\_ µ (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other \_\_\_\_\_  
 Sample Tube Type: D A-Teflon C-PVC X-Other: \_\_\_\_\_  
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC) \_\_\_\_\_ (ft/msl)  
 Depth to Water (DTW) (from TOC) X 11877 (ft)  
 Groundwater Elevation (site datum, from TOC) \_\_\_\_\_ (ft/msl)  
 Total Well Depth (from TOC) \_\_\_\_\_ (ft)  
 Stick Up (from ground elevation) \_\_\_\_\_ (ft)  
 Casing ID 02 (in) Casing Material PVC  
 Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate (Unit)	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
13:58	390	7.27	1153	10.14		12.96	930	
14:03		6.98	1153	10.16		11.41	1010	
14:06		6.71	1152	10.18		10.93	1080	
14:09		6.62	1151	10.13		10.89	1130	
14:12		6.57	1152	10.18		10.86	1140	
14:15		6.52	1152	10.19		10.65	1170	
14:18	V	6.51	1152	10.19		10.67	1180	118.90

Suggested range for 3 consec. readings or note Permit/State requirements:  
 pH: +/- 0.2  
 Conductance: +/- 3%  
 D.O.: +/- 10%  
 eH/ORP: +/- 25 mV  
 DTW: Stabilize

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 11/14/17  
 pH (std): 6.51  
 CONDUCTANCE (µmhos/cm @ 25°C): 152  
 TEMP. (°C): 10.19  
 TURBIDITY (ntu): 1.14  
 DO (mg/L - ppm): 0.67  
 eH/ORP (mV): 118.0  
 Other: DTW  
 Units: ft  
 Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/State).

Sample Appearance: Clear Odor: None Color: \_\_\_\_\_ Other: \_\_\_\_\_  
 Weather Conditions (required daily, or as conditions change): \_\_\_\_\_ Direction/Speed: 5 mph @ SW Outlook: Cloudy Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):  
Dup 2 collected here @ 14:15  
\* used back against well meter

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
11/14/17 Sam Graber \_\_\_\_\_ 25C  
 Date Name Signature Company

# FIELD INFORMATION FORM



Site Name: WVSL

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID: \_\_\_\_\_

Site No.: \_\_\_\_\_  
 Sample Point: MW-34C  
 Sample ID

**PURGE INFO**

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOL PURGED
<u>11/14/17</u>	<u>8:50</u>	<u>085</u>			

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ "Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged". Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**

Purging and Sampling Equipment... Dedicated:  Y or  N

Filter Device:  Y or  N | 0.45  $\mu$  or \_\_\_\_\_  $\mu$  (circle or fill in)

Purging Device: C A-Submersible Pump D-Bailer  
 B-Peristaltic Pump E-Piston Pump  
 Sampling Device: C C-QED Bladder Pump F-Dipper/Bottle  
 X-Other: \_\_\_\_\_

Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other \_\_\_\_\_

Sample Tube Type: D A-Teflon C-PVC X-Other: \_\_\_\_\_  
 B-Stainless Steel D-Polypropylene

**WELL DATA**

Well Elevation (at TOC) \_\_\_\_\_ (ft/mst)      Depth to Water (DTW) (from TOC) 4134 (ft)      Groundwater Elevation (site datum, from TOC) \_\_\_\_\_ (ft/mst)

Total Well Depth (from TOC) \_\_\_\_\_ (ft)      Stick Up (from ground elevation) \_\_\_\_\_ (ft)      Casing ID \_\_\_\_\_ (in)      Casing Material \_\_\_\_\_

*Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate (Unit)	pH (std)	Conductance (SC/EC) ( $\mu$ mhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
8:50	350	6.60	1232	12.79		1056	1823	
8:55		6.41	1232	12.92		1038	1667	
8:58		6.55	1232	12.95		1034	3418	
9:01		6.57	1232	12.96	2.01	032	119.0	
9:04		6.58	1232	12.96		1028	1105	
9:07		6.58	1232	13.00		1028	121	
9:10		6.59	1232	12.99	1.98	028	-113	
9:15		6.59	1232	12.97	2.17	0162	117	
9:20		6.61	1232	12.97	2.28	026	-176	
9:25		6.61	1232	13.01	1.58	1026	-89	4139

*Suggested range for 3 consec. readings or note Permit/State requirements:*  
 pH:  $\pm 0.2$       Conductance:  $\pm 3\%$       D.O.:  $\pm 10\%$       eH/ORP:  $\pm 25$  mV      DTW: Stabilize

*Stabilization Data Fields are Optional (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be fixed where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

**FIELD DATA**

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE ( $\mu$ mhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: <u>OW</u>
<u>11/14/17</u>	<u>6.61</u>	<u>1232</u>	<u>13.01</u>	<u>1.58</u>	<u>026</u>	<u>-89</u>	Units: <u>ft</u>

*Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).*

Sample Appearance: cloudy      Odor: \_\_\_\_\_      Color: orange      Other: \_\_\_\_\_

Weather Conditions (required daily, or as conditions change): \_\_\_\_\_      Direction/Speed: \_\_\_\_\_      Outlook: cloudy/rainy      Precipitation:  Y or  N

Specific Comments (including purge/well volume calculations if required): \_\_\_\_\_

**FIELD COMMENTS**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

11/14/17      Alexa Deep      Alexa Deep      SCS

Date      Name      Signature      Company

# FIELD INFORMATION FORM



Site Name: 0V57  
 Site No.:     

Sample Point: MW-34A  
 Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:     

**PURGE INFO**  
 PURGE DATE (MM DD YY): 11/14/17 PURGE TIME (2400 Hr Clock): 9:55 ELAPSED HRS (hrs:min): 02:01  
 WATER VOL IN CASING (Gallons):      ACTUAL VOL PURGED (Gallons):      WELL VOL PURGED (Gallons):     

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  Y or  N  
 Purging Device:  C (A-Submersible Pump)  D-Bailer  
 Sampling Device:  C (B-Peristaltic Pump)  E-Piston Pump  
 X-Other:      C-QED Bladder Pump F-Dipper/Bottle  
 Filter Device:  Y or  N 0.45  $\mu$  or       $\mu$  (circle or fill in)  
 Filter Type:  A (A-In-line Disposable)  C-Vacuum  
 B-Pressure X-Other:       
 Sample Tube Type:  D (A-Teflon)  C-PVC X-Other:       
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC):      (ft/msl) Depth to Water (DTW) (from TOC): 39.9 (ft) Groundwater Elevation (site datum, from TOC):      (ft/msl)  
 Total Well Depth (from TOC):      (ft) Stick Up (from ground elevation):      (ft) Casing ID (in):      Casing Material:     

Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

Sample Time (2400 Hr Clock)	Rate (gpm)	pH (std)	Conductance (SC/EC) ( $\mu$ mhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
11/14/17 9:55	300	6.12	1201	12.35		0.51	71.3	
10:00		5.96	172	12.29		0.32	87.7	
10:03		5.93	171	12.27		0.30	92.6	
10:06		5.91	170	12.28		0.29	97.7	
10:09		5.91	169	12.28		0.38	102.2	
10:12		5.90	163	12.27		0.59	106.2	
10:15		5.89	162	12.25		0.69	110.2	39.5

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, D.O. +/- 10%, eH/ORP +/- 25 mV, Stabilize

Stabilization Data Fields are Optional (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 11/14/17 pH (std): 5.89 CONDUCTANCE ( $\mu$ mhos/cm @ 25°C): 162 TEMP. (°C): 12.25 TURBIDITY (ntu): 1.66 DO (mg/L-ppm): 0.69 eH/ORP (mV): 110.2 Other: DTW  
 Units: ft

Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: clear Odor:      Color:      Other:       
 Weather Conditions (required daily, or as conditions change):      Direction/Speed:      Outlook: 10M Precipitation:  Y or  N

Specific Comments (including purge/well volume calculations if required):  
DUP taken at 10:25

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
11/14/17 Alexa Deep Amy Deep SCS  
 Date Name Signature Company

# FIELD INFORMATION FORM



Site Name: OVSL  
 Site No.:       
 Sample Point: MM-431  
 Sample ID:     

**This Waste Management Field Information Form is Required.**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers. (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:     

**PURGE INFO**  
 PURGE DATE (MM DD YY): 11/13/17 PURGE TIME (2400 Hr Clock): 1558 ELAPSED HRS (hrs:min): 20  
 WATER VOL IN CASING (Gallons):      ACTUAL VOL PURGED (Gallons):      WELL VOLs PURGED:     

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  Y or  N Filter Device:  Y or  N 0.45 µ or      µ (circle or fill in)  
 Purging Device: C A-Submersible Pump D-Bailer Filter Type: A A-In-line Disposable C-Vacuum  
 B-Peristaltic Pump B-Piston Pump B-Pressure X-Other  
 Sampling Device: C C-QED Bladder Pump F-Dipper/Bottle Sample Tube Type: D A-Teflon C-PVC X-Other:  
 X-Other:      B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC):      (ft/mst) Depth to Water (DTW) (from TOC): 290.4 (ft) Groundwater Elevation (site datum, from TOC):      (ft/mst)  
 Total Well Depth (from TOC):      (ft) Stick Up (from ground elevation):      (ft) Casing ID:      (in) Casing Material:       
 Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

Sample Time (2400 Hr Clock)	Rate/Unit (ml/min)	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
11/15/17	500	6.57	52	11.27		0.95	182.7	
11/16/17	1	5.89	51	11.26		0.77	180.5	
11/16/17	1	5.76	51	11.27		0.78	191.7	
11/16/17	1	5.70	51	11.27		0.80	110.15	
11/16/17	1	5.65	51	11.25		0.80	110.82	
11/16/17	1	5.63	50	11.25		0.80	111.40	
11/16/17	1	5.62	50	11.27	2.25	0.80	111.87	21.20

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 11/13/17 pH (std): 5.62 CONDUCTANCE (µmhos/cm @ 25°C): 50 TEMP. (°C): 11.27 TURBIDITY (ntu): 2.25 DO (mg/L - ppm): 0.80 eH/ORP (mV): 118.7 Other: DTW  
 Units: ft

Sample Appearance: Clear Odor:      Color:      Other:       
 Weather Conditions (required daily, or as conditions change):      Direction/Speed: S. Wind Outlook: RAIN Precipitation:  Y or  N  
 Specific Comments (including purge/well volume calculations if required):     

**FIELD COMMENTS**  
      
      
      
    

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
                     
 Date: 11/13/17 Name: Anna D. [unclear] Signature: [Signature] Company: SCS

# FIELD INFORMATION FORM



Site Name: OSL  
 Site No.:      Sample Point: MW-14C  
Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:                             

**PURGE INFO**

11	13	17	16	40	20				
<b>PURGE DATE</b> <small>(MM DD YY)</small>			<b>PURGE TIME</b> <small>(2400 Hr Clock)</small>		<b>ELAPSED HRS</b> <small>(hrs:min)</small>	<b>WATER VOL IN CASING</b> <small>(Gallons)</small>	<b>ACTUAL VOL PURGED</b> <small>(Gallons)</small>	<b>WELL VOL PURGED</b>	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ "Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.

**PURGE/SAMPLE EQUIPMENT**

Purging and Sampling Equipment... Dedicated:  Y or  N  
 Filter Device:  Y or  N    0.45 μ or    μ (circle or fill in)  
 Purging Device:  C    A-Submersible Pump    D-Bailer  
 B-Peristaltic Pump    E-Piston Pump  
 Sampling Device:  C    C-QED Bladder Pump    F-Dipper/Bottle  
 Filter Type:  A    A-In-line Disposable    C-Vacuum  
 B-Pressure    X-Other:                               
 X-Other:                               
 Sample Tube Type:  D    A-Teflon    C-PVC    X-Other:                               
 B-Stainless Steel    D-Polypropylene

**WELL DATA**

Well Elevation (at TOC)      (ft/mst)    Depth to Water (DTW) (from TOC)      \*      (ft/mst)    Groundwater Elevation (site datum, from TOC)      (ft/mst)  
 Total Well Depth (from TOC)      (ft)    Stick Up (from ground elevation)      (ft)    Casing ID      (in)    Casing Material PVC

Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (umhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
111310	390	6.47	1157	10.15		12.18	-1170	
111315		6.62	1166	10.13		10.71	-1210	
111323		6.72	1175	10.11		10.31	-1240	
111331		6.80	1174	10.11		10.27	-1230	
111334		6.81	1173	10.12		10.24	-1180	
111337		6.81	1173	10.10		10.23	-1190	
111340	Y	6.82	1173	10.08		0.22	-1190	3370

Suggested range for 3 consec. readings or note Permit/State requirements:  
 pH: +/- 0.2    Conductance: +/- 3%    D.O.: +/- 10%    eH/ORP: +/- 25 mV    DTW: Stabilize

**FIELD DATA**

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: DTW Units
111317	6.82	1173	10.08	1.21	0.22	-1190	3370

Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)

Sample Appearance: clear    Odor: None    Color:         Other:       
 Weather Conditions (required daily, or as conditions change):         Direction/Speed: S 40 W    Outlook: Pt. Cl    Precipitation:  Y or  N  
 Specific Comments (including purge/well volume calculations if required):     

**FIELD COMMENTS**

\* used black solvent w/ meter

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

11.13.17    Sam Carter    [Signature]    SCS  
 Date    Name    Signature    Company







# 280-103614

## TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING  
Nashville, TN



280-103614 Chain of Custody

### COOLER RECEIPT FORM

Cooler Received/Opened On 11/21/2017 @ 09:00

Time Samples Removed From Cooler \_\_\_\_\_ Time Samples Placed in Storage \_\_\_\_\_ (2 Hour Window)

1. Tracking # 4364 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 160656838 pH Strip Lot \_\_\_\_\_ Chlorine Strip Lot \_\_\_\_\_

2. Temperature of rep. sample or temp blank when opened: 4.3 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1 front

5. Were the seals intact, signed, and dated correctly? YES NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial) ADH

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES NO...NA



14. Was there a Trip Blank in this cooler? YES NO...NA If multiple coolers, sequence # \_\_\_\_\_

I certify that I unloaded the cooler and answered questions 7-14 (initial) ES

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) ES

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) ES

I certify that I attached a label with the unique LIMS number to each container (initial) ES

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...# ES



# Login Sample Receipt Checklist

Client: Waste Management

Job Number: 280-103614-1

**Login Number: 103614**

**List Source: TestAmerica Denver**

**List Number: 1**

**Creator: True, Joshua A**

<b>Question</b>	<b>Answer</b>	<b>Comment</b>
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

# Login Sample Receipt Checklist

Client: Waste Management

Job Number: 280-103614-1

**Login Number: 103614**  
**List Number: 2**  
**Creator: Hulbert, Michael J**

**List Source: TestAmerica Buffalo**  
**List Creation: 11/18/17 12:03 PM**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.3 #1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	False	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

## ANALYTICAL REPORT

Job Number: 280-103543-1

Job Description: WA02|Olympic View Sanitary LF

For:  
Waste Management  
2615 Davis Street  
San Leandro, CA 94577  
Attention: Mr. Patrick Madej



Approved for release.  
Betsy A Sara  
Project Manager II  
12/12/2017 11:52 AM

---

Betsy A Sara, Project Manager II  
4955 Yarrow Street, Arvada, CO, 80002  
(303)736-0189  
betsy.sara@testamericainc.com  
12/12/2017

cc: Mr. Dan Venchiarutti

The test results in this report relate only to the samples in this report and meet all requirements of NELAP, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

**TestAmerica Laboratories, Inc.**

TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002  
Tel (303) 736-0100 Fax (303) 431-7171 [www.testamericainc.com](http://www.testamericainc.com)



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## CASE NARRATIVE

Client: Waste Management

Project: WA02|Olympic View Sanitary LF

Report Number: 280-103543-1

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

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

### Sample Receiving

The samples were received on 11/14/2017; the samples arrived in good condition, properly preserved and on ice. The temperatures of the coolers at receipt were 0.8° C and 2.0° C.

### Holding Times

All holding times were within established control limits.

### Method Blanks

All Method Blank recoveries were within established control limits.

### Laboratory Control Samples (LCS)

All Laboratory Control Samples were within established control limits.

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

The Method 8260B SIM MS/MSD performed on sample MW-13A exhibited MS/MSD surrogate recoveries of Dibromofluoromethane outside control limits. Because the corresponding Matrix Spike and Matrix Spike Duplicate target compound recoveries, Laboratory Control Sample, and Method Blank sample were within control limits, this anomaly is considered to be due to matrix interference and no corrective action was taken.

The Matrix Spike and Matrix Spike Duplicate performed on a sample from another client exhibited recoveries outside control limits for multiple Method 8260C spike compounds. In addition, the RPD results were outside the RPD limits for multiple Method 8260C compounds. Because the corresponding Laboratory Control Sample and the Method Blank sample were within control limits, this anomaly may be due to matrix interference and no corrective action was taken.

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

### Organics

The analytes Acrolein, Acrylonitrile and 2-chloroethyl vinyl ether cannot be reliably quantitated in acid preserved samples, therefore, the reporting limits for the analytes Acrolein, Acrylonitrile and 2-chloroethyl vinyl ether are not reliable or defensible.

### General Comments

The analysis for Volatile Organics by Method 8260C was performed by TestAmerica Buffalo. Their address and phone number are:  
TestAmerica Buffalo  
10 Hazelwood Drive, Suite 106  
Amherst, NY 14228  
716-691-2600

## EXECUTIVE SUMMARY - Detections

Client: Waste Management

Job Number: 280-103543-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-103543-1</b>	<b>MW-13A</b>					
Butyl alcohol, n-		23	J	40	ug/L	8260C
Chloromethane		0.39	J	1.0	ug/L	8260C
Depth to water		58.54			ft	Field Sampling
Specific Conductivity		171			umhos/cm	Field Sampling
Dissolved Oxygen		6.11			mg/L	Field Sampling
eH		158.4			millivolts	Field Sampling
Turbidity		1.69			NTU	Field Sampling
Temperature		9.41			Degrees C	Field Sampling
pH		6.79			SU	Field Sampling
Chloride		1.7		1.0	mg/L	300.0
Sulfate		1.8		1.0	mg/L	300.0
Nitrate as N		0.42		0.050	mg/L	353.2
Alkalinity, Total (As CaCO3)		81		5.0	mg/L	SM 2320B
Alkalinity, Bicarbonate (As CaCO3)		81		5.0	mg/L	SM 2320B
Total Dissolved Solids (TDS)		110		5.0	mg/L	SM 2540C
<b><i>Dissolved</i></b>						
Calcium, Dissolved		15		0.040	mg/L	6010D
Magnesium, Dissolved		8.6		0.050	mg/L	6010D
Potassium, Dissolved		0.61	J	1.0	mg/L	6010D
Sodium, Dissolved		5.1		1.0	mg/L	6010D
<b><i>Total Recoverable</i></b>						
Barium, Total		0.0030		0.0010	mg/L	6020B
Chromium, Total		0.0022	J	0.0030	mg/L	6020B
Manganese, Total		0.00087	J	0.0010	mg/L	6020B
Vanadium, Total		0.0038		0.0020	mg/L	6020B

## EXECUTIVE SUMMARY - Detections

Client: Waste Management

Job Number: 280-103543-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-103543-2</b>	<b>MW-13B</b>					
Butyl alcohol, n-		29	J	40	ug/L	8260C
Depth to water		59.09			ft	Field Sampling
Specific Conductivity		170			umhos/cm	Field Sampling
Dissolved Oxygen		6.59			mg/L	Field Sampling
eH		77.0			millivolts	Field Sampling
Turbidity		2.26			NTU	Field Sampling
Temperature		9.54			Degrees C	Field Sampling
pH		7.49			SU	Field Sampling
Chloride		1.9		1.0	mg/L	300.0
Sulfate		2.9		1.0	mg/L	300.0
Nitrate as N		0.44		0.050	mg/L	353.2
Alkalinity, Total (As CaCO3)		81		5.0	mg/L	SM 2320B
Alkalinity, Bicarbonate (As CaCO3)		81		5.0	mg/L	SM 2320B
Total Dissolved Solids (TDS)		110		5.0	mg/L	SM 2540C
<b><i>Dissolved</i></b>						
Calcium, Dissolved		17		0.040	mg/L	6010D
Magnesium, Dissolved		8.3		0.050	mg/L	6010D
Potassium, Dissolved		0.65	J	1.0	mg/L	6010D
Sodium, Dissolved		5.1		1.0	mg/L	6010D
<b><i>Total Recoverable</i></b>						
Barium, Total		0.0035		0.0010	mg/L	6020B
Chromium, Total		0.0034		0.0030	mg/L	6020B
Vanadium, Total		0.0051		0.0020	mg/L	6020B

## EXECUTIVE SUMMARY - Detections

Client: Waste Management

Job Number: 280-103543-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-103543-3</b>	<b>MW-16</b>					
Butyl alcohol, n-		34	J	40	ug/L	8260C
Depth to water		59.07			ft	Field Sampling
Specific Conductivity		104			umhos/cm	Field Sampling
Dissolved Oxygen		5.61			mg/L	Field Sampling
eH		117.0			millivolts	Field Sampling
Turbidity		1.71			NTU	Field Sampling
Temperature		9.30			Degrees C	Field Sampling
pH		6.35			SU	Field Sampling
Sulfate		1.0		1.0	mg/L	300.0
Nitrate as N		0.28		0.050	mg/L	353.2
Alkalinity, Total (As CaCO3)		50		5.0	mg/L	SM 2320B
Alkalinity, Bicarbonate (As CaCO3)		50		5.0	mg/L	SM 2320B
Total Dissolved Solids (TDS)		80		5.0	mg/L	SM 2540C
<b><i>Dissolved</i></b>						
Calcium, Dissolved		8.9		0.040	mg/L	6010D
Iron, Dissolved		0.027	J	0.060	mg/L	6010D
Magnesium, Dissolved		4.8		0.050	mg/L	6010D
Potassium, Dissolved		0.73	J	1.0	mg/L	6010D
Sodium, Dissolved		4.9		1.0	mg/L	6010D
Manganese, Dissolved		0.00052	J	0.0010	mg/L	6020B
<b><i>Total Recoverable</i></b>						
Barium, Total		0.0035		0.0010	mg/L	6020B
Chromium, Total		0.0073		0.0030	mg/L	6020B
Manganese, Total		0.0011		0.0010	mg/L	6020B
Nickel, Total		0.0020	J	0.0040	mg/L	6020B
Vanadium, Total		0.0031		0.0020	mg/L	6020B



## EXECUTIVE SUMMARY - Detections

Client: Waste Management

Job Number: 280-103543-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-103543-4</b>	<b>MW-39</b>					
Butyl alcohol, n-		29	J	40	ug/L	8260C
Depth to water		20.46			ft	Field Sampling
Specific Conductivity		262			umhos/cm	Field Sampling
Dissolved Oxygen		0.15			mg/L	Field Sampling
eH		-241.0			millivolts	Field Sampling
Turbidity		3.22			NTU	Field Sampling
Temperature		11.25			Degrees C	Field Sampling
pH		6.26			SU	Field Sampling
Chloride		5.5		1.0	mg/L	300.0
Ammonia (as N)		0.47		0.030	mg/L	350.1
Alkalinity, Total (As CaCO3)		98		5.0	mg/L	SM 2320B
Alkalinity, Bicarbonate (As CaCO3)		98		5.0	mg/L	SM 2320B
Total Dissolved Solids (TDS)		150		5.0	mg/L	SM 2540C
Total Suspended Solids		11		4.0	mg/L	SM 2540D
Total Organic Carbon - Average		2.8		1.0	mg/L	SM 5310B
<b><i>Dissolved</i></b>						
Calcium, Dissolved		12		0.040	mg/L	6010D
Iron, Dissolved		34		0.060	mg/L	6010D
Magnesium, Dissolved		7.3		0.050	mg/L	6010D
Potassium, Dissolved		0.28	J	1.0	mg/L	6010D
Sodium, Dissolved		8.4		1.0	mg/L	6010D
Manganese, Dissolved		0.46		0.0010	mg/L	6020B
<b><i>Total Recoverable</i></b>						
Cobalt, Total		0.0065		0.0030	mg/L	6010D
Iron, Total		36		0.060	mg/L	6010D
Barium, Total		0.012		0.0010	mg/L	6020B
Chromium, Total		0.00087	J	0.0030	mg/L	6020B
Lead, Total		0.00019	J	0.0010	mg/L	6020B
Manganese, Total		0.43		0.0010	mg/L	6020B
Nickel, Total		0.0026	J	0.0040	mg/L	6020B
Vanadium, Total		0.0013	J	0.0020	mg/L	6020B

## EXECUTIVE SUMMARY - Detections

Client: Waste Management

Job Number: 280-103543-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-103543-5</b>	<b>MW-29A</b>					
Depth to water		12.67			ft	Field Sampling
Specific Conductivity		87			umhos/cm	Field Sampling
Dissolved Oxygen		0.21			mg/L	Field Sampling
eH		2.9			millivolts	Field Sampling
Turbidity		3.33			NTU	Field Sampling
Temperature		10.90			Degrees C	Field Sampling
pH		6.26			SU	Field Sampling
Chloride		1.5		1.0	mg/L	300.0
Ammonia (as N)		0.066		0.030	mg/L	350.1
Alkalinity, Total (As CaCO3)		35		5.0	mg/L	SM 2320B
Alkalinity, Bicarbonate (As CaCO3)		35		5.0	mg/L	SM 2320B
Total Dissolved Solids (TDS)		59		5.0	mg/L	SM 2540C
Total Organic Carbon - Average		1.6		1.0	mg/L	SM 5310B
<b><i>Dissolved</i></b>						
Calcium, Dissolved		5.8		0.040	mg/L	6010D
Iron, Dissolved		3.5		0.060	mg/L	6010D
Magnesium, Dissolved		3.3		0.050	mg/L	6010D
Potassium, Dissolved		0.37	J	1.0	mg/L	6010D
Sodium, Dissolved		3.3		1.0	mg/L	6010D
Manganese, Dissolved		1.1		0.0010	mg/L	6020B
<b><i>Total Recoverable</i></b>						
Cobalt, Total		0.0026	J	0.0030	mg/L	6010D
Iron, Total		4.0		0.060	mg/L	6010D
Barium, Total		0.0076		0.0010	mg/L	6020B
Copper, Total		0.00080	J	0.0020	mg/L	6020B
Manganese, Total		1.2		0.0010	mg/L	6020B
Nickel, Total		0.0020	J	0.0040	mg/L	6020B
Vanadium, Total		0.00095	J	0.0020	mg/L	6020B
Zinc, Total		0.0029	J	0.0050	mg/L	6020B

## EXECUTIVE SUMMARY - Detections

Client: Waste Management

Job Number: 280-103543-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-103543-6</b>	<b>MW-42</b>					
Vinyl chloride		0.031		0.020	ug/L	8260B SIM
Butyl alcohol, n-		27	J	40	ug/L	8260C
Trichloroethene		0.58	J	1.0	ug/L	8260C
Depth to water		26.87			ft	Field Sampling
Specific Conductivity		560			umhos/cm	Field Sampling
Dissolved Oxygen		0.19			mg/L	Field Sampling
eH		-79.0			millivolts	Field Sampling
Turbidity		2.72			NTU	Field Sampling
Temperature		12.04			Degrees C	Field Sampling
pH		6.70			SU	Field Sampling
Chloride		21		1.0	mg/L	300.0
Sulfate		14		1.0	mg/L	300.0
Ammonia (as N)		4.5		0.030	mg/L	350.1
Alkalinity, Total (As CaCO3)		210		5.0	mg/L	SM 2320B
Alkalinity, Bicarbonate (As CaCO3)		210		5.0	mg/L	SM 2320B
Total Dissolved Solids (TDS)		290		5.0	mg/L	SM 2540C
Total Suspended Solids		10		4.0	mg/L	SM 2540D
Total Organic Carbon - Average		6.8		1.0	mg/L	SM 5310B
<b><i>Dissolved</i></b>						
Calcium, Dissolved		42		0.040	mg/L	6010D
Iron, Dissolved		23		0.060	mg/L	6010D
Magnesium, Dissolved		14		0.050	mg/L	6010D
Potassium, Dissolved		8.5		1.0	mg/L	6010D
Sodium, Dissolved		20		1.0	mg/L	6010D
Manganese, Dissolved		4.3		0.0010	mg/L	6020B
<b><i>Total Recoverable</i></b>						
Cobalt, Total		0.0013	J	0.0030	mg/L	6010D
Iron, Total		26		0.060	mg/L	6010D
Barium, Total		0.11		0.0010	mg/L	6020B
Chromium, Total		0.00064	J	0.0030	mg/L	6020B
Manganese, Total		4.4		0.0010	mg/L	6020B
Nickel, Total		0.0012	J	0.0040	mg/L	6020B
Vanadium, Total		0.0012	J	0.0020	mg/L	6020B

## METHOD SUMMARY

Client: Waste Management

Job Number: 280-103543-1

Description	Lab Location	Method	Preparation Method
<b>Matrix: Water</b>			
Volatile Organic Compounds (GC/MS)	TAL DEN	SW846 8260B SIM	
Purge and Trap	TAL DEN		SW846 5030B
Metals (ICP)	TAL DEN	SW846 6010D	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Metals (ICP)	TAL DEN	SW846 6010D	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Metals (ICP/MS)	TAL DEN	SW846 6020B	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Metals (ICP/MS)	TAL DEN	SW846 6020B	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Anions, Ion Chromatography	TAL DEN	MCAWW 300.0	
Nitrogen, Ammonia	TAL DEN	MCAWW 350.1	
Nitrate	TAL DEN	EPA 353.2	
Alkalinity	TAL DEN	SM SM 2320B	
Solids, Total Dissolved (TDS)	TAL DEN	SM SM 2540C	
Solids, Total Suspended (TSS)	TAL DEN	SM SM 2540D	
Organic Carbon, Total (TOC)	TAL DEN	SM SM 5310B	
Field Sampling	TAL DEN	EPA Field Sampling	
Volatile Organic Compounds by GC/MS	TAL BUF	SW846 8260C	
Purge and Trap	TAL BUF		SW846 5030C

### Lab References:

TAL BUF = TestAmerica Buffalo

TAL DEN = TestAmerica Denver

### Method 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.

## METHOD / ANALYST SUMMARY

Client: Waste Management

Job Number: 280-103543-1

<b>Method</b>	<b>Analyst</b>	<b>Analyst ID</b>
SW846 8260B SIM	Moan, Matthew R	MRM
SW846 8260C	Reile, Rebecca S	RRS
SW846 6010D	Lackey, Cara M	CML
SW846 6010D	Rhoades, Chris R	CRR
SW846 6020B	Trudell, Lynn-Anne M	LMT
EPA Field Sampling	Sabsin, Chanchai	CS
MCAWW 300.0	Lehman, Jeffrey M	JML
MCAWW 350.1	Moore, Kevin A	KAM
EPA 353.2	Allen, Andrew J	AJA
SM SM 2320B	Duplin, Alysha 1	A1D
SM SM 2540C	Pedrick, Joshua A	JAP
SM SM 2540D	Cherry, Scott V	SVC
SM SM 5310B	Jewell, Connie C	CCJ

# SAMPLE SUMMARY

Client: Waste Management

Job Number: 280-103543-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
280-103543-1	MW-13A	Water	11/13/2017 1121	11/14/2017 0850
280-103543-2	MW-13B	Water	11/13/2017 1120	11/14/2017 0850
280-103543-3	MW-16	Water	11/13/2017 1255	11/14/2017 0850
280-103543-4	MW-39	Water	11/13/2017 1420	11/14/2017 0850
280-103543-5	MW-29A	Water	11/13/2017 1400	11/14/2017 0850
280-103543-6	MW-42	Water	11/13/2017 1500	11/14/2017 0850

# SAMPLE RESULTS

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

Client Sample ID: MW-13A

Lab Sample ID: 280-103543-1

Date Sampled: 11/13/2017 1121

Client Matrix: Water

Date Received: 11/14/2017 0850

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## 8260B SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B SIM	Analysis Batch:	280-396651	Instrument ID:	VMS_E
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	E5782.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	11/27/2017 1857			Final Weight/Volume:	20 mL
Prep Date:	11/27/2017 1857				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.018	0.020
Surrogate	%Rec	Qualifier	Acceptance Limits	
Dibromofluoromethane (Surr)	86		77 - 120	



# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-13B**

Lab Sample ID: 280-103543-2

Date Sampled: 11/13/2017 1120

Client Matrix: Water

Date Received: 11/14/2017 0850

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## 8260B SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B SIM	Analysis Batch:	280-396651	Instrument ID:	VMS_E
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	E5783.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	11/27/2017 1915			Final Weight/Volume:	20 mL
Prep Date:	11/27/2017 1915				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.018	0.020
Surrogate	%Rec	Qualifier	Acceptance Limits	
Dibromofluoromethane (Surr)	88		77 - 120	

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-16**

Lab Sample ID: 280-103543-3

Date Sampled: 11/13/2017 1255

Client Matrix: Water

Date Received: 11/14/2017 0850

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## 8260B SIM Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B SIM	Analysis Batch: 280-396651	Instrument ID: VMS_E
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: E5784.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 11/27/2017 1933		Final Weight/Volume: 20 mL
Prep Date: 11/27/2017 1933		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.018	0.020
Surrogate	%Rec	Qualifier	Acceptance Limits	
Dibromofluoromethane (Surr)	89		77 - 120	

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-39**

Lab Sample ID: 280-103543-4

Date Sampled: 11/13/2017 1420

Client Matrix: Water

Date Received: 11/14/2017 0850

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## 8260B SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B SIM	Analysis Batch:	280-396651	Instrument ID:	VMS_E
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	E5785.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	11/27/2017 1951			Final Weight/Volume:	20 mL
Prep Date:	11/27/2017 1951				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.018	0.020

Surrogate	%Rec	Qualifier	Acceptance Limits
Dibromofluoromethane (Surr)	87		77 - 120

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-29A**

Lab Sample ID: 280-103543-5

Date Sampled: 11/13/2017 1400

Client Matrix: Water

Date Received: 11/14/2017 0850

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## 8260B SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B SIM	Analysis Batch:	280-396651	Instrument ID:	VMS_E
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	E5786.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	11/27/2017 2009			Final Weight/Volume:	20 mL
Prep Date:	11/27/2017 2009				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.018	0.020
Surrogate	%Rec	Qualifier	Acceptance Limits	
Dibromofluoromethane (Surr)	90		77 - 120	

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-42**

Lab Sample ID: 280-103543-6

Date Sampled: 11/13/2017 1500

Client Matrix: Water

Date Received: 11/14/2017 0850

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## 8260B SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B SIM	Analysis Batch:	280-396651	Instrument ID:	VMS_E
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	E5787.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	11/27/2017 2027			Final Weight/Volume:	20 mL
Prep Date:	11/27/2017 2027				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.031		0.018	0.020
Surrogate	%Rec	Qualifier	Acceptance Limits	
Dibromofluoromethane (Surr)	82		77 - 120	

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-13A**

Lab Sample ID: 280-103543-1

Date Sampled: 11/13/2017 1121

Client Matrix: Water

Date Received: 11/14/2017 0850

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388239	Instrument ID: HP5975T
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: T1983.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1104		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1104		

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.35	1.0
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,1-Dichloropropene	ND		0.72	1.0
1,2,3-Trichlorobenzene	ND		0.41	1.0
1,2,3-Trichloropropane	ND		0.89	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2,4-Trimethylbenzene	ND		0.75	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane (EDB)	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloroethene, Total	ND		0.81	2.0
1,2-Dichloropropane	ND		0.72	1.0
1,3,5-Trichlorobenzene	ND		0.23	1.0
1,3,5-Trimethylbenzene	ND		0.77	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,3-Dichloropropane	ND		0.75	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
1,4-Dioxane	ND		9.3	40
2,2-Dichloropropane	ND		0.40	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chloroethyl vinyl ether	ND		0.96	5.0
2-Hexanone	ND		1.2	5.0
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Acetonitrile	ND		4.9	15
Acrolein	ND		0.91	20
Acrylonitrile	ND		0.83	5.0
Benzene	ND		0.41	1.0
Bromobenzene	ND		0.80	1.0
Bromochloromethane	ND		0.87	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Butyl alcohol, n-	23	J	8.9	40
Butyl alcohol, tert-	ND		3.3	10
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Chlorodifluoromethane	ND		0.26	1.0
Chloroethane	ND		0.32	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-13A**

Lab Sample ID: 280-103543-1

Date Sampled: 11/13/2017 1121

Client Matrix: Water

Date Received: 11/14/2017 0850

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-388239	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T1983.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	11/19/2017 1104			Final Weight/Volume:	5 mL
Prep Date:	11/19/2017 1104				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloroform	ND		0.34	1.0
Chloromethane	0.39	J	0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dibromochloromethane	ND		0.32	1.0
Dibromomethane	ND		0.41	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Dichlorofluoromethane	ND		0.34	1.0
Ethyl acetate	ND		0.66	1.0
Ethyl ether	ND		0.72	1.0
Ethyl tert-butyl ether	ND		0.29	1.0
Ethylbenzene	ND		0.74	1.0
Hexachlorobutadiene	ND		0.28	1.0
Hexane	ND		0.40	10
Iodomethane	ND		0.30	1.0
Isobutanol	ND		4.8	25
Isopropyl ether	ND		0.59	1.0
Isopropylbenzene	ND		0.79	1.0
Methacrylonitrile	ND		0.69	5.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
m-Xylene & p-Xylene	ND		0.66	2.0
Naphthalene	ND		0.43	1.0
n-Butylbenzene	ND		0.64	1.0
N-Propylbenzene	ND		0.69	1.0
o-Chlorotoluene	ND		0.86	1.0
o-Xylene	ND		0.76	1.0
p-Chlorotoluene	ND		0.84	1.0
p-Cymene	ND		0.31	1.0
sec-Butylbenzene	ND		0.75	1.0
Styrene	ND		0.73	1.0
Tert-amyl methyl ether	ND		0.27	1.0
tert-Butylbenzene	ND		0.81	1.0
Tetrachloroethene	ND		0.36	1.0
Tetrahydrofuran	ND		1.3	5.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
trans-1,4-Dichloro-2-butene	ND		0.22	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0
Vinyl acetate	ND		0.85	5.0
Vinyl chloride	ND		0.90	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-13A**

Lab Sample ID: 280-103543-1

Date Sampled: 11/13/2017 1121

Client Matrix: Water

Date Received: 11/14/2017 0850

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## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388239	Instrument ID: HP5975T
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: T1983.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1104		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1104		

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104		77 - 120
4-Bromofluorobenzene (Surr)	91		73 - 120
Toluene-d8 (Surr)	103		80 - 120



## Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-13A**

Lab Sample ID: 280-103543-1

Date Sampled: 11/13/2017 1121

Client Matrix: Water

Date Received: 11/14/2017 0850

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### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-388239	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T1983.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	11/19/2017 1104			Final Weight/Volume:	5 mL
Prep Date:	11/19/2017 1104				

### Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
67-72-1	Hexachloroethane TIC	ND	

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-13B**

Lab Sample ID: 280-103543-2

Date Sampled: 11/13/2017 1120

Client Matrix: Water

Date Received: 11/14/2017 0850

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388239	Instrument ID: HP5975T
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: T1984.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1128		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1128		

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.35	1.0
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,1-Dichloropropene	ND		0.72	1.0
1,2,3-Trichlorobenzene	ND		0.41	1.0
1,2,3-Trichloropropane	ND		0.89	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2,4-Trimethylbenzene	ND		0.75	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane (EDB)	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloroethene, Total	ND		0.81	2.0
1,2-Dichloropropane	ND		0.72	1.0
1,3,5-Trichlorobenzene	ND		0.23	1.0
1,3,5-Trimethylbenzene	ND		0.77	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,3-Dichloropropane	ND		0.75	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
1,4-Dioxane	ND		9.3	40
2,2-Dichloropropane	ND		0.40	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chloroethyl vinyl ether	ND		0.96	5.0
2-Hexanone	ND		1.2	5.0
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Acetonitrile	ND		4.9	15
Acrolein	ND		0.91	20
Acrylonitrile	ND		0.83	5.0
Benzene	ND		0.41	1.0
Bromobenzene	ND		0.80	1.0
Bromochloromethane	ND		0.87	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Butyl alcohol, n-	29	J	8.9	40
Butyl alcohol, tert-	ND		3.3	10
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Chlorodifluoromethane	ND		0.26	1.0
Chloroethane	ND		0.32	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

Client Sample ID: MW-13B

Lab Sample ID: 280-103543-2

Date Sampled: 11/13/2017 1120

Client Matrix: Water

Date Received: 11/14/2017 0850

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C                      Analysis Batch: 480-388239                      Instrument ID: HP5975T  
Prep Method: 5030C                      Prep Batch: N/A                      Lab File ID: T1984.D  
Dilution: 1.0                      Initial Weight/Volume: 5 mL  
Analysis Date: 11/19/2017 1128                      Final Weight/Volume: 5 mL  
Prep Date: 11/19/2017 1128

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dibromochloromethane	ND		0.32	1.0
Dibromomethane	ND		0.41	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Dichlorofluoromethane	ND		0.34	1.0
Ethyl acetate	ND		0.66	1.0
Ethyl ether	ND		0.72	1.0
Ethyl tert-butyl ether	ND		0.29	1.0
Ethylbenzene	ND		0.74	1.0
Hexachlorobutadiene	ND		0.28	1.0
Hexane	ND		0.40	10
Iodomethane	ND		0.30	1.0
Isobutanol	ND		4.8	25
Isopropyl ether	ND		0.59	1.0
Isopropylbenzene	ND		0.79	1.0
Methacrylonitrile	ND		0.69	5.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
m-Xylene & p-Xylene	ND		0.66	2.0
Naphthalene	ND		0.43	1.0
n-Butylbenzene	ND		0.64	1.0
N-Propylbenzene	ND		0.69	1.0
o-Chlorotoluene	ND		0.86	1.0
o-Xylene	ND		0.76	1.0
p-Chlorotoluene	ND		0.84	1.0
p-Cymene	ND		0.31	1.0
sec-Butylbenzene	ND		0.75	1.0
Styrene	ND		0.73	1.0
Tert-amyl methyl ether	ND		0.27	1.0
tert-Butylbenzene	ND		0.81	1.0
Tetrachloroethene	ND		0.36	1.0
Tetrahydrofuran	ND		1.3	5.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
trans-1,4-Dichloro-2-butene	ND		0.22	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0
Vinyl acetate	ND		0.85	5.0
Vinyl chloride	ND		0.90	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-13B**

Lab Sample ID: 280-103543-2

Date Sampled: 11/13/2017 1120

Client Matrix: Water

Date Received: 11/14/2017 0850

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## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388239	Instrument ID: HP5975T
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: T1984.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1128		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1128		

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	101		77 - 120
4-Bromofluorobenzene (Surr)	89		73 - 120
Toluene-d8 (Surr)	103		80 - 120

## Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-13B**

Lab Sample ID: 280-103543-2

Date Sampled: 11/13/2017 1120

Client Matrix: Water

Date Received: 11/14/2017 0850

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### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-388239	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T1984.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	11/19/2017 1128			Final Weight/Volume:	5 mL
Prep Date:	11/19/2017 1128				

### Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
67-72-1	Hexachloroethane TIC	ND	

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-16**

Lab Sample ID: 280-103543-3

Date Sampled: 11/13/2017 1255

Client Matrix: Water

Date Received: 11/14/2017 0850

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388239	Instrument ID: HP5975T
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: T1985.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1152		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1152		

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.35	1.0
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,1-Dichloropropene	ND		0.72	1.0
1,2,3-Trichlorobenzene	ND		0.41	1.0
1,2,3-Trichloropropane	ND		0.89	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2,4-Trimethylbenzene	ND		0.75	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane (EDB)	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloroethene, Total	ND		0.81	2.0
1,2-Dichloropropane	ND		0.72	1.0
1,3,5-Trichlorobenzene	ND		0.23	1.0
1,3,5-Trimethylbenzene	ND		0.77	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,3-Dichloropropane	ND		0.75	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
1,4-Dioxane	ND		9.3	40
2,2-Dichloropropane	ND		0.40	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chloroethyl vinyl ether	ND		0.96	5.0
2-Hexanone	ND		1.2	5.0
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Acetonitrile	ND		4.9	15
Acrolein	ND		0.91	20
Acrylonitrile	ND		0.83	5.0
Benzene	ND		0.41	1.0
Bromobenzene	ND		0.80	1.0
Bromochloromethane	ND		0.87	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Butyl alcohol, n-	34	J	8.9	40
Butyl alcohol, tert-	ND		3.3	10
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Chlorodifluoromethane	ND		0.26	1.0
Chloroethane	ND		0.32	1.0

## Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-16**

Lab Sample ID: 280-103543-3

Date Sampled: 11/13/2017 1255

Client Matrix: Water

Date Received: 11/14/2017 0850

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388239	Instrument ID: HP5975T
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: T1985.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1152		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1152		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dibromochloromethane	ND		0.32	1.0
Dibromomethane	ND		0.41	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Dichlorofluoromethane	ND		0.34	1.0
Ethyl acetate	ND		0.66	1.0
Ethyl ether	ND		0.72	1.0
Ethyl tert-butyl ether	ND		0.29	1.0
Ethylbenzene	ND		0.74	1.0
Hexachlorobutadiene	ND		0.28	1.0
Hexane	ND		0.40	10
Iodomethane	ND		0.30	1.0
Isobutanol	ND		4.8	25
Isopropyl ether	ND		0.59	1.0
Isopropylbenzene	ND		0.79	1.0
Methacrylonitrile	ND		0.69	5.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
m-Xylene & p-Xylene	ND		0.66	2.0
Naphthalene	ND		0.43	1.0
n-Butylbenzene	ND		0.64	1.0
N-Propylbenzene	ND		0.69	1.0
o-Chlorotoluene	ND		0.86	1.0
o-Xylene	ND		0.76	1.0
p-Chlorotoluene	ND		0.84	1.0
p-Cymene	ND		0.31	1.0
sec-Butylbenzene	ND		0.75	1.0
Styrene	ND		0.73	1.0
Tert-amyl methyl ether	ND		0.27	1.0
tert-Butylbenzene	ND		0.81	1.0
Tetrachloroethene	ND		0.36	1.0
Tetrahydrofuran	ND		1.3	5.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
trans-1,4-Dichloro-2-butene	ND		0.22	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0
Vinyl acetate	ND		0.85	5.0
Vinyl chloride	ND		0.90	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-16**

Lab Sample ID: 280-103543-3

Date Sampled: 11/13/2017 1255

Client Matrix: Water

Date Received: 11/14/2017 0850

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## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388239	Instrument ID: HP5975T
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: T1985.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1152		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1152		

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	107		77 - 120
4-Bromofluorobenzene (Surr)	95		73 - 120
Toluene-d8 (Surr)	106		80 - 120



## Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-16**

Lab Sample ID: 280-103543-3

Date Sampled: 11/13/2017 1255

Client Matrix: Water

Date Received: 11/14/2017 0850

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### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-388239	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T1985.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	11/19/2017 1152			Final Weight/Volume:	5 mL
Prep Date:	11/19/2017 1152				

### Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
67-72-1	Hexachloroethane TIC	ND	

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

Client Sample ID: MW-39

Lab Sample ID: 280-103543-4

Date Sampled: 11/13/2017 1420

Client Matrix: Water

Date Received: 11/14/2017 0850

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-388239	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T1986.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	11/19/2017 1216			Final Weight/Volume:	5 mL
Prep Date:	11/19/2017 1216				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.35	1.0
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,1-Dichloropropene	ND		0.72	1.0
1,2,3-Trichlorobenzene	ND		0.41	1.0
1,2,3-Trichloropropane	ND		0.89	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2,4-Trimethylbenzene	ND		0.75	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane (EDB)	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloroethene, Total	ND		0.81	2.0
1,2-Dichloropropane	ND		0.72	1.0
1,3,5-Trichlorobenzene	ND		0.23	1.0
1,3,5-Trimethylbenzene	ND		0.77	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,3-Dichloropropane	ND		0.75	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
1,4-Dioxane	ND		9.3	40
2,2-Dichloropropane	ND		0.40	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chloroethyl vinyl ether	ND		0.96	5.0
2-Hexanone	ND		1.2	5.0
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Acetonitrile	ND		4.9	15
Acrolein	ND		0.91	20
Acrylonitrile	ND		0.83	5.0
Benzene	ND		0.41	1.0
Bromobenzene	ND		0.80	1.0
Bromochloromethane	ND		0.87	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Butyl alcohol, n-	29	J	8.9	40
Butyl alcohol, tert-	ND		3.3	10
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Chlorodifluoromethane	ND		0.26	1.0
Chloroethane	ND		0.32	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

Client Sample ID: MW-39

Lab Sample ID: 280-103543-4

Date Sampled: 11/13/2017 1420

Client Matrix: Water

Date Received: 11/14/2017 0850

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C                      Analysis Batch: 480-388239                      Instrument ID: HP5975T  
Prep Method: 5030C                      Prep Batch: N/A                      Lab File ID: T1986.D  
Dilution: 1.0                      Initial Weight/Volume: 5 mL  
Analysis Date: 11/19/2017 1216                      Final Weight/Volume: 5 mL  
Prep Date: 11/19/2017 1216

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dibromochloromethane	ND		0.32	1.0
Dibromomethane	ND		0.41	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Dichlorofluoromethane	ND		0.34	1.0
Ethyl acetate	ND		0.66	1.0
Ethyl ether	ND		0.72	1.0
Ethyl tert-butyl ether	ND		0.29	1.0
Ethylbenzene	ND		0.74	1.0
Hexachlorobutadiene	ND		0.28	1.0
Hexane	ND		0.40	10
Iodomethane	ND		0.30	1.0
Isobutanol	ND		4.8	25
Isopropyl ether	ND		0.59	1.0
Isopropylbenzene	ND		0.79	1.0
Methacrylonitrile	ND		0.69	5.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
m-Xylene & p-Xylene	ND		0.66	2.0
Naphthalene	ND		0.43	1.0
n-Butylbenzene	ND		0.64	1.0
N-Propylbenzene	ND		0.69	1.0
o-Chlorotoluene	ND		0.86	1.0
o-Xylene	ND		0.76	1.0
p-Chlorotoluene	ND		0.84	1.0
p-Cymene	ND		0.31	1.0
sec-Butylbenzene	ND		0.75	1.0
Styrene	ND		0.73	1.0
Tert-amyl methyl ether	ND		0.27	1.0
tert-Butylbenzene	ND		0.81	1.0
Tetrachloroethene	ND		0.36	1.0
Tetrahydrofuran	ND		1.3	5.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
trans-1,4-Dichloro-2-butene	ND		0.22	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0
Vinyl acetate	ND		0.85	5.0
Vinyl chloride	ND		0.90	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-39**

Lab Sample ID: 280-103543-4

Date Sampled: 11/13/2017 1420

Client Matrix: Water

Date Received: 11/14/2017 0850

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## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388239	Instrument ID: HP5975T
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: T1986.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1216		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1216		

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	109		77 - 120
4-Bromofluorobenzene (Surr)	90		73 - 120
Toluene-d8 (Surr)	98		80 - 120

## Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-39**

Lab Sample ID: 280-103543-4

Date Sampled: 11/13/2017 1420

Client Matrix: Water

Date Received: 11/14/2017 0850

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### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388239	Instrument ID: HP5975T
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: T1986.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1216		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1216		

### Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
67-72-1	Hexachloroethane TIC	ND	

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-29A**

Lab Sample ID: 280-103543-5

Date Sampled: 11/13/2017 1400

Client Matrix: Water

Date Received: 11/14/2017 0850

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388239	Instrument ID: HP5975T
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: T1987.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1239		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1239		

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.35	1.0
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,1-Dichloropropene	ND		0.72	1.0
1,2,3-Trichlorobenzene	ND		0.41	1.0
1,2,3-Trichloropropane	ND		0.89	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2,4-Trimethylbenzene	ND		0.75	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane (EDB)	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloroethene, Total	ND		0.81	2.0
1,2-Dichloropropane	ND		0.72	1.0
1,3,5-Trichlorobenzene	ND		0.23	1.0
1,3,5-Trimethylbenzene	ND		0.77	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,3-Dichloropropane	ND		0.75	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
1,4-Dioxane	ND		9.3	40
2,2-Dichloropropane	ND		0.40	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chloroethyl vinyl ether	ND		0.96	5.0
2-Hexanone	ND		1.2	5.0
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Acetonitrile	ND		4.9	15
Acrolein	ND		0.91	20
Acrylonitrile	ND		0.83	5.0
Benzene	ND		0.41	1.0
Bromobenzene	ND		0.80	1.0
Bromochloromethane	ND		0.87	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Butyl alcohol, n-	ND		8.9	40
Butyl alcohol, tert-	ND		3.3	10
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Chlorodifluoromethane	ND		0.26	1.0
Chloroethane	ND		0.32	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-29A**

Lab Sample ID: 280-103543-5

Date Sampled: 11/13/2017 1400

Client Matrix: Water

Date Received: 11/14/2017 0850

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388239	Instrument ID: HP5975T
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: T1987.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1239		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1239		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dibromochloromethane	ND		0.32	1.0
Dibromomethane	ND		0.41	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Dichlorofluoromethane	ND		0.34	1.0
Ethyl acetate	ND		0.66	1.0
Ethyl ether	ND		0.72	1.0
Ethyl tert-butyl ether	ND		0.29	1.0
Ethylbenzene	ND		0.74	1.0
Hexachlorobutadiene	ND		0.28	1.0
Hexane	ND		0.40	10
Iodomethane	ND		0.30	1.0
Isobutanol	ND		4.8	25
Isopropyl ether	ND		0.59	1.0
Isopropylbenzene	ND		0.79	1.0
Methacrylonitrile	ND		0.69	5.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
m-Xylene & p-Xylene	ND		0.66	2.0
Naphthalene	ND		0.43	1.0
n-Butylbenzene	ND		0.64	1.0
N-Propylbenzene	ND		0.69	1.0
o-Chlorotoluene	ND		0.86	1.0
o-Xylene	ND		0.76	1.0
p-Chlorotoluene	ND		0.84	1.0
p-Cymene	ND		0.31	1.0
sec-Butylbenzene	ND		0.75	1.0
Styrene	ND		0.73	1.0
Tert-amyl methyl ether	ND		0.27	1.0
tert-Butylbenzene	ND		0.81	1.0
Tetrachloroethene	ND		0.36	1.0
Tetrahydrofuran	ND		1.3	5.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
trans-1,4-Dichloro-2-butene	ND		0.22	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0
Vinyl acetate	ND		0.85	5.0
Vinyl chloride	ND		0.90	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-29A**

Lab Sample ID: 280-103543-5

Date Sampled: 11/13/2017 1400

Client Matrix: Water

Date Received: 11/14/2017 0850

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## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388239	Instrument ID: HP5975T
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: T1987.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1239		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1239		

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104		77 - 120
4-Bromofluorobenzene (Surr)	90		73 - 120
Toluene-d8 (Surr)	100		80 - 120



## Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-29A**

Lab Sample ID: 280-103543-5

Date Sampled: 11/13/2017 1400

Client Matrix: Water

Date Received: 11/14/2017 0850

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### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-388239	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T1987.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	11/19/2017 1239			Final Weight/Volume:	5 mL
Prep Date:	11/19/2017 1239				

### Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
67-72-1	Hexachloroethane TIC	ND	

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-42**

Lab Sample ID: 280-103543-6

Date Sampled: 11/13/2017 1500

Client Matrix: Water

Date Received: 11/14/2017 0850

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388239	Instrument ID: HP5975T
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: T1988.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1303		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1303		

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.35	1.0
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,1-Dichloropropene	ND		0.72	1.0
1,2,3-Trichlorobenzene	ND		0.41	1.0
1,2,3-Trichloropropane	ND		0.89	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2,4-Trimethylbenzene	ND		0.75	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane (EDB)	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloroethene, Total	ND		0.81	2.0
1,2-Dichloropropane	ND		0.72	1.0
1,3,5-Trichlorobenzene	ND		0.23	1.0
1,3,5-Trimethylbenzene	ND		0.77	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,3-Dichloropropane	ND		0.75	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
1,4-Dioxane	ND		9.3	40
2,2-Dichloropropane	ND		0.40	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chloroethyl vinyl ether	ND		0.96	5.0
2-Hexanone	ND		1.2	5.0
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Acetonitrile	ND		4.9	15
Acrolein	ND		0.91	20
Acrylonitrile	ND		0.83	5.0
Benzene	ND		0.41	1.0
Bromobenzene	ND		0.80	1.0
Bromochloromethane	ND		0.87	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Butyl alcohol, n-	27	J	8.9	40
Butyl alcohol, tert-	ND		3.3	10
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Chlorodifluoromethane	ND		0.26	1.0
Chloroethane	ND		0.32	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-42**

Lab Sample ID: 280-103543-6

Date Sampled: 11/13/2017 1500

Client Matrix: Water

Date Received: 11/14/2017 0850

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-388239	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T1988.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	11/19/2017 1303			Final Weight/Volume:	5 mL
Prep Date:	11/19/2017 1303				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dibromochloromethane	ND		0.32	1.0
Dibromomethane	ND		0.41	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Dichlorofluoromethane	ND		0.34	1.0
Ethyl acetate	ND		0.66	1.0
Ethyl ether	ND		0.72	1.0
Ethyl tert-butyl ether	ND		0.29	1.0
Ethylbenzene	ND		0.74	1.0
Hexachlorobutadiene	ND		0.28	1.0
Hexane	ND		0.40	10
Iodomethane	ND		0.30	1.0
Isobutanol	ND		4.8	25
Isopropyl ether	ND		0.59	1.0
Isopropylbenzene	ND		0.79	1.0
Methacrylonitrile	ND		0.69	5.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
m-Xylene & p-Xylene	ND		0.66	2.0
Naphthalene	ND		0.43	1.0
n-Butylbenzene	ND		0.64	1.0
N-Propylbenzene	ND		0.69	1.0
o-Chlorotoluene	ND		0.86	1.0
o-Xylene	ND		0.76	1.0
p-Chlorotoluene	ND		0.84	1.0
p-Cymene	ND		0.31	1.0
sec-Butylbenzene	ND		0.75	1.0
Styrene	ND		0.73	1.0
Tert-amyl methyl ether	ND		0.27	1.0
tert-Butylbenzene	ND		0.81	1.0
Tetrachloroethene	ND		0.36	1.0
Tetrahydrofuran	ND		1.3	5.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
trans-1,4-Dichloro-2-butene	ND		0.22	1.0
Trichloroethene	0.58	J	0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0
Vinyl acetate	ND		0.85	5.0
Vinyl chloride	ND		0.90	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-42**

Lab Sample ID: 280-103543-6

Date Sampled: 11/13/2017 1500

Client Matrix: Water

Date Received: 11/14/2017 0850

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## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388239	Instrument ID: HP5975T
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: T1988.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1303		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1303		

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	93		77 - 120
4-Bromofluorobenzene (Surr)	96		73 - 120
Toluene-d8 (Surr)	99		80 - 120

## Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-42**

Lab Sample ID: 280-103543-6

Date Sampled: 11/13/2017 1500

Client Matrix: Water

Date Received: 11/14/2017 0850

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### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 480-388239

Instrument ID: HP5975T

Prep Method: 5030C

Prep Batch: N/A

Lab File ID: T1988.D

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 11/19/2017 1303

Final Weight/Volume: 5 mL

Prep Date: 11/19/2017 1303

### Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
67-72-1	Hexachloroethane TIC	ND	

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-13A**

Lab Sample ID: 280-103543-1

Date Sampled: 11/13/2017 1121

Client Matrix: Water

Date Received: 11/14/2017 0850

## 6010D Metals (ICP)-Total Recoverable

Analysis Method: 6010D      Analysis Batch: 280-396876      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-396510      Lab File ID: 51A112817A.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/28/2017 2046      Final Weight/Volume: 50 mL  
Prep Date: 11/28/2017 0806

Analyte	Result (mg/L)	Qualifier	MDL	RL
Cobalt, Total	ND		0.0012	0.0030
Iron, Total	ND		0.022	0.060

## 6010D Metals (ICP)-Dissolved

Analysis Method: 6010D      Analysis Batch: 280-396202      Instrument ID: MT\_025  
Prep Method: 3005A      Prep Batch: 280-395708      Lab File ID: 25A112117b.asc  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/21/2017 1818      Final Weight/Volume: 50 mL  
Prep Date: 11/21/2017 0752

Analyte	Result (mg/L)	Qualifier	MDL	RL
Calcium, Dissolved	15		0.035	0.040
Iron, Dissolved	ND		0.022	0.060
Magnesium, Dissolved	8.6		0.011	0.050
Potassium, Dissolved	0.61	J	0.24	1.0
Sodium, Dissolved	5.1		0.12	1.0

## 6020B Metals (ICP/MS)-Total Recoverable

Analysis Method: 6020B      Analysis Batch: 280-396711      Instrument ID: MT\_078  
Prep Method: 3005A      Prep Batch: 280-396509      Lab File ID: 210SMPL\_112717.D  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/28/2017 0106      Final Weight/Volume: 50 mL  
Prep Date: 11/27/2017 1610

Analyte	Result (mg/L)	Qualifier	MDL	RL
Antimony, Total	ND		0.00040	0.0010
Barium, Total	0.0030		0.00029	0.0010
Beryllium, Total	ND		0.000080	0.0010
Cadmium, Total	ND		0.00027	0.00020
Chromium, Total	0.0022	J	0.00050	0.0030
Copper, Total	ND		0.00056	0.0020
Lead, Total	ND		0.00018	0.0010
Manganese, Total	0.00087	J	0.00031	0.0010
Nickel, Total	ND		0.00030	0.0040
Selenium, Total	ND		0.00070	0.0010
Silver, Total	ND		0.000033	0.0020
Thallium, Total	ND		0.000050	0.0010
Vanadium, Total	0.0038		0.00050	0.0020
Zinc, Total	ND		0.0020	0.0050

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-13A**

Lab Sample ID: 280-103543-1

Date Sampled: 11/13/2017 1121

Client Matrix: Water

Date Received: 11/14/2017 0850

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## 6020B Metals (ICP/MS)-Dissolved

Analysis Method: 6020B

Analysis Batch: 280-396328

Instrument ID: MT\_077

Prep Method: 3005A

Prep Batch: 280-395711

Lab File ID: 072SMPL.d

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 11/21/2017 1844

Final Weight/Volume: 50 mL

Prep Date: 11/21/2017 0752

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Analyte	Result (mg/L)	Qualifier	MDL	RL
Manganese, Dissolved	ND		0.00031	0.0010

---

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-13B**

Lab Sample ID: 280-103543-2

Date Sampled: 11/13/2017 1120

Client Matrix: Water

Date Received: 11/14/2017 0850

## 6010D Metals (ICP)-Total Recoverable

Analysis Method: 6010D      Analysis Batch: 280-396876      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-396510      Lab File ID: 51A112817A.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/28/2017 2101      Final Weight/Volume: 50 mL  
Prep Date: 11/28/2017 0806

Analyte	Result (mg/L)	Qualifier	MDL	RL
Cobalt, Total	ND		0.0012	0.0030
Iron, Total	ND		0.022	0.060

## 6010D Metals (ICP)-Dissolved

Analysis Method: 6010D      Analysis Batch: 280-396202      Instrument ID: MT\_025  
Prep Method: 3005A      Prep Batch: 280-395708      Lab File ID: 25A112117b.asc  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/21/2017 1820      Final Weight/Volume: 50 mL  
Prep Date: 11/21/2017 0752

Analyte	Result (mg/L)	Qualifier	MDL	RL
Calcium, Dissolved	17		0.035	0.040
Iron, Dissolved	ND		0.022	0.060
Magnesium, Dissolved	8.3		0.011	0.050
Potassium, Dissolved	0.65	J	0.24	1.0
Sodium, Dissolved	5.1		0.12	1.0

## 6020B Metals (ICP/MS)-Total Recoverable

Analysis Method: 6020B      Analysis Batch: 280-396711      Instrument ID: MT\_078  
Prep Method: 3005A      Prep Batch: 280-396509      Lab File ID: 211SMPL\_112717.D  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/28/2017 0109      Final Weight/Volume: 50 mL  
Prep Date: 11/27/2017 1610

Analyte	Result (mg/L)	Qualifier	MDL	RL
Antimony, Total	ND		0.00040	0.0010
Barium, Total	0.0035		0.00029	0.0010
Beryllium, Total	ND		0.000080	0.0010
Cadmium, Total	ND		0.00027	0.00020
Chromium, Total	0.0034		0.00050	0.0030
Copper, Total	ND		0.00056	0.0020
Lead, Total	ND		0.00018	0.0010
Manganese, Total	ND		0.00031	0.0010
Nickel, Total	ND		0.00030	0.0040
Selenium, Total	ND		0.00070	0.0010
Silver, Total	ND		0.000033	0.0020
Thallium, Total	ND		0.000050	0.0010
Vanadium, Total	0.0051		0.00050	0.0020
Zinc, Total	ND		0.0020	0.0050



## Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-13B**

Lab Sample ID: 280-103543-2

Date Sampled: 11/13/2017 1120

Client Matrix: Water

Date Received: 11/14/2017 0850

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### 6020B Metals (ICP/MS)-Dissolved

Analysis Method: 6020B

Analysis Batch: 280-396328

Instrument ID: MT\_077

Prep Method: 3005A

Prep Batch: 280-395711

Lab File ID: 073SMPL.d

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 11/21/2017 1848

Final Weight/Volume: 50 mL

Prep Date: 11/21/2017 0752

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Analyte	Result (mg/L)	Qualifier	MDL	RL
Manganese, Dissolved	ND		0.00031	0.0010

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# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-16**

Lab Sample ID: 280-103543-3

Date Sampled: 11/13/2017 1255

Client Matrix: Water

Date Received: 11/14/2017 0850

## 6010D Metals (ICP)-Total Recoverable

Analysis Method: 6010D      Analysis Batch: 280-396876      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-396510      Lab File ID: 51A112817A.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/28/2017 2103      Final Weight/Volume: 50 mL  
Prep Date: 11/28/2017 0806

Analyte	Result (mg/L)	Qualifier	MDL	RL
Cobalt, Total	ND		0.0012	0.0030
Iron, Total	ND		0.022	0.060

## 6010D Metals (ICP)-Dissolved

Analysis Method: 6010D      Analysis Batch: 280-396202      Instrument ID: MT\_025  
Prep Method: 3005A      Prep Batch: 280-395708      Lab File ID: 25A112117b.asc  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/21/2017 1823      Final Weight/Volume: 50 mL  
Prep Date: 11/21/2017 0752

Analyte	Result (mg/L)	Qualifier	MDL	RL
Calcium, Dissolved	8.9		0.035	0.040
Iron, Dissolved	0.027	J	0.022	0.060
Magnesium, Dissolved	4.8		0.011	0.050
Potassium, Dissolved	0.73	J	0.24	1.0
Sodium, Dissolved	4.9		0.12	1.0

## 6020B Metals (ICP/MS)-Total Recoverable

Analysis Method: 6020B      Analysis Batch: 280-396711      Instrument ID: MT\_078  
Prep Method: 3005A      Prep Batch: 280-396509      Lab File ID: 212SMPL\_112717.D  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/28/2017 0113      Final Weight/Volume: 50 mL  
Prep Date: 11/27/2017 1610

Analyte	Result (mg/L)	Qualifier	MDL	RL
Antimony, Total	ND		0.00040	0.0010
Barium, Total	0.0035		0.00029	0.0010
Beryllium, Total	ND		0.000080	0.0010
Cadmium, Total	ND		0.00027	0.00020
Chromium, Total	0.0073		0.00050	0.0030
Copper, Total	ND		0.00056	0.0020
Lead, Total	ND		0.00018	0.0010
Manganese, Total	0.0011		0.00031	0.0010
Nickel, Total	0.0020	J	0.00030	0.0040
Selenium, Total	ND		0.00070	0.0010
Silver, Total	ND		0.000033	0.0020
Thallium, Total	ND		0.000050	0.0010
Vanadium, Total	0.0031		0.00050	0.0020
Zinc, Total	ND		0.0020	0.0050

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-16**

Lab Sample ID: 280-103543-3

Date Sampled: 11/13/2017 1255

Client Matrix: Water

Date Received: 11/14/2017 0850

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## 6020B Metals (ICP/MS)-Dissolved

Analysis Method: 6020B

Analysis Batch: 280-396328

Instrument ID: MT\_077

Prep Method: 3005A

Prep Batch: 280-395711

Lab File ID: 074SMPL.d

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 11/21/2017 1852

Final Weight/Volume: 50 mL

Prep Date: 11/21/2017 0752

Analyte	Result (mg/L)	Qualifier	MDL	RL
Manganese, Dissolved	0.00052	J	0.00031	0.0010

## Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-39**

Lab Sample ID: 280-103543-4  
Client Matrix: Water

Date Sampled: 11/13/2017 1420  
Date Received: 11/14/2017 0850

### 6010D Metals (ICP)-Total Recoverable

Analysis Method: 6010D	Analysis Batch: 280-396876	Instrument ID: MT_051
Prep Method: 3005A	Prep Batch: 280-396510	Lab File ID: 51A112817A.csv
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/28/2017 2106		Final Weight/Volume: 50 mL
Prep Date: 11/28/2017 0806		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Cobalt, Total	0.0065		0.0012	0.0030
Iron, Total	36		0.022	0.060

### 6010D Metals (ICP)-Dissolved

Analysis Method: 6010D	Analysis Batch: 280-396202	Instrument ID: MT_025
Prep Method: 3005A	Prep Batch: 280-395708	Lab File ID: 25A112117b.asc
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/21/2017 1825		Final Weight/Volume: 50 mL
Prep Date: 11/21/2017 0752		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Calcium, Dissolved	12		0.035	0.040
Iron, Dissolved	34		0.022	0.060
Magnesium, Dissolved	7.3		0.011	0.050
Potassium, Dissolved	0.28	J	0.24	1.0
Sodium, Dissolved	8.4		0.12	1.0

### 6020B Metals (ICP/MS)-Total Recoverable

Analysis Method: 6020B	Analysis Batch: 280-396711	Instrument ID: MT_078
Prep Method: 3005A	Prep Batch: 280-396509	Lab File ID: 213SMPL_112717.D
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/28/2017 0116		Final Weight/Volume: 50 mL
Prep Date: 11/27/2017 1610		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Antimony, Total	ND		0.00040	0.0010
Barium, Total	0.012		0.00029	0.0010
Beryllium, Total	ND		0.000080	0.0010
Cadmium, Total	ND		0.00027	0.00020
Chromium, Total	0.00087	J	0.00050	0.0030
Copper, Total	ND		0.00056	0.0020
Lead, Total	0.00019	J	0.00018	0.0010
Manganese, Total	0.43		0.00031	0.0010
Nickel, Total	0.0026	J	0.00030	0.0040
Selenium, Total	ND		0.00070	0.0010
Silver, Total	ND		0.000033	0.0020
Thallium, Total	ND		0.000050	0.0010
Vanadium, Total	0.0013	J	0.00050	0.0020
Zinc, Total	ND		0.0020	0.0050

## Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-39**

Lab Sample ID: 280-103543-4

Date Sampled: 11/13/2017 1420

Client Matrix: Water

Date Received: 11/14/2017 0850

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### 6020B Metals (ICP/MS)-Dissolved

Analysis Method: 6020B

Analysis Batch: 280-396328

Instrument ID: MT\_077

Prep Method: 3005A

Prep Batch: 280-395711

Lab File ID: 075SMPL.d

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 11/21/2017 1855

Final Weight/Volume: 50 mL

Prep Date: 11/21/2017 0752

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Analyte	Result (mg/L)	Qualifier	MDL	RL
Manganese, Dissolved	0.46		0.00031	0.0010

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## Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-29A**

Lab Sample ID: 280-103543-5

Date Sampled: 11/13/2017 1400

Client Matrix: Water

Date Received: 11/14/2017 0850

### 6010D Metals (ICP)-Total Recoverable

Analysis Method: 6010D	Analysis Batch: 280-396876	Instrument ID: MT_051
Prep Method: 3005A	Prep Batch: 280-396510	Lab File ID: 51A112817A.csv
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/28/2017 2109		Final Weight/Volume: 50 mL
Prep Date: 11/28/2017 0806		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Cobalt, Total	0.0026	J	0.0012	0.0030
Iron, Total	4.0		0.022	0.060

### 6010D Metals (ICP)-Dissolved

Analysis Method: 6010D	Analysis Batch: 280-396202	Instrument ID: MT_025
Prep Method: 3005A	Prep Batch: 280-395708	Lab File ID: 25A112117b.asc
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/21/2017 1828		Final Weight/Volume: 50 mL
Prep Date: 11/21/2017 0752		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Calcium, Dissolved	5.8		0.035	0.040
Iron, Dissolved	3.5		0.022	0.060
Magnesium, Dissolved	3.3		0.011	0.050
Potassium, Dissolved	0.37	J	0.24	1.0
Sodium, Dissolved	3.3		0.12	1.0

### 6020B Metals (ICP/MS)-Total Recoverable

Analysis Method: 6020B	Analysis Batch: 280-396711	Instrument ID: MT_078
Prep Method: 3005A	Prep Batch: 280-396509	Lab File ID: 214SMPL_112717.D
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/28/2017 0120		Final Weight/Volume: 50 mL
Prep Date: 11/27/2017 1610		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Antimony, Total	ND		0.00040	0.0010
Barium, Total	0.0076		0.00029	0.0010
Beryllium, Total	ND		0.000080	0.0010
Cadmium, Total	ND		0.00027	0.00020
Chromium, Total	ND		0.00050	0.0030
Copper, Total	0.00080	J	0.00056	0.0020
Lead, Total	ND		0.00018	0.0010
Manganese, Total	1.2		0.00031	0.0010
Nickel, Total	0.0020	J	0.00030	0.0040
Selenium, Total	ND		0.00070	0.0010
Silver, Total	ND		0.000033	0.0020
Thallium, Total	ND		0.000050	0.0010
Vanadium, Total	0.00095	J	0.00050	0.0020
Zinc, Total	0.0029	J	0.0020	0.0050

## Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-29A**

Lab Sample ID: 280-103543-5

Date Sampled: 11/13/2017 1400

Client Matrix: Water

Date Received: 11/14/2017 0850

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### 6020B Metals (ICP/MS)-Dissolved

Analysis Method: 6020B

Analysis Batch: 280-396328

Instrument ID: MT\_077

Prep Method: 3005A

Prep Batch: 280-395711

Lab File ID: 076SMPL.d

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 11/21/2017 1859

Final Weight/Volume: 50 mL

Prep Date: 11/21/2017 0752

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Analyte	Result (mg/L)	Qualifier	MDL	RL
Manganese, Dissolved	1.1		0.00031	0.0010

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# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-42**

Lab Sample ID: 280-103543-6

Date Sampled: 11/13/2017 1500

Client Matrix: Water

Date Received: 11/14/2017 0850

## 6010D Metals (ICP)-Total Recoverable

Analysis Method: 6010D      Analysis Batch: 280-396876      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-396510      Lab File ID: 51A112817A.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/28/2017 2112      Final Weight/Volume: 50 mL  
Prep Date: 11/28/2017 0806

Analyte	Result (mg/L)	Qualifier	MDL	RL
Cobalt, Total	0.0013	J	0.0012	0.0030
Iron, Total	26		0.022	0.060

## 6010D Metals (ICP)-Dissolved

Analysis Method: 6010D      Analysis Batch: 280-396202      Instrument ID: MT\_025  
Prep Method: 3005A      Prep Batch: 280-395708      Lab File ID: 25A112117b.asc  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/21/2017 1831      Final Weight/Volume: 50 mL  
Prep Date: 11/21/2017 0752

Analyte	Result (mg/L)	Qualifier	MDL	RL
Calcium, Dissolved	42		0.035	0.040
Iron, Dissolved	23		0.022	0.060
Magnesium, Dissolved	14		0.011	0.050
Potassium, Dissolved	8.5		0.24	1.0
Sodium, Dissolved	20		0.12	1.0

## 6020B Metals (ICP/MS)-Total Recoverable

Analysis Method: 6020B      Analysis Batch: 280-396711      Instrument ID: MT\_078  
Prep Method: 3005A      Prep Batch: 280-396509      Lab File ID: 215SMPL\_112717.D  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/28/2017 0123      Final Weight/Volume: 50 mL  
Prep Date: 11/27/2017 1610

Analyte	Result (mg/L)	Qualifier	MDL	RL
Antimony, Total	ND		0.00040	0.0010
Barium, Total	0.11		0.00029	0.0010
Beryllium, Total	ND		0.000080	0.0010
Cadmium, Total	ND		0.00027	0.00020
Chromium, Total	0.00064	J	0.00050	0.0030
Copper, Total	ND		0.00056	0.0020
Lead, Total	ND		0.00018	0.0010
Manganese, Total	4.4		0.00031	0.0010
Nickel, Total	0.0012	J	0.00030	0.0040
Selenium, Total	ND		0.00070	0.0010
Silver, Total	ND		0.000033	0.0020
Thallium, Total	ND		0.000050	0.0010
Vanadium, Total	0.0012	J	0.00050	0.0020
Zinc, Total	ND		0.00020	0.0050



## Analytical Data

Client: Waste Management

Job Number: 280-103543-1

**Client Sample ID: MW-42**

Lab Sample ID: 280-103543-6

Date Sampled: 11/13/2017 1500

Client Matrix: Water

Date Received: 11/14/2017 0850

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### 6020B Metals (ICP/MS)-Dissolved

Analysis Method: 6020B

Analysis Batch: 280-396328

Instrument ID: MT\_077

Prep Method: 3005A

Prep Batch: 280-395711

Lab File ID: 077SMPL.d

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 11/21/2017 1903

Final Weight/Volume: 50 mL

Prep Date: 11/21/2017 0752

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Analyte	Result (mg/L)	Qualifier	MDL	RL
Manganese, Dissolved	4.3		0.00031	0.0010

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Client: Waste Management

Job Number: 280-103543-1

General Chemistry

Client Sample ID: MW-13A

Lab Sample ID: 280-103543-1

Date Sampled: 11/13/2017 1121

Client Matrix: Water

Date Received: 11/14/2017 0850

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Chloride	1.7		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397850		Analysis Date: 12/07/2017 1043				
Sulfate	1.8		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397850		Analysis Date: 12/07/2017 1043				
Ammonia (as N)	ND		mg/L	0.030	0.030	1.0	350.1
	Analysis Batch: 280-397335		Analysis Date: 12/01/2017 1327				
Nitrate as N	0.42		mg/L	0.050	0.050	1.0	353.2
	Analysis Batch: 280-398053		Analysis Date: 12/08/2017 1127				
Alkalinity, Total (As CaCO3)	81		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396052		Analysis Date: 11/20/2017 1405				
Alkalinity, Bicarbonate (As CaCO3)	81		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396052		Analysis Date: 11/20/2017 1405				
Total Dissolved Solids (TDS)	110		mg/L	5.0	5.0	1.0	SM 2540C
	Analysis Batch: 280-395321		Analysis Date: 11/15/2017 0752				
Total Suspended Solids	ND		mg/L	4.0	4.0	1.0	SM 2540D
	Analysis Batch: 280-395735		Analysis Date: 11/17/2017 1324				
Total Organic Carbon - Average	ND		mg/L	1.0	1.0	1.0	SM 5310B
	Analysis Batch: 280-398110		Analysis Date: 12/07/2017 1951				

Client: Waste Management

Job Number: 280-103543-1

General Chemistry

Client Sample ID: MW-13B

Lab Sample ID: 280-103543-2

Date Sampled: 11/13/2017 1120

Client Matrix: Water

Date Received: 11/14/2017 0850

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Chloride	1.9		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397850		Analysis Date: 12/07/2017 1150				
Sulfate	2.9		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397850		Analysis Date: 12/07/2017 1150				
Ammonia (as N)	ND		mg/L	0.030	0.030	1.0	350.1
	Analysis Batch: 280-397335		Analysis Date: 12/01/2017 1333				
Nitrate as N	0.44		mg/L	0.050	0.050	1.0	353.2
	Analysis Batch: 280-398053		Analysis Date: 12/08/2017 1127				
Alkalinity, Total (As CaCO3)	81		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396052		Analysis Date: 11/20/2017 1400				
Alkalinity, Bicarbonate (As CaCO3)	81		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396052		Analysis Date: 11/20/2017 1400				
Total Dissolved Solids (TDS)	110		mg/L	5.0	5.0	1.0	SM 2540C
	Analysis Batch: 280-395321		Analysis Date: 11/15/2017 0752				
Total Suspended Solids	ND		mg/L	4.0	4.0	1.0	SM 2540D
	Analysis Batch: 280-395735		Analysis Date: 11/17/2017 1324				
Total Organic Carbon - Average	ND		mg/L	1.0	1.0	1.0	SM 5310B
	Analysis Batch: 280-398110		Analysis Date: 12/07/2017 2006				

Client: Waste Management

Job Number: 280-103543-1

General Chemistry

Client Sample ID: MW-16

Lab Sample ID: 280-103543-3

Date Sampled: 11/13/2017 1255

Client Matrix: Water

Date Received: 11/14/2017 0850

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Chloride	ND		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397850		Analysis Date: 12/07/2017 1207				
Sulfate	1.0		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397850		Analysis Date: 12/07/2017 1207				
Ammonia (as N)	ND		mg/L	0.030	0.030	1.0	350.1
	Analysis Batch: 280-397335		Analysis Date: 12/01/2017 1335				
Nitrate as N	0.28		mg/L	0.050	0.050	1.0	353.2
	Analysis Batch: 280-398053		Analysis Date: 12/08/2017 1127				
Alkalinity, Total (As CaCO3)	50		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396052		Analysis Date: 11/20/2017 1355				
Alkalinity, Bicarbonate (As CaCO3)	50		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396052		Analysis Date: 11/20/2017 1355				
Total Dissolved Solids (TDS)	80		mg/L	5.0	5.0	1.0	SM 2540C
	Analysis Batch: 280-395321		Analysis Date: 11/15/2017 0752				
Total Suspended Solids	ND		mg/L	4.0	4.0	1.0	SM 2540D
	Analysis Batch: 280-395735		Analysis Date: 11/17/2017 1324				
Total Organic Carbon - Average	ND		mg/L	1.0	1.0	1.0	SM 5310B
	Analysis Batch: 280-398110		Analysis Date: 12/07/2017 2020				

Client: Waste Management

Job Number: 280-103543-1

General Chemistry

Client Sample ID: MW-39

Lab Sample ID: 280-103543-4

Date Sampled: 11/13/2017 1420

Client Matrix: Water

Date Received: 11/14/2017 0850

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Chloride	5.5		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397850		Analysis Date: 12/07/2017 1224				
Sulfate	ND		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397850		Analysis Date: 12/07/2017 1224				
Ammonia (as N)	0.47		mg/L	0.030	0.030	1.0	350.1
	Analysis Batch: 280-397335		Analysis Date: 12/01/2017 1337				
Nitrate as N	ND		mg/L	0.050	0.050	1.0	353.2
	Analysis Batch: 280-398053		Analysis Date: 12/08/2017 1127				
Alkalinity, Total (As CaCO3)	98		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396190		Analysis Date: 11/21/2017 1748				
Alkalinity, Bicarbonate (As CaCO3)	98		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396190		Analysis Date: 11/21/2017 1748				
Total Dissolved Solids (TDS)	150		mg/L	5.0	5.0	1.0	SM 2540C
	Analysis Batch: 280-395321		Analysis Date: 11/15/2017 0752				
Total Suspended Solids	11		mg/L	4.0	4.0	1.0	SM 2540D
	Analysis Batch: 280-395735		Analysis Date: 11/17/2017 1324				
Total Organic Carbon - Average	2.8		mg/L	1.0	1.0	1.0	SM 5310B
	Analysis Batch: 280-398110		Analysis Date: 12/07/2017 2115				

Client: Waste Management

Job Number: 280-103543-1

General Chemistry

Client Sample ID: MW-29A

Lab Sample ID: 280-103543-5

Date Sampled: 11/13/2017 1400

Client Matrix: Water

Date Received: 11/14/2017 0850

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Chloride	1.5		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397850		Analysis Date: 12/07/2017 1241				
Sulfate	ND		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397850		Analysis Date: 12/07/2017 1241				
Ammonia (as N)	0.066		mg/L	0.030	0.030	1.0	350.1
	Analysis Batch: 280-397335		Analysis Date: 12/01/2017 1339				
Nitrate as N	ND		mg/L	0.050	0.050	1.0	353.2
	Analysis Batch: 280-398053		Analysis Date: 12/08/2017 1127				
Alkalinity, Total (As CaCO3)	35		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396052		Analysis Date: 11/20/2017 1346				
Alkalinity, Bicarbonate (As CaCO3)	35		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396052		Analysis Date: 11/20/2017 1346				
Total Dissolved Solids (TDS)	59		mg/L	5.0	5.0	1.0	SM 2540C
	Analysis Batch: 280-395321		Analysis Date: 11/15/2017 0752				
Total Suspended Solids	ND		mg/L	4.0	4.0	1.0	SM 2540D
	Analysis Batch: 280-395735		Analysis Date: 11/17/2017 1324				
Total Organic Carbon - Average	1.6		mg/L	1.0	1.0	1.0	SM 5310B
	Analysis Batch: 280-398110		Analysis Date: 12/07/2017 2131				

Client: Waste Management

Job Number: 280-103543-1

General Chemistry

Client Sample ID: MW-42

Lab Sample ID: 280-103543-6

Date Sampled: 11/13/2017 1500

Client Matrix: Water

Date Received: 11/14/2017 0850

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Chloride	21		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397850		Analysis Date: 12/07/2017 1257				
Sulfate	14		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-397850		Analysis Date: 12/07/2017 1257				
Ammonia (as N)	4.5		mg/L	0.030	0.030	1.0	350.1
	Analysis Batch: 280-397335		Analysis Date: 12/01/2017 1341				
Nitrate as N	ND		mg/L	0.050	0.050	1.0	353.2
	Analysis Batch: 280-398053		Analysis Date: 12/08/2017 1127				
Alkalinity, Total (As CaCO3)	210		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396190		Analysis Date: 11/21/2017 1755				
Alkalinity, Bicarbonate (As CaCO3)	210		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396190		Analysis Date: 11/21/2017 1755				
Total Dissolved Solids (TDS)	290		mg/L	5.0	5.0	1.0	SM 2540C
	Analysis Batch: 280-395321		Analysis Date: 11/15/2017 0752				
Total Suspended Solids	10		mg/L	4.0	4.0	1.0	SM 2540D
	Analysis Batch: 280-395735		Analysis Date: 11/17/2017 1324				
Total Organic Carbon - Average	6.8		mg/L	1.0	1.0	1.0	SM 5310B
	Analysis Batch: 280-398110		Analysis Date: 12/07/2017 2152				

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

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## Field Service / Mobile Lab

**Client Sample ID: MW-13A**

Lab Sample ID: 280-103543-1

Client Matrix: Water

Date Sampled: 11/13/2017 1121

Date Received: 11/14/2017 0850

Analyte	Result	Qual	Units	Dil	Method	Analysis Batch	Date Analyzed	Date Prepared
Depth to water	58.54		ft	1.0	Field Sampling	280-395824	11/13/2017	1221
Specific Conductivity	171		umhos/cm	1.0	Field Sampling	280-395824	11/13/2017	1221
Dissolved Oxygen	6.11		mg/L	1.0	Field Sampling	280-395824	11/13/2017	1221
eH	158.4		millivolts	1.0	Field Sampling	280-395824	11/13/2017	1221
Turbidity	1.69		NTU	1.0	Field Sampling	280-395824	11/13/2017	1221
Temperature	9.41		Degrees C	1.0	Field Sampling	280-395824	11/13/2017	1221
pH	6.79		SU	1.0	Field Sampling	280-395824	11/13/2017	1221



# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

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## Field Service / Mobile Lab

**Client Sample ID: MW-13B**

Lab Sample ID: 280-103543-2

Client Matrix: Water

Date Sampled: 11/13/2017 1120

Date Received: 11/14/2017 0850

Analyte	Result	Qual	Units	Dil	Method	Analysis Batch	Date Analyzed	Date Prepared
Depth to water	59.09		ft	1.0	Field Sampling	280-395824	11/13/2017	1220
Specific Conductivity	170		umhos/cm	1.0	Field Sampling	280-395824	11/13/2017	1220
Dissolved Oxygen	6.59		mg/L	1.0	Field Sampling	280-395824	11/13/2017	1220
eH	77.0		millivolts	1.0	Field Sampling	280-395824	11/13/2017	1220
Turbidity	2.26		NTU	1.0	Field Sampling	280-395824	11/13/2017	1220
Temperature	9.54		Degrees C	1.0	Field Sampling	280-395824	11/13/2017	1220
pH	7.49		SU	1.0	Field Sampling	280-395824	11/13/2017	1220

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

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## Field Service / Mobile Lab

**Client Sample ID: MW-16**

Lab Sample ID: 280-103543-3

Client Matrix: Water

Date Sampled: 11/13/2017 1255

Date Received: 11/14/2017 0850

Analyte	Result	Qual	Units	Dil	Method	Analysis Batch	Date Analyzed	Date Prepared
Depth to water	59.07		ft	1.0	Field Sampling	280-395824	11/13/2017	1355
Specific Conductivity	104		umhos/cm	1.0	Field Sampling	280-395824	11/13/2017	1355
Dissolved Oxygen	5.61		mg/L	1.0	Field Sampling	280-395824	11/13/2017	1355
eH	117.0		millivolts	1.0	Field Sampling	280-395824	11/13/2017	1355
Turbidity	1.71		NTU	1.0	Field Sampling	280-395824	11/13/2017	1355
Temperature	9.30		Degrees C	1.0	Field Sampling	280-395824	11/13/2017	1355
pH	6.35		SU	1.0	Field Sampling	280-395824	11/13/2017	1355

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

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## Field Service / Mobile Lab

**Client Sample ID: MW-39**

Lab Sample ID: 280-103543-4

Client Matrix: Water

Date Sampled: 11/13/2017 1420

Date Received: 11/14/2017 0850

Analyte	Result	Qual	Units	Dil	Method	Analysis Batch	Date Analyzed	Date Prepared
Depth to water	20.46		ft	1.0	Field Sampling	280-395824	11/13/2017	1520
Specific Conductivity	262		umhos/cm	1.0	Field Sampling	280-395824	11/13/2017	1520
Dissolved Oxygen	0.15		mg/L	1.0	Field Sampling	280-395824	11/13/2017	1520
eH	-241.0		millivolts	1.0	Field Sampling	280-395824	11/13/2017	1520
Turbidity	3.22		NTU	1.0	Field Sampling	280-395824	11/13/2017	1520
Temperature	11.25		Degrees C	1.0	Field Sampling	280-395824	11/13/2017	1520
pH	6.26		SU	1.0	Field Sampling	280-395824	11/13/2017	1520

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

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## Field Service / Mobile Lab

**Client Sample ID: MW-29A**

Lab Sample ID: 280-103543-5

Date Sampled: 11/13/2017 1400

Client Matrix: Water

Date Received: 11/14/2017 0850

Analyte	Result	Qual	Units	Dil	Method	Analysis Batch	Date Analyzed	Date Prepared
Depth to water	12.67		ft	1.0	Field Sampling	280-395824	11/13/2017	1500
Specific Conductivity	87		umhos/cm	1.0	Field Sampling	280-395824	11/13/2017	1500
Dissolved Oxygen	0.21		mg/L	1.0	Field Sampling	280-395824	11/13/2017	1500
eH	2.9		millivolts	1.0	Field Sampling	280-395824	11/13/2017	1500
Turbidity	3.33		NTU	1.0	Field Sampling	280-395824	11/13/2017	1500
Temperature	10.90		Degrees C	1.0	Field Sampling	280-395824	11/13/2017	1500
pH	6.26		SU	1.0	Field Sampling	280-395824	11/13/2017	1500

# Analytical Data

Client: Waste Management

Job Number: 280-103543-1

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## Field Service / Mobile Lab

Client Sample ID: MW-42

Lab Sample ID: 280-103543-6

Client Matrix: Water

Date Sampled: 11/13/2017 1500

Date Received: 11/14/2017 0850

Analyte	Result	Qual	Units	Dil	Method	Analysis Batch	Date Analyzed	Date Prepared
Depth to water	26.87		ft	1.0	Field Sampling	280-395824	11/13/2017	1600
Specific Conductivity	560		umhos/cm	1.0	Field Sampling	280-395824	11/13/2017	1600
Dissolved Oxygen	0.19		mg/L	1.0	Field Sampling	280-395824	11/13/2017	1600
eH	-79.0		millivolts	1.0	Field Sampling	280-395824	11/13/2017	1600
Turbidity	2.72		NTU	1.0	Field Sampling	280-395824	11/13/2017	1600
Temperature	12.04		Degrees C	1.0	Field Sampling	280-395824	11/13/2017	1600
pH	6.70		SU	1.0	Field Sampling	280-395824	11/13/2017	1600

## DATA REPORTING QUALIFIERS

Client: Waste Management

Job Number: 280-103543-1

<b>Lab Section</b>	<b>Qualifier</b>	<b>Description</b>
GC/MS VOA		
	F1	MS and/or MSD Recovery is outside acceptance limits.
	F2	MS/MSD RPD exceeds control limits
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
	X	Surrogate is outside control limits
Metals		
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

# QUALITY CONTROL RESULTS

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>GC/MS VOA</b>					
<b>Analysis Batch:480-388239</b>					
LCS 480-388239/4	Lab Control Sample	T	Water	8260C	
MB 480-388239/6	Method Blank	T	Water	8260C	
280-103543-1	MW-13A	T	Water	8260C	
280-103543-2	MW-13B	T	Water	8260C	
280-103543-3	MW-16	T	Water	8260C	
280-103543-4	MW-39	T	Water	8260C	
280-103543-5	MW-29A	T	Water	8260C	
280-103543-6	MW-42	T	Water	8260C	
480-127483-T-3 MS	Matrix Spike	T	Water	8260C	
480-127483-T-3 MSD	Matrix Spike Duplicate	T	Water	8260C	
<b>Analysis Batch:280-396651</b>					
LCS 280-396651/6	Lab Control Sample	T	Water	8260B SIM	
MB 280-396651/8	Method Blank	T	Water	8260B SIM	
280-103543-1	MW-13A	T	Water	8260B SIM	
280-103543-1MS	Matrix Spike	T	Water	8260B SIM	
280-103543-1MSD	Matrix Spike Duplicate	T	Water	8260B SIM	
280-103543-2	MW-13B	T	Water	8260B SIM	
280-103543-3	MW-16	T	Water	8260B SIM	
280-103543-4	MW-39	T	Water	8260B SIM	
280-103543-5	MW-29A	T	Water	8260B SIM	
280-103543-6	MW-42	T	Water	8260B SIM	

#### Report Basis

T = Total



## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Prep Batch: 280-395708</b>					
LCS 280-395708/2-A	Lab Control Sample	R	Water	3005A	
MB 280-395708/1-A	Method Blank	R	Water	3005A	
280-103420-A-6-B MS	Matrix Spike	D	Water	3005A	
280-103420-A-6-C MSD	Matrix Spike Duplicate	D	Water	3005A	
280-103543-1	MW-13A	D	Water	3005A	
280-103543-2	MW-13B	D	Water	3005A	
280-103543-3	MW-16	D	Water	3005A	
280-103543-4	MW-39	D	Water	3005A	
280-103543-5	MW-29A	D	Water	3005A	
280-103543-6	MW-42	D	Water	3005A	
<b>Prep Batch: 280-395711</b>					
LCS 280-395711/2-A	Lab Control Sample	R	Water	3005A	
MB 280-395711/1-A	Method Blank	R	Water	3005A	
280-103420-A-6-E MS	Matrix Spike	D	Water	3005A	
280-103420-A-6-F MSD	Matrix Spike Duplicate	D	Water	3005A	
280-103543-1	MW-13A	D	Water	3005A	
280-103543-2	MW-13B	D	Water	3005A	
280-103543-3	MW-16	D	Water	3005A	
280-103543-4	MW-39	D	Water	3005A	
280-103543-5	MW-29A	D	Water	3005A	
280-103543-6	MW-42	D	Water	3005A	
<b>Analysis Batch:280-396202</b>					
LCS 280-395708/2-A	Lab Control Sample	R	Water	6010D	280-395708
MB 280-395708/1-A	Method Blank	R	Water	6010D	280-395708
280-103420-A-6-B MS	Matrix Spike	D	Water	6010D	280-395708
280-103420-A-6-C MSD	Matrix Spike Duplicate	D	Water	6010D	280-395708
280-103543-1	MW-13A	D	Water	6010D	280-395708
280-103543-2	MW-13B	D	Water	6010D	280-395708
280-103543-3	MW-16	D	Water	6010D	280-395708
280-103543-4	MW-39	D	Water	6010D	280-395708
280-103543-5	MW-29A	D	Water	6010D	280-395708
280-103543-6	MW-42	D	Water	6010D	280-395708

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Analysis Batch: 280-396328</b>					
LCS 280-395711/2-A	Lab Control Sample	R	Water	6020B	280-395711
MB 280-395711/1-A	Method Blank	R	Water	6020B	280-395711
280-103420-A-6-E MS	Matrix Spike	D	Water	6020B	280-395711
280-103420-A-6-F MSD	Matrix Spike Duplicate	D	Water	6020B	280-395711
280-103543-1	MW-13A	D	Water	6020B	280-395711
280-103543-2	MW-13B	D	Water	6020B	280-395711
280-103543-3	MW-16	D	Water	6020B	280-395711
280-103543-4	MW-39	D	Water	6020B	280-395711
280-103543-5	MW-29A	D	Water	6020B	280-395711
280-103543-6	MW-42	D	Water	6020B	280-395711
<b>Prep Batch: 280-396509</b>					
LCS 280-396509/2-A	Lab Control Sample	R	Water	3005A	
MB 280-396509/1-A	Method Blank	R	Water	3005A	
280-103543-1	MW-13A	R	Water	3005A	
280-103543-2	MW-13B	R	Water	3005A	
280-103543-3	MW-16	R	Water	3005A	
280-103543-4	MW-39	R	Water	3005A	
280-103543-5	MW-29A	R	Water	3005A	
280-103543-6	MW-42	R	Water	3005A	
280-103614-E-1-B MS	Matrix Spike	R	Water	3005A	
280-103614-E-1-C MSD	Matrix Spike Duplicate	R	Water	3005A	
<b>Prep Batch: 280-396510</b>					
LCS 280-396510/2-A	Lab Control Sample	R	Water	3005A	
MB 280-396510/1-A	Method Blank	R	Water	3005A	
280-103543-1	MW-13A	R	Water	3005A	
280-103543-2	MW-13B	R	Water	3005A	
280-103543-3	MW-16	R	Water	3005A	
280-103543-4	MW-39	R	Water	3005A	
280-103543-5	MW-29A	R	Water	3005A	
280-103543-6	MW-42	R	Water	3005A	
280-103614-E-2-C MS	Matrix Spike	R	Water	3005A	
280-103614-E-2-D MSD	Matrix Spike Duplicate	R	Water	3005A	

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Analysis Batch:280-396711</b>					
LCS 280-396509/2-A	Lab Control Sample	R	Water	6020B	280-396509
MB 280-396509/1-A	Method Blank	R	Water	6020B	280-396509
280-103543-1	MW-13A	R	Water	6020B	280-396509
280-103543-2	MW-13B	R	Water	6020B	280-396509
280-103543-3	MW-16	R	Water	6020B	280-396509
280-103543-4	MW-39	R	Water	6020B	280-396509
280-103543-5	MW-29A	R	Water	6020B	280-396509
280-103543-6	MW-42	R	Water	6020B	280-396509
280-103614-E-1-B MS	Matrix Spike	R	Water	6020B	280-396509
280-103614-E-1-C MSD	Matrix Spike Duplicate	R	Water	6020B	280-396509

<b>Analysis Batch:280-396876</b>					
LCS 280-396510/2-A	Lab Control Sample	R	Water	6010D	280-396510
MB 280-396510/1-A	Method Blank	R	Water	6010D	280-396510
280-103543-1	MW-13A	R	Water	6010D	280-396510
280-103543-2	MW-13B	R	Water	6010D	280-396510
280-103543-3	MW-16	R	Water	6010D	280-396510
280-103543-4	MW-39	R	Water	6010D	280-396510
280-103543-5	MW-29A	R	Water	6010D	280-396510
280-103543-6	MW-42	R	Water	6010D	280-396510
280-103614-E-2-C MS	Matrix Spike	R	Water	6010D	280-396510
280-103614-E-2-D MSD	Matrix Spike Duplicate	R	Water	6010D	280-396510

**Report Basis**

D = Dissolved

R = Total Recoverable

**Field Service / Mobile Lab**

<b>Analysis Batch:280-395824</b>					
280-103543-1	MW-13A	T	Water	Field Sampling	
280-103543-2	MW-13B	T	Water	Field Sampling	
280-103543-3	MW-16	T	Water	Field Sampling	
280-103543-4	MW-39	T	Water	Field Sampling	
280-103543-5	MW-29A	T	Water	Field Sampling	
280-103543-6	MW-42	T	Water	Field Sampling	

**Report Basis**

T = Total

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-395321</b>					
LCS 280-395321/2	Lab Control Sample	T	Water	SM 2540C	
MB 280-395321/1	Method Blank	T	Water	SM 2540C	
280-103543-1	MW-13A	T	Water	SM 2540C	
280-103543-1DU	Duplicate	T	Water	SM 2540C	
280-103543-2	MW-13B	T	Water	SM 2540C	
280-103543-3	MW-16	T	Water	SM 2540C	
280-103543-4	MW-39	T	Water	SM 2540C	
280-103543-5	MW-29A	T	Water	SM 2540C	
280-103543-6	MW-42	T	Water	SM 2540C	
280-103548-A-2 DU	Duplicate	T	Water	SM 2540C	
<b>Analysis Batch:280-395735</b>					
LCS 280-395735/1	Lab Control Sample	T	Water	SM 2540D	
MB 280-395735/2	Method Blank	T	Water	SM 2540D	
280-103543-1	MW-13A	T	Water	SM 2540D	
280-103543-1DU	Duplicate	T	Water	SM 2540D	
280-103543-2	MW-13B	T	Water	SM 2540D	
280-103543-3	MW-16	T	Water	SM 2540D	
280-103543-4	MW-39	T	Water	SM 2540D	
280-103543-5	MW-29A	T	Water	SM 2540D	
280-103543-6	MW-42	T	Water	SM 2540D	
<b>Analysis Batch:280-396052</b>					
LCS 280-396052/4	Lab Control Sample	T	Water	SM 2320B	
MB 280-396052/5	Method Blank	T	Water	SM 2320B	
280-103543-1	MW-13A	T	Water	SM 2320B	
280-103543-2	MW-13B	T	Water	SM 2320B	
280-103543-3	MW-16	T	Water	SM 2320B	
280-103543-5	MW-29A	T	Water	SM 2320B	
280-103543-5DU	Duplicate	T	Water	SM 2320B	
<b>Analysis Batch:280-396190</b>					
LCS 280-396190/4	Lab Control Sample	T	Water	SM 2320B	
MB 280-396190/5	Method Blank	T	Water	SM 2320B	
280-102336-A-1 DU	Duplicate	T	Water	SM 2320B	
280-103543-4	MW-39	T	Water	SM 2320B	
280-103543-5	MW-29A	T	Water	SM 2320B	
280-103543-6	MW-42	T	Water	SM 2320B	

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-397335</b>					
LCS 280-397335/18	Lab Control Sample	T	Water	350.1	
LCSD 280-397335/19	Lab Control Sample Duplicate	T	Water	350.1	
MB 280-397335/20	Method Blank	T	Water	350.1	
280-103543-1	MW-13A	T	Water	350.1	
280-103543-1MS	Matrix Spike	T	Water	350.1	
280-103543-1MSD	Matrix Spike Duplicate	T	Water	350.1	
280-103543-2	MW-13B	T	Water	350.1	
280-103543-3	MW-16	T	Water	350.1	
280-103543-4	MW-39	T	Water	350.1	
280-103543-5	MW-29A	T	Water	350.1	
280-103543-6	MW-42	T	Water	350.1	
<b>Analysis Batch:280-397850</b>					
LCS 280-397850/4	Lab Control Sample	T	Water	300.0	
LCSD 280-397850/5	Lab Control Sample Duplicate	T	Water	300.0	
MB 280-397850/6	Method Blank	T	Water	300.0	
280-103543-1	MW-13A	T	Water	300.0	
280-103543-1DU	Duplicate	T	Water	300.0	
280-103543-1MS	Matrix Spike	T	Water	300.0	
280-103543-1MSD	Matrix Spike Duplicate	T	Water	300.0	
280-103543-2	MW-13B	T	Water	300.0	
280-103543-3	MW-16	T	Water	300.0	
280-103543-4	MW-39	T	Water	300.0	
280-103543-5	MW-29A	T	Water	300.0	
280-103543-6	MW-42	T	Water	300.0	
<b>Analysis Batch:280-398053</b>					
MB 280-398053/1	Method Blank	T	Water	353.2	
280-103543-1	MW-13A	T	Water	353.2	
280-103543-2	MW-13B	T	Water	353.2	
280-103543-3	MW-16	T	Water	353.2	
280-103543-4	MW-39	T	Water	353.2	
280-103543-5	MW-29A	T	Water	353.2	
280-103543-6	MW-42	T	Water	353.2	

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-398110</b>					
LCS 280-398110/3	Lab Control Sample	T	Water	SM 5310B	
MB 280-398110/4	Method Blank	T	Water	SM 5310B	
280-103543-1	MW-13A	T	Water	SM 5310B	
280-103543-2	MW-13B	T	Water	SM 5310B	
280-103543-3	MW-16	T	Water	SM 5310B	
280-103543-4	MW-39	T	Water	SM 5310B	
280-103543-5	MW-29A	T	Water	SM 5310B	
280-103543-6	MW-42	T	Water	SM 5310B	
280-103724-F-3 MS	Matrix Spike	T	Water	SM 5310B	
280-103724-F-3 MSD	Matrix Spike Duplicate	T	Water	SM 5310B	
<b>Analysis Batch:280-398111</b>					
LCS 280-398111/3	Lab Control Sample	T	Water	SM 5310B	
MB 280-398111/4	Method Blank	T	Water	SM 5310B	
280-103543-1	MW-13A	T	Water	SM 5310B	
280-103543-2	MW-13B	T	Water	SM 5310B	
280-103543-3	MW-16	T	Water	SM 5310B	
280-103543-4	MW-39	T	Water	SM 5310B	
280-103543-5	MW-29A	T	Water	SM 5310B	
280-103543-6	MW-42	T	Water	SM 5310B	
280-103724-F-3 MS	Matrix Spike	T	Water	SM 5310B	
280-103724-F-3 MSD	Matrix Spike Duplicate	T	Water	SM 5310B	

#### Report Basis

T = Total

Client: Waste Management

Job Number: 280-103543-1

**Surrogate Recovery Report**

**8260B SIM Volatile Organic Compounds (GC/MS)**

**Client Matrix: Water**

Lab Sample ID	Client Sample ID	DBFM %Rec
280-103543-1	MW-13A	86
280-103543-2	MW-13B	88
280-103543-3	MW-16	89
280-103543-4	MW-39	87
280-103543-5	MW-29A	90
280-103543-6	MW-42	82
MB 280-396651/8		87
LCS 280-396651/6		82
280-103543-1 MS	MW-13A MS	75X
280-103543-1 MSD	MW-13A MSD	81

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Surrogate	Acceptance Limits
DBFM = Dibromofluoromethane (Surr)	77-120

Client: Waste Management

Job Number: 280-103543-1

**Surrogate Recovery Report**

**8260C Volatile Organic Compounds by GC/MS**

**Client Matrix: Water**

Lab Sample ID	Client Sample ID	DCA %Rec	BFB %Rec	TOL %Rec
280-103543-1	MW-13A	104	91	103
280-103543-2	MW-13B	101	89	103
280-103543-3	MW-16	107	95	106
280-103543-4	MW-39	109	90	98
280-103543-5	MW-29A	104	90	100
280-103543-6	MW-42	93	96	99
MB 480-388239/6		102	88	104
LCS 480-388239/4		102	89	103
480-127483-T-3 MS		112	92	106
480-127483-T-3 MSD		99	94	103

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	77-120
BFB = 4-Bromofluorobenzene (Surr)	73-120
TOL = Toluene-d8 (Surr)	80-120



## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

**Method Blank - Batch: 280-396651**

**Method: 8260B SIM  
Preparation: 5030B**

Lab Sample ID: MB 280-396651/8	Analysis Batch: 280-396651	Instrument ID: VMS_E
Client Matrix: Water	Prep Batch: N/A	Lab File ID: E5781.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 11/27/2017 1839	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 11/27/2017 1839		
Leach Date: N/A		

Analyte	Result	Qual	MDL	RL
Vinyl chloride	ND		0.018	0.020
Surrogate	% Rec		Acceptance Limits	
Dibromofluoromethane (Surr)	87		77 - 120	

**Lab Control Sample - Batch: 280-396651**

**Method: 8260B SIM  
Preparation: 5030B**

Lab Sample ID: LCS 280-396651/6	Analysis Batch: 280-396651	Instrument ID: VMS_E
Client Matrix: Water	Prep Batch: N/A	Lab File ID: E5780.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 11/27/2017 1821	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 11/27/2017 1821		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Vinyl chloride	2.00	2.31	116	40 - 144	
Surrogate		% Rec		Acceptance Limits	
Dibromofluoromethane (Surr)		82		77 - 120	

**Quality Control Results**

Client: Waste Management

Job Number: 280-103543-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396651**

**Method: 8260B SIM  
Preparation: 5030B**

MS Lab Sample ID: 280-103543-1	Analysis Batch: 280-396651	Instrument ID: VMS_E
Client Matrix: Water	Prep Batch: N/A	Lab File ID: E5790.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 11/27/2017 2121		Final Weight/Volume: 20 mL
Prep Date: 11/27/2017 2121		20 mL
Leach Date: N/A		

MSD Lab Sample ID: 280-103543-1	Analysis Batch: 280-396651	Instrument ID: VMS_E
Client Matrix: Water	Prep Batch: N/A	Lab File ID: E5791.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 11/27/2017 2139		Final Weight/Volume: 20 mL
Prep Date: 11/27/2017 2139		20 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Vinyl chloride	96	102	40 - 144	6	24		
Surrogate	MS % Rec		MSD % Rec	Acceptance Limits			
Dibromofluoromethane (Surr)	75	X	81	77 - 120			

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396651**

**Method: 8260B SIM  
Preparation: 5030B**

MS Lab Sample ID: 280-103543-1	Units: ug/L
Client Matrix: Water	
Dilution: 1.0	
Analysis Date: 11/27/2017 2121	
Prep Date: 11/27/2017 2121	
Leach Date: N/A	

MSD Lab Sample ID: 280-103543-1
Client Matrix: Water
Dilution: 1.0
Analysis Date: 11/27/2017 2139
Prep Date: 11/27/2017 2139
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Vinyl chloride	ND	2.00	2.00	1.93	2.04

# Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

**Method Blank - Batch: 480-388239**

**Method: 8260C  
Preparation: 5030C**

Lab Sample ID: MB 480-388239/6  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/19/2017 1031  
Prep Date: 11/19/2017 1031  
Leach Date: N/A

Analysis Batch: 480-388239  
Prep Batch: N/A  
Leach Batch: N/A  
Units: ug/L

Instrument ID: HP5975T  
Lab File ID: T1982.D  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.35	1.0
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,1-Dichloropropene	ND		0.72	1.0
1,2,3-Trichlorobenzene	ND		0.41	1.0
1,2,3-Trichloropropane	ND		0.89	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2,4-Trimethylbenzene	ND		0.75	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane (EDB)	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloroethene, Total	ND		0.81	2.0
1,2-Dichloropropane	ND		0.72	1.0
1,3,5-Trichlorobenzene	ND		0.23	1.0
1,3,5-Trimethylbenzene	ND		0.77	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,3-Dichloropropane	ND		0.75	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
1,4-Dioxane	ND		9.3	40
2,2-Dichloropropane	ND		0.40	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chloroethyl vinyl ether	ND		0.96	5.0
2-Hexanone	ND		1.2	5.0
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Acetonitrile	ND		4.9	15
Acrolein	ND		0.91	20
Acrylonitrile	ND		0.83	5.0
Benzene	ND		0.41	1.0
Bromobenzene	ND		0.80	1.0
Bromochloromethane	ND		0.87	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Butyl alcohol, n-	ND		8.9	40
Butyl alcohol, tert-	ND		3.3	10
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Chlorodifluoromethane	ND		0.26	1.0

# Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

**Method Blank - Batch: 480-388239**

**Method: 8260C  
Preparation: 5030C**

Lab Sample ID: MB 480-388239/6  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/19/2017 1031  
 Prep Date: 11/19/2017 1031  
 Leach Date: N/A

Analysis Batch: 480-388239  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: ug/L

Instrument ID: HP5975T  
 Lab File ID: T1982.D  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dibromochloromethane	ND		0.32	1.0
Dibromomethane	ND		0.41	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Dichlorofluoromethane	ND		0.34	1.0
Ethyl acetate	ND		0.66	1.0
Ethyl ether	ND		0.72	1.0
Ethyl tert-butyl ether	ND		0.29	1.0
Ethylbenzene	ND		0.74	1.0
Hexachlorobutadiene	ND		0.28	1.0
Hexane	ND		0.40	10
Iodomethane	ND		0.30	1.0
Isobutanol	ND		4.8	25
Isopropyl ether	ND		0.59	1.0
Isopropylbenzene	ND		0.79	1.0
Methacrylonitrile	ND		0.69	5.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
m-Xylene & p-Xylene	ND		0.66	2.0
Naphthalene	ND		0.43	1.0
n-Butylbenzene	ND		0.64	1.0
N-Propylbenzene	ND		0.69	1.0
o-Chlorotoluene	ND		0.86	1.0
o-Xylene	ND		0.76	1.0
p-Chlorotoluene	ND		0.84	1.0
p-Cymene	ND		0.31	1.0
sec-Butylbenzene	ND		0.75	1.0
Styrene	ND		0.73	1.0
Tert-amyl methyl ether	ND		0.27	1.0
tert-Butylbenzene	ND		0.81	1.0
Tetrachloroethene	ND		0.36	1.0
Tetrahydrofuran	ND		1.3	5.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
trans-1,4-Dichloro-2-butene	ND		0.22	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0

# Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

## Method Blank - Batch: 480-388239

Method: 8260C  
Preparation: 5030C

Lab Sample ID:	MB 480-388239/6	Analysis Batch:	480-388239	Instrument ID:	HP5975T
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	T1982.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	11/19/2017 1031	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	11/19/2017 1031				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Vinyl acetate	ND		0.85	5.0
Vinyl chloride	ND		0.90	1.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102	77 - 120
4-Bromofluorobenzene (Surr)	88	73 - 120
Toluene-d8 (Surr)	104	80 - 120

## Method Blank TICs- Batch: 480-388239

Cas Number	Analyte	RT	Est. Result (ug)	Qual
67-72-1	Hexachloroethane TIC	0.00	ND	

# Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

**Lab Control Sample - Batch: 480-388239**

**Method: 8260C  
Preparation: 5030C**

Lab Sample ID: LCS 480-388239/4	Analysis Batch: 480-388239	Instrument ID: HP5975T
Client Matrix: Water	Prep Batch: N/A	Lab File ID: T1980.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 0943	Units: ug/L	Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 0943		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1,1,2-Tetrachloroethane	25.0	25.4	102	80 - 120	
1,1,1-Trichloroethane	25.0	26.1	105	73 - 126	
1,1,2,2-Tetrachloroethane	25.0	26.4	105	76 - 120	
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	26.0	104	61 - 148	
1,1,2-Trichloroethane	25.0	27.8	111	76 - 122	
1,1-Dichloroethane	25.0	27.5	110	77 - 120	
1,1-Dichloroethene	25.0	27.0	108	66 - 127	
1,1-Dichloropropene	25.0	28.8	115	72 - 122	
1,2,3-Trichlorobenzene	25.0	28.6	114	75 - 123	
1,2,3-Trichloropropane	25.0	25.8	103	68 - 122	
1,2,4-Trichlorobenzene	25.0	27.3	109	79 - 122	
1,2,4-Trimethylbenzene	25.0	26.3	105	76 - 121	
1,2-Dibromo-3-Chloropropane	25.0	23.1	92	56 - 134	
1,2-Dibromoethane (EDB)	25.0	26.0	104	77 - 120	
1,2-Dichlorobenzene	25.0	26.6	106	80 - 124	
1,2-Dichloroethane	25.0	26.0	104	75 - 120	
1,2-Dichloropropane	25.0	24.4	98	76 - 120	
1,3,5-Trimethylbenzene	25.0	25.7	103	77 - 121	
1,3-Dichlorobenzene	25.0	26.3	105	77 - 120	
1,3-Dichloropropane	25.0	25.8	103	75 - 120	
1,4-Dichlorobenzene	25.0	26.1	104	80 - 120	
1,4-Dioxane	500	441	88	50 - 150	
2,2-Dichloropropane	25.0	26.6	106	63 - 136	
2-Butanone (MEK)	125	139	111	57 - 140	
2-Chloroethyl vinyl ether	25.0	24.9	100	70 - 129	
2-Hexanone	125	142	114	65 - 127	
4-Methyl-2-pentanone (MIBK)	125	141	113	71 - 125	
Acetone	125	124	100	56 - 142	
Acrolein	125	96.6	77	52 - 143	
Acrylonitrile	250	268	107	63 - 125	
Benzene	25.0	27.1	109	71 - 124	
Bromobenzene	25.0	25.8	103	78 - 120	
Bromochloromethane	25.0	24.8	99	72 - 130	
Bromodichloromethane	25.0	23.4	94	80 - 122	
Bromoform	25.0	21.8	87	61 - 132	
Bromomethane	25.0	27.3	109	55 - 144	
Butyl alcohol, tert-	250	262	105	75 - 125	
Carbon disulfide	25.0	21.9	88	59 - 134	
Carbon tetrachloride	25.0	26.3	105	72 - 134	
Chlorobenzene	25.0	25.2	101	80 - 120	
Chloroethane	25.0	29.7	119	69 - 136	
Chloroform	25.0	26.3	105	73 - 127	
Chloromethane	25.0	22.0	88	68 - 124	
cis-1,2-Dichloroethene	25.0	26.7	107	74 - 124	
cis-1,3-Dichloropropene	25.0	25.4	101	74 - 124	
Cyclohexane	25.0	28.0	112	59 - 135	

# Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

**Lab Control Sample - Batch: 480-388239**

**Method: 8260C  
Preparation: 5030C**

Lab Sample ID:	LCS 480-388239/4	Analysis Batch:	480-388239	Instrument ID:	HP5975T
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	T1980.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	11/19/2017 0943	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	11/19/2017 0943				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Dibromochloromethane	25.0	25.6	102	75 - 125	
Dibromomethane	25.0	24.1	96	76 - 127	
Dichlorodifluoromethane	25.0	20.8	83	59 - 135	
Dichlorofluoromethane	25.0	23.5	94	76 - 127	
Ethyl ether	25.0	25.0	100	76 - 123	
Ethylbenzene	25.0	25.9	104	77 - 123	
Hexachlorobutadiene	25.0	29.1	116	68 - 131	
Hexane	25.0	29.2	117	54 - 146	
Iodomethane	25.0	21.3	85	78 - 123	
Isobutanol	625	660	106	51 - 150	
Isopropylbenzene	25.0	27.1	108	77 - 122	
Methyl acetate	50.0	52.1	104	74 - 133	
Methyl tert-butyl ether	25.0	27.2	109	77 - 120	
Methylcyclohexane	25.0	25.5	102	68 - 134	
Methylene Chloride	25.0	24.3	97	75 - 124	
m-Xylene & p-Xylene	25.0	25.7	103	76 - 122	
Naphthalene	25.0	27.3	109	66 - 125	
n-Butylbenzene	25.0	28.7	115	71 - 128	
N-Propylbenzene	25.0	27.0	108	75 - 127	
o-Chlorotoluene	25.0	26.0	104	76 - 121	
o-Xylene	25.0	25.7	103	76 - 122	
p-Chlorotoluene	25.0	25.8	103	77 - 121	
p-Cymene	25.0	27.7	111	73 - 120	
sec-Butylbenzene	25.0	28.6	114	74 - 127	
Styrene	25.0	25.7	103	80 - 120	
tert-Butylbenzene	25.0	27.6	110	75 - 123	
Tetrachloroethene	25.0	26.4	105	74 - 122	
Tetrahydrofuran	50.0	50.2	100	62 - 132	
Toluene	25.0	27.2	109	80 - 122	
trans-1,2-Dichloroethene	25.0	27.9	112	73 - 127	
trans-1,3-Dichloropropene	25.0	27.0	108	80 - 120	
trans-1,4-Dichloro-2-butene	25.0	25.3	101	41 - 131	
Trichloroethene	25.0	24.5	98	74 - 123	
Trichlorofluoromethane	25.0	21.8	87	62 - 150	
Vinyl acetate	50.0	60.2	120	50 - 144	
Vinyl chloride	25.0	26.2	105	65 - 133	
Surrogate		% Rec		Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)		102		77 - 120	
4-Bromofluorobenzene (Surr)		89		73 - 120	
Toluene-d8 (Surr)		103		80 - 120	

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 480-388239**

**Method: 8260C  
Preparation: 5030C**

MS Lab Sample ID: 480-127483-T-3 MS	Analysis Batch: 480-388239	Instrument ID: HP5975T
Client Matrix: Water	Prep Batch: N/A	Lab File ID: T2000.D
Dilution: 40	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1749		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1749		5 mL
Leach Date: N/A		

MSD Lab Sample ID: 480-127483-T-3 MSD	Analysis Batch: 480-388239	Instrument ID: HP5975T
Client Matrix: Water	Prep Batch: N/A	Lab File ID: T2001.D
Dilution: 40	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1813		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1813		5 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
1,1,1,2-Tetrachloroethane	106	101	80 - 120	4	20		
1,1,1-Trichloroethane	131	101	73 - 126	26	15	F1	F2
1,1,2,2-Tetrachloroethane	114	114	76 - 120	0	15		
1,1,2-Trichloroethane	130	117	76 - 122	10	15	F1	
1,1-Dichloroethane	129	111	77 - 120	15	20	F1	
1,1-Dichloroethene	159	111	66 - 127	36	16	F1	F2
1,1-Dichloropropene	138	110	72 - 122	23	20	F1	F2
1,2,3-Trichloropropane	104	114	68 - 122	9	14		
1,2,4-Trichlorobenzene	125	114	79 - 122	9	20	F1	
1,2-Dibromo-3-Chloropropane	96	107	56 - 134	12	15		
1,2-Dibromoethane (EDB)	112	113	77 - 120	1	15		
1,2-Dichlorobenzene	112	110	80 - 124	2	20		
1,2-Dichloroethane	121	107	75 - 120	12	20	F1	
1,2-Dichloropropane	141	112	76 - 120	23	20	F1	F2
1,3-Dichlorobenzene	117	113	77 - 120	4	20		
1,3-Dichloropropane	114	111	75 - 120	3	20		
1,4-Dichlorobenzene	112	113	78 - 124	1	20		
2,2-Dichloropropane	110	83	63 - 136	28	20		F2
2-Butanone (MEK)	130	105	57 - 140	22	20		F2
2-Hexanone	123	119	65 - 127	3	15		
4-Methyl-2-pentanone (MIBK)	127	120	71 - 125	6	35	F1	
Acetone	152	121	56 - 142	23	15	F1	F2
Acrolein	118	88	52 - 143	29	20		F2
Acrylonitrile	126	105	63 - 125	18	20	F1	
Benzene	126	115	71 - 124	9	13	F1	
Bromochloromethane	125	91	72 - 130	31	15		F2
Bromodichloromethane	126	110	80 - 122	14	15	F1	
Bromoform	97	89	61 - 132	9	15		
Bromomethane	121	91	55 - 144	28	15		F2
Carbon disulfide	145	110	59 - 134	28	15	F1	F2
Carbon tetrachloride	123	94	72 - 134	27	15		F2
Chlorobenzene	111	109	80 - 120	2	25		
Chloroethane	150	120	69 - 136	22	15	F1	F2



## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 480-388239**

**Method: 8260C  
Preparation: 5030C**

MS Lab Sample ID: 480-127483-T-3 MS	Analysis Batch: 480-388239	Instrument ID: HP5975T
Client Matrix: Water	Prep Batch: N/A	Lab File ID: T2000.D
Dilution: 40	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1749		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1749		5 mL
Leach Date: N/A		

MSD Lab Sample ID: 480-127483-T-3 MSD	Analysis Batch: 480-388239	Instrument ID: HP5975T
Client Matrix: Water	Prep Batch: N/A	Lab File ID: T2001.D
Dilution: 40	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/19/2017 1813		Final Weight/Volume: 5 mL
Prep Date: 11/19/2017 1813		5 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Chloroform	130	96	73 - 127	31	20	F1	F2
Chloromethane	126	93	68 - 124	30	15	F1	F2
cis-1,2-Dichloroethene	129	95	74 - 124	31	15	F1	F2
cis-1,3-Dichloropropene	128	107	74 - 124	18	15	F1	F2
Dibromochloromethane	118	110	75 - 125	6	15		
Dibromomethane	134	116	76 - 127	15	15	F1	
Dichlorodifluoromethane	108	80	59 - 135	30	20		F2
Ethylbenzene	113	111	77 - 123	1	15		
Hexachlorobutadiene	134	113	68 - 131	17	20	F1	
Iodomethane	140	106	78 - 123	27	20	F1	F2
Isobutanol	116	106	51 - 150	9	20		
Methylene Chloride	101	90	75 - 124	12	15		
m-Xylene & p-Xylene	108	104	76 - 122	4	16		
Naphthalene	130	119	66 - 125	9	20	F1	
o-Xylene	108	107	76 - 122	1	16		
Styrene	111	110	80 - 120	1	20		
Tetrachloroethene	123	113	74 - 122	9	20	F1	
Toluene	121	111	80 - 122	9	15		
trans-1,2-Dichloroethene	137	113	73 - 127	19	20	F1	
trans-1,3-Dichloropropene	117	106	80 - 120	9	15		
trans-1,4-Dichloro-2-butene	100	106	41 - 131	6	20		
Trichloroethene	128	103	74 - 123	21	16	F1	F2
Trichlorofluoromethane	131	80	62 - 150	49	20		F2
Vinyl acetate	116	95	50 - 144	20	23		
Vinyl chloride	161	114	65 - 133	34	15	F1	F2
Surrogate		MS % Rec	MSD % Rec	Acceptance Limits			
1,2-Dichloroethane-d4 (Surr)		112	99	77 - 120			
4-Bromofluorobenzene (Surr)		92	94	73 - 120			
Toluene-d8 (Surr)		106	103	80 - 120			

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 480-388239**

**Method: 8260C  
Preparation: 5030C**

MS Lab Sample ID: 480-127483-T-3 MS      Units: ug/L  
 Client Matrix: Water  
 Dilution: 40  
 Analysis Date: 11/19/2017 1749  
 Prep Date: 11/19/2017 1749  
 Leach Date: N/A

MSD Lab Sample ID: 480-127483-T-3 MSD  
 Client Matrix: Water  
 Dilution: 40  
 Analysis Date: 11/19/2017 1813  
 Prep Date: 11/19/2017 1813  
 Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
1,1,1,2-Tetrachloroethane	ND	1000	1000	1060	1010
1,1,1-Trichloroethane	ND	1000	1000	1310 F1	1010 F2
1,1,2,2-Tetrachloroethane	ND	1000	1000	1140	1140
1,1,2-Trichloroethane	ND	1000	1000	1300 F1	1170
1,1-Dichloroethane	ND	1000	1000	1290 F1	1110
1,1-Dichloroethene	ND	1000	1000	1590 F1	1110 F2
1,1-Dichloropropene	ND	1000	1000	1380 F1	1100 F2
1,2,3-Trichloropropane	ND	1000	1000	1040	1140
1,2,4-Trichlorobenzene	ND	1000	1000	1250 F1	1140
1,2-Dibromo-3-Chloropropane	ND	1000	1000	955	1070
1,2-Dibromoethane (EDB)	ND	1000	1000	1120	1130
1,2-Dichlorobenzene	ND	1000	1000	1120	1100
1,2-Dichloroethane	ND	1000	1000	1210 F1	1070
1,2-Dichloropropane	ND	1000	1000	1410 F1	1120 F2
1,3-Dichlorobenzene	ND	1000	1000	1170	1130
1,3-Dichloropropane	ND	1000	1000	1140	1110
1,4-Dichlorobenzene	ND	1000	1000	1120	1130
2,2-Dichloropropane	ND	1000	1000	1100	832 F2
2-Butanone (MEK)	ND	5000	5000	6500	5230 F2
2-Hexanone	ND	5000	5000	6150	5950
4-Methyl-2-pentanone (MIBK)	ND	5000	5000	6340 F1	5990
Acetone	ND	5000	5000	7590 F1	6050 F2
Acrolein	ND	5000	5000	5890	4380 F2
Acrylonitrile	ND	10000	10000	12600 F1	10500
Benzene	ND	1000	1000	1260 F1	1150
Bromochloromethane	ND	1000	1000	1250	914 F2
Bromodichloromethane	ND	1000	1000	1260 F1	1100
Bromoform	ND	1000	1000	975	891
Bromomethane	ND	1000	1000	1210	913 F2
Carbon disulfide	ND	1000	1000	1450 F1	1100 F2
Carbon tetrachloride	ND	1000	1000	1230	937 F2
Chlorobenzene	ND	1000	1000	1110	1090
Chloroethane	ND	1000	1000	1500 F1	1200 F2
Chloroform	ND	1000	1000	1300 F1	955 F2
Chloromethane	ND	1000	1000	1260 F1	928 F2
cis-1,2-Dichloroethene	ND	1000	1000	1290 F1	946 F2
cis-1,3-Dichloropropene	ND	1000	1000	1280 F1	1070 F2
Dibromochloromethane	ND	1000	1000	1180	1100
Dibromomethane	ND	1000	1000	1340 F1	1160
Dichlorodifluoromethane	ND	1000	1000	1080	797 F2
Ethylbenzene	ND	1000	1000	1130	1110
Hexachlorobutadiene	ND	1000	1000	1340 F1	1130
Iodomethane	ND	1000	1000	1400 F1	1060 F2

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 480-388239**

**Method: 8260C  
Preparation: 5030C**

MS Lab Sample ID: 480-127483-T-3 MS      Units: ug/L  
 Client Matrix: Water  
 Dilution: 40  
 Analysis Date: 11/19/2017 1749  
 Prep Date: 11/19/2017 1749  
 Leach Date: N/A

MSD Lab Sample ID: 480-127483-T-3 MSD  
 Client Matrix: Water  
 Dilution: 40  
 Analysis Date: 11/19/2017 1813  
 Prep Date: 11/19/2017 1813  
 Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual	
Isobutanol	ND	25000	25000	29100	26500	
Methylene Chloride	ND	1000	1000	1010	898	
m-Xylene & p-Xylene	31 J	1000	1000	1110	1080	
Naphthalene	ND	1000	1000	1300 F1	1190	
o-Xylene	ND	1000	1000	1080	1070	
Styrene	ND	1000	1000	1110	1100	
Tetrachloroethene	ND	1000	1000	1230 F1	1130	
Toluene	46	1000	1000	1260	1160	
trans-1,2-Dichloroethene	ND	1000	1000	1370 F1	1130	
trans-1,3-Dichloropropene	ND	1000	1000	1170	1060	
trans-1,4-Dichloro-2-butene	ND	1000	1000	996	1060	
Trichloroethene	ND	1000	1000	1280 F1	1030	F2
Trichlorofluoromethane	ND	1000	1000	1310	798	F2
Vinyl acetate	ND	2000	2000	2320	1900	
Vinyl chloride	ND	1000	1000	1610 F1	1140	F2

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

**Method Blank - Batch: 280-395708**

Lab Sample ID: MB 280-395708/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/21/2017 1710  
 Prep Date: 11/21/2017 0752  
 Leach Date: N/A

Analysis Batch: 280-396202  
 Prep Batch: 280-395708  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6010D  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_025  
 Lab File ID: 25A112117b.asc  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Calcium, Dissolved	ND		0.035	0.040
Iron, Dissolved	ND		0.022	0.060
Magnesium, Dissolved	ND		0.011	0.050
Potassium, Dissolved	ND		0.24	1.0
Sodium, Dissolved	ND		0.12	1.0

**Lab Control Sample - Batch: 280-395708**

Lab Sample ID: LCS 280-395708/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/21/2017 1713  
 Prep Date: 11/21/2017 0752  
 Leach Date: N/A

Analysis Batch: 280-396202  
 Prep Batch: 280-395708  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6010D  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_025  
 Lab File ID: 25A112117b.asc  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Calcium, Dissolved	50.0	49.3	99	90 - 111	
Iron, Dissolved	1.00	1.02	102	89 - 115	
Magnesium, Dissolved	50.0	53.9	108	90 - 113	
Potassium, Dissolved	50.0	50.8	102	89 - 114	
Sodium, Dissolved	50.0	52.7	105	90 - 115	

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-395708**

**Method: 6010D  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-103420-A-6-B MS	Analysis Batch: 280-396202	Instrument ID: MT_025
Client Matrix: Water	Prep Batch: 280-395708	Lab File ID: 25A112117b.asc
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 11/21/2017 1723		Final Weight/Volume: 50 mL
Prep Date: 11/21/2017 0752		
Leach Date: N/A		

MSD Lab Sample ID: 280-103420-A-6-C MSD	Analysis Batch: 280-396202	Instrument ID: MT_025
Client Matrix: Water	Prep Batch: 280-395708	Lab File ID: 25A112117b.asc
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 11/21/2017 1725		Final Weight/Volume: 50 mL
Prep Date: 11/21/2017 0752		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Calcium, Dissolved	93	93	48 - 153	0	20		
Iron, Dissolved	100	100	52 - 155	1	20		
Magnesium, Dissolved	105	105	62 - 146	0	20		
Potassium, Dissolved	101	103	76 - 132	1	20		
Sodium, Dissolved	104	105	70 - 203	1	20		

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-395708**

**Method: 6010D  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-103420-A-6-B MS	Units: mg/L	MSD Lab Sample ID: 280-103420-A-6-C MSD
Client Matrix: Water		Client Matrix: Water
Dilution: 1.0		Dilution: 1.0
Analysis Date: 11/21/2017 1723		Analysis Date: 11/21/2017 1725
Prep Date: 11/21/2017 0752		Prep Date: 11/21/2017 0752
Leach Date: N/A		Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Calcium, Dissolved	57	50.0	50.0	103	104
Iron, Dissolved	ND	1.00	1.00	0.996	1.00
Magnesium, Dissolved	11	50.0	50.0	63.3	63.5
Potassium, Dissolved	6.0	50.0	50.0	56.6	57.4
Sodium, Dissolved	12	50.0	50.0	64.0	64.4

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

**Method Blank - Batch: 280-396510**

Lab Sample ID: MB 280-396510/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/28/2017 1941  
 Prep Date: 11/28/2017 0806  
 Leach Date: N/A

Analysis Batch: 280-396876  
 Prep Batch: 280-396510  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6010D  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_051  
 Lab File ID: 51A112817A.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Cobalt, Total	ND		0.0012	0.0030
Iron, Total	ND		0.022	0.060

**Lab Control Sample - Batch: 280-396510**

Lab Sample ID: LCS 280-396510/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/28/2017 1944  
 Prep Date: 11/28/2017 0806  
 Leach Date: N/A

Analysis Batch: 280-396876  
 Prep Batch: 280-396510  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6010D  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_051  
 Lab File ID: 51A112817A.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Cobalt, Total	0.500	0.537	107	89 - 111	
Iron, Total	1.00	1.12	112	89 - 115	

**Matrix Spike/  
 Matrix Spike Duplicate Recovery Report - Batch: 280-396510**

MS Lab Sample ID: 280-103614-E-2-C MS  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/28/2017 1956  
 Prep Date: 11/28/2017 0806  
 Leach Date: N/A

Analysis Batch: 280-396876  
 Prep Batch: 280-396510  
 Leach Batch: N/A

**Method: 6010D  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_051  
 Lab File ID: 51A112817A.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-103614-E-2-D MSD  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/28/2017 1959  
 Prep Date: 11/28/2017 0806  
 Leach Date: N/A

Analysis Batch: 280-396876  
 Prep Batch: 280-396510  
 Leach Batch: N/A

Instrument ID: MT\_051  
 Lab File ID: 51A112817A.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Cobalt, Total	106	103	82 - 119	3	20		
Iron, Total	113	129	52 - 155	4	20		

# Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

## Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 280-396510

**Method: 6010D**  
**Preparation: 3005A**  
**Total Recoverable**

MS Lab Sample ID: 280-103614-E-2-C MS      Units: mg/L  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/28/2017 1956  
Prep Date: 11/28/2017 0806  
Leach Date: N/A

MSD Lab Sample ID: 280-103614-E-2-D MSD  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/28/2017 1959  
Prep Date: 11/28/2017 0806  
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Cobalt, Total	ND	0.500	0.500	0.528	0.514
Iron, Total	2.5	1.00	1.00	3.66	3.82

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

**Method Blank - Batch: 280-395711**

Lab Sample ID: MB 280-395711/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/21/2017 1717  
 Prep Date: 11/21/2017 0752  
 Leach Date: N/A

Analysis Batch: 280-396328  
 Prep Batch: 280-395711  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_077  
 Lab File ID: 049\_BLK.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Manganese, Dissolved	ND		0.00031	0.0010

**Lab Control Sample - Batch: 280-395711**

Lab Sample ID: LCS 280-395711/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/21/2017 1720  
 Prep Date: 11/21/2017 0752  
 Leach Date: N/A

Analysis Batch: 280-396328  
 Prep Batch: 280-395711  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_077  
 Lab File ID: 050\_LCS.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Manganese, Dissolved	0.0400	0.0412	103	89 - 119	

**Matrix Spike/  
 Matrix Spike Duplicate Recovery Report - Batch: 280-395711**

MS Lab Sample ID: 280-103420-A-6-E MS  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/21/2017 1736  
 Prep Date: 11/21/2017 0752  
 Leach Date: N/A

Analysis Batch: 280-396328  
 Prep Batch: 280-395711  
 Leach Batch: N/A

**Method: 6020B  
 Preparation: 3005A  
 Dissolved**

Instrument ID: MT\_077  
 Lab File ID: 054SMPL.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-103420-A-6-F MSD  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/21/2017 1739  
 Prep Date: 11/21/2017 0752  
 Leach Date: N/A

Analysis Batch: 280-396328  
 Prep Batch: 280-395711  
 Leach Batch: N/A

Instrument ID: MT\_077  
 Lab File ID: 055SMPL.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Manganese, Dissolved	106	92	85 - 117	15	20		



**Quality Control Results**

Client: Waste Management

Job Number: 280-103543-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-395711**

**Method: 6020B  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-103420-A-6-E MS      Units: mg/L  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/21/2017 1736  
 Prep Date: 11/21/2017 0752  
 Leach Date: N/A

MSD Lab Sample ID: 280-103420-A-6-F MSD  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/21/2017 1739  
 Prep Date: 11/21/2017 0752  
 Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Manganese, Dissolved	ND	0.0400	0.0400	0.0425	0.0367

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

**Method Blank - Batch: 280-396509**

Lab Sample ID: MB 280-396509/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/27/2017 2333  
 Prep Date: 11/27/2017 1610  
 Leach Date: N/A

Analysis Batch: 280-396711  
 Prep Batch: 280-396509  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_078  
 Lab File ID: 183\_BLK\_112717.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Antimony, Total	ND		0.00040	0.0010
Barium, Total	ND		0.00029	0.0010
Beryllium, Total	ND		0.000080	0.0010
Cadmium, Total	ND		0.00027	0.00020
Chromium, Total	ND		0.00050	0.0030
Copper, Total	ND		0.00056	0.0020
Lead, Total	ND		0.00018	0.0010
Manganese, Total	ND		0.00031	0.0010
Nickel, Total	ND		0.00030	0.0040
Silver, Total	ND		0.000033	0.0020
Thallium, Total	ND		0.000050	0.0010
Vanadium, Total	ND		0.00050	0.0020
Zinc, Total	ND		0.0020	0.0050

**Lab Control Sample - Batch: 280-396509**

Lab Sample ID: LCS 280-396509/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/27/2017 2336  
 Prep Date: 11/27/2017 1610  
 Leach Date: N/A

Analysis Batch: 280-396711  
 Prep Batch: 280-396509  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_078  
 Lab File ID: 184\_LCS\_112717.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony, Total	0.0400	0.0376	94	79 - 111	
Barium, Total	0.0400	0.0406	102	92 - 117	
Beryllium, Total	0.0400	0.0422	105	87 - 118	
Cadmium, Total	0.0400	0.0390	97	91 - 114	
Chromium, Total	0.0400	0.0414	103	91 - 114	
Copper, Total	0.0400	0.0433	108	89 - 116	
Lead, Total	0.0400	0.0402	101	95 - 116	
Manganese, Total	0.0400	0.0418	104	89 - 119	
Nickel, Total	0.0400	0.0415	104	92 - 116	
Silver, Total	0.0400	0.0385	96	93 - 118	
Thallium, Total	0.0400	0.0385	96	94 - 115	
Vanadium, Total	0.0400	0.0399	100	91 - 114	
Zinc, Total	0.0400	0.0418	104	86 - 123	

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396509**

**Method: 6020B  
Preparation: 3005A  
Total Recoverable**

MS Lab Sample ID: 280-103614-E-1-B MS	Analysis Batch: 280-396711	Instrument ID: MT_078
Client Matrix: Water	Prep Batch: 280-396509	Lab File ID: 187SMPL_112717.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 11/27/2017 2346		Final Weight/Volume: 50 mL
Prep Date: 11/27/2017 1610		
Leach Date: N/A		

MSD Lab Sample ID: 280-103614-E-1-C MSD	Analysis Batch: 280-396711	Instrument ID: MT_078
Client Matrix: Water	Prep Batch: 280-396509	Lab File ID: 188SMPL_112717.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 11/27/2017 2350		Final Weight/Volume: 50 mL
Prep Date: 11/27/2017 1610		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Antimony, Total	94	97	85 - 115	4	20		
Barium, Total	97	100	85 - 118	2	20		
Beryllium, Total	106	106	80 - 125	0	20		
Cadmium, Total	98	103	85 - 115	5	20		
Chromium, Total	99	99	84 - 121	0	20		
Copper, Total	101	104	85 - 119	3	20		
Lead, Total	98	101	85 - 118	3	20		
Manganese, Total	97	99	85 - 117	2	20		
Nickel, Total	98	99	85 - 119	1	20		
Silver, Total	95	96	85 - 115	0	20		
Thallium, Total	93	96	85 - 118	3	20		
Vanadium, Total	95	98	85 - 120	3	20		
Zinc, Total	104	99	83 - 122	5	20		

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396509**

**Method: 6020B  
Preparation: 3005A  
Total Recoverable**

MS Lab Sample ID: 280-103614-E-1-B MS      Units: mg/L  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/27/2017 2346  
 Prep Date: 11/27/2017 1610  
 Leach Date: N/A

MSD Lab Sample ID: 280-103614-E-1-C MSD  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/27/2017 2350  
 Prep Date: 11/27/2017 1610  
 Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Antimony, Total	0.00049 J	0.0400	0.0400	0.0380	0.0394
Barium, Total	0.0025	0.0400	0.0400	0.0415	0.0424
Beryllium, Total	0.000092 J	0.0400	0.0400	0.0424	0.0426
Cadmium, Total	ND	0.0400	0.0400	0.0394	0.0414
Chromium, Total	0.0081	0.0400	0.0400	0.0478	0.0479
Copper, Total	ND	0.0400	0.0400	0.0405	0.0417
Lead, Total	ND	0.0400	0.0400	0.0392	0.0405
Manganese, Total	0.0029	0.0400	0.0400	0.0418	0.0426
Nickel, Total	0.0015 J	0.0400	0.0400	0.0408	0.0411
Silver, Total	ND	0.0400	0.0400	0.0381	0.0382
Thallium, Total	ND	0.0400	0.0400	0.0371	0.0383
Vanadium, Total	0.0023	0.0400	0.0400	0.0403	0.0415
Zinc, Total	ND	0.0400	0.0400	0.0416	0.0398

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

**Method Blank - Batch: 280-397850**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 280-397850/6	Analysis Batch: 280-397850	Instrument ID: WC_IonChrom8
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 06.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/07/2017 0940	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Chloride	ND		1.0	1.0
Sulfate	ND		1.0	1.0

**Method Reporting Limit Check - Batch: 280-397850**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MRL 280-397850/3	Analysis Batch: 280-397850	Instrument ID: WC_IonChrom8
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 03.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/07/2017 0850	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	2.50	ND	101	50 - 150	
Sulfate	2.50	ND	101	50 - 150	

**Lab Control Sample/  
Lab Control Sample Duplicate Recovery Report - Batch: 280-397850**

**Method: 300.0**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-397850/4	Analysis Batch: 280-397850	Instrument ID: WC_IonChrom8
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 04.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/07/2017 0906	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-397850/5	Analysis Batch: 280-397850	Instrument ID: WC_IonChrom8
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 05.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/07/2017 0923	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Chloride	96	95	90 - 110	0	10		
Sulfate	95	95	90 - 110	0	10		

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

**Laboratory Control/  
Laboratory Duplicate Data Report - Batch: 280-397850**

**Method: 300.0  
Preparation: N/A**

LCS Lab Sample ID: LCS 280-397850/4      Units: mg/L  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/07/2017 0906  
 Prep Date: N/A  
 Leach Date: N/A

LCSD Lab Sample ID: LCSD 280-397850/5  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/07/2017 0923  
 Prep Date: N/A  
 Leach Date: N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Chloride	100	100	95.5	95.5
Sulfate	100	100	94.9	94.8

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-397850**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-103543-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/07/2017 1117  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-397850  
 Prep Batch: N/A  
 Leach Batch: N/A

Instrument ID: WC\_IonChrom8  
 Lab File ID: 09.0000.d  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL  
 25 uL

MSD Lab Sample ID: 280-103543-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/07/2017 1133  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-397850  
 Prep Batch: N/A  
 Leach Batch: N/A

Instrument ID: WC\_IonChrom8  
 Lab File ID: 10.0000.d  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL  
 25 uL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Chloride	104	105	80 - 120	1	20		
Sulfate	103	104	80 - 120	1	20		

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-397850**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-103543-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/07/2017 1117  
 Prep Date: N/A  
 Leach Date: N/A

Units: mg/L

MSD Lab Sample ID: 280-103543-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/07/2017 1133  
 Prep Date: N/A  
 Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Chloride	1.7	25.0	25.0	27.7	27.9
Sulfate	1.8	25.0	25.0	27.5	27.8

**Duplicate - Batch: 280-397850**

**Method: 300.0  
Preparation: N/A**

Lab Sample ID: 280-103543-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/07/2017 1100  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-397850  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: mg/L

Instrument ID: WC\_IonChrom8  
 Lab File ID: 08.0000.d  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL  
 25 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Chloride	1.7	1.78	3	15	
Sulfate	1.8	1.80	0	15	

**Quality Control Results**

Client: Waste Management

Job Number: 280-103543-1

**Method Blank - Batch: 280-397335**

**Method: 350.1  
Preparation: N/A**

Lab Sample ID: MB 280-397335/20	Analysis Batch: 280-397335	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\120117.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 12/01/2017 1325	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Ammonia (as N)	ND		0.030	0.030

**Lab Control Sample/  
Lab Control Sample Duplicate Recovery Report - Batch: 280-397335**

**Method: 350.1  
Preparation: N/A**

LCS Lab Sample ID: LCS 280-397335/18	Analysis Batch: 280-397335	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\120117.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 12/01/2017 1321	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-397335/19	Analysis Batch: 280-397335	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\120117.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 12/01/2017 1323	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Ammonia (as N)	101	100	90 - 110	0	10		

**Laboratory Control/  
Laboratory Duplicate Data Report - Batch: 280-397335**

**Method: 350.1  
Preparation: N/A**

LCS Lab Sample ID: LCS 280-397335/18	Units: mg/L	LCSD Lab Sample ID: LCSD 280-397335/19
Client Matrix: Water		Client Matrix: Water
Dilution: 1.0		Dilution: 1.0
Analysis Date: 12/01/2017 1321		Analysis Date: 12/01/2017 1323
Prep Date: N/A		Prep Date: N/A
Leach Date: N/A		Leach Date: N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Ammonia (as N)	2.50	2.50	2.52	2.51



## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-397335**

**Method: 350.1  
Preparation: N/A**

MS Lab Sample ID: 280-103543-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 12/01/2017 1329  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-397335  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_Alp 3  
Lab File ID: C:\FLOW\_4\120117.RS  
Initial Weight/Volume: 10 mL  
Final Weight/Volume: 10 mL

MSD Lab Sample ID: 280-103543-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 12/01/2017 1331  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-397335  
Prep Batch: N/A  
Leach Batch: N/A

Instrument ID: WC\_Alp 3  
Lab File ID: C:\FLOW\_4\120117.RS  
Initial Weight/Volume: 10 mL  
Final Weight/Volume: 10 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Ammonia (as N)	104	104	90 - 110	1	10		

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-397335**

**Method: 350.1  
Preparation: N/A**

MS Lab Sample ID: 280-103543-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 12/01/2017 1329  
Prep Date: N/A  
Leach Date: N/A

Units: mg/L

MSD Lab Sample ID: 280-103543-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 12/01/2017 1331  
Prep Date: N/A  
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Ammonia (as N)	ND	1.00	1.00	1.04	1.04

# Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

## Method Blank - Batch: 280-398053

**Method: 353.2**  
**Preparation: N/A**

Lab Sample ID: MB 280-398053/1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 12/08/2017 1127  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-398053  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume:  
Final Weight/Volume:

Analyte	Result	Qual	RL	RL
Nitrate as N	ND		0.050	0.050

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

**Method Blank - Batch: 280-396052**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: MB 280-396052/5	Analysis Batch: 280-396052	Instrument ID: WC-AT3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 112017.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/20/2017 1341	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Alkalinity, Total (As CaCO3)	ND		5.0	5.0
Alkalinity, Bicarbonate (As CaCO3)	ND		5.0	5.0

**Lab Control Sample - Batch: 280-396052**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: LCS 280-396052/4	Analysis Batch: 280-396052	Instrument ID: WC-AT3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 112017.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/20/2017 1337	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity, Total (As CaCO3)	200	196	98	90 - 110	

**Duplicate - Batch: 280-396052**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: 280-103543-5	Analysis Batch: 280-396052	Instrument ID: WC-AT3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 112017.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/20/2017 1350	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Alkalinity, Total (As CaCO3)	35	35.2	0.9	10	

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

**Method Blank - Batch: 280-396190**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: MB 280-396190/5	Analysis Batch: 280-396190	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 112117.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/21/2017 1610	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Alkalinity, Total (As CaCO3)	ND		5.0	5.0
Alkalinity, Bicarbonate (As CaCO3)	ND		5.0	5.0

**Lab Control Sample - Batch: 280-396190**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: LCS 280-396190/4	Analysis Batch: 280-396190	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 112117.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/21/2017 1602	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity, Total (As CaCO3)	200	188	94	90 - 110	

**Duplicate - Batch: 280-396190**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: 280-102336-A-1 DU	Analysis Batch: 280-396190	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 112117.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/21/2017 1627	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Alkalinity, Total (As CaCO3)	470	460	2	10	

# Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

## Method Blank - Batch: 280-395321

Method: SM 2540C

Preparation: N/A

Lab Sample ID:	MB 280-395321/1	Analysis Batch:	280-395321	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	11/15/2017 0752	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	RL	RL
Total Dissolved Solids (TDS)	ND		5.0	5.0

## Lab Control Sample - Batch: 280-395321

Method: SM 2540C

Preparation: N/A

Lab Sample ID:	LCS 280-395321/2	Analysis Batch:	280-395321	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	11/15/2017 0752	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Dissolved Solids (TDS)	500	488	98	86 - 110	

# Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

## Duplicate - Batch: 280-395321

Method: SM 2540C

Preparation: N/A

Lab Sample ID:	280-103543-1	Analysis Batch:	280-395321	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	11/15/2017 0752	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Dissolved Solids (TDS)	110	100	6	10	

## Duplicate - Batch: 280-395321

Method: SM 2540C

Preparation: N/A

Lab Sample ID:	280-103548-A-2 DU	Analysis Batch:	280-395321	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	11/15/2017 0752	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Dissolved Solids (TDS)	550	542	1	10	

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

**Method Blank - Batch: 280-395735**

**Method: SM 2540D**

**Preparation: N/A**

Lab Sample ID: MB 280-395735/2	Analysis Batch: 280-395735	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 11/17/2017 1324	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Total Suspended Solids	ND		4.0	4.0

**Lab Control Sample - Batch: 280-395735**

**Method: SM 2540D**

**Preparation: N/A**

Lab Sample ID: LCS 280-395735/1	Analysis Batch: 280-395735	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 11/17/2017 1324	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Suspended Solids	100	95.2	95	86 - 114	

**Duplicate - Batch: 280-395735**

**Method: SM 2540D**

**Preparation: N/A**

Lab Sample ID: 280-103543-1	Analysis Batch: 280-395735	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 11/17/2017 1324	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Suspended Solids	ND	ND	NC	10	

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

**Method Blank - Batch: 280-398110**

**Method: SM 5310B**

**Preparation: N/A**

Lab Sample ID: MB 280-398110/4	Analysis Batch: 280-398110	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 120717.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 12/07/2017 1736	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Total Organic Carbon - Average	ND		1.0	1.0

**Lab Control Sample - Batch: 280-398110**

**Method: SM 5310B**

**Preparation: N/A**

Lab Sample ID: LCS 280-398110/3	Analysis Batch: 280-398110	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 120717.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 12/07/2017 1721	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon - Average	25.0	24.8	99	88 - 112	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-398110**

**Method: SM 5310B**

**Preparation: N/A**

MS Lab Sample ID: 280-103724-F-3 MS	Analysis Batch: 280-398110	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 120717.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 12/07/2017 2223		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-103724-F-3 MSD	Analysis Batch: 280-398110	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 120717.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 12/07/2017 2238		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Total Organic Carbon - Average	100	100	88 - 112	0	15		



# Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-398110**

**Method: SM 5310B  
Preparation: N/A**

MS Lab Sample ID: 280-103724-F-3 MS      Units: mg/L  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 12/07/2017 2223  
Prep Date: N/A  
Leach Date: N/A

MSD Lab Sample ID: 280-103724-F-3 MSD  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 12/07/2017 2238  
Prep Date: N/A  
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Total Organic Carbon - Average	2.3	25.0	25.0	27.3	27.4

# Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

## Laboratory Chronicle

Lab ID: 280-103543-1

Client ID: MW-13A

Sample Date/Time: 11/13/2017 11:21    Received Date/Time: 11/14/2017 08:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103543-I-1		280-396651		11/27/2017 18:57	1	TAL DEN	MRM
A:8260B SIM	280-103543-I-1		280-396651		11/27/2017 18:57	1	TAL DEN	MRM
P:5030C	280-103543-F-1		480-388239		11/19/2017 11:04	1	TAL BUF	RRS
A:8260C	280-103543-F-1		480-388239		11/19/2017 11:04	1	TAL BUF	RRS
P:3005A	280-103543-E-1-A		280-396202	280-395708	11/21/2017 07:52	1	TAL DEN	CDH
A:6010D	280-103543-E-1-A		280-396202	280-395708	11/21/2017 18:18	1	TAL DEN	CRR
P:3005A	280-103543-D-1-B		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	280-103543-D-1-B		280-396876	280-396510	11/28/2017 20:46	1	TAL DEN	CML
P:3005A	280-103543-E-1-B		280-396328	280-395711	11/21/2017 07:52	1	TAL DEN	CDH
A:6020B	280-103543-E-1-B		280-396328	280-395711	11/21/2017 18:44	1	TAL DEN	LMT
P:3005A	280-103543-D-1-A		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103543-D-1-A		280-396711	280-396509	11/28/2017 01:06	1	TAL DEN	LMT
A:300.0	280-103543-B-1		280-397850		12/07/2017 10:43	1	TAL DEN	JML
A:350.1	280-103543-C-1		280-397335		12/01/2017 13:27	1	TAL DEN	KAM
A:353.2	280-103543-A-1		280-398053		12/08/2017 11:27	1	TAL DEN	AJA
A:SM 2320B	280-103543-B-1		280-396052		11/20/2017 14:05	1	TAL DEN	A1D
A:SM 2540C	280-103543-B-1		280-395321		11/15/2017 07:52	1	TAL DEN	JAP
A:SM 2540D	280-103543-A-1		280-395735		11/17/2017 13:24	1	TAL DEN	SVC
A:SM 5310B	280-103543-C-1		280-398110		12/07/2017 19:51	1	TAL DEN	CCJ
A:Field Sampling	280-103543-A-1		280-395824		11/13/2017 12:21	1	TAL DEN	CS

Lab ID: 280-103543-1 MS

Client ID: MW-13A

Sample Date/Time: 11/13/2017 11:21    Received Date/Time: 11/14/2017 08:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103543-J-1 MS		280-396651		11/27/2017 21:21	1	TAL DEN	MRM
A:8260B SIM	280-103543-J-1 MS		280-396651		11/27/2017 21:21	1	TAL DEN	MRM
A:300.0	280-103543-B-1 MS		280-397850		12/07/2017 11:17	1	TAL DEN	JML
A:350.1	280-103543-C-1 MS		280-397335		12/01/2017 13:29	1	TAL DEN	KAM

Lab ID: 280-103543-1 MSD

Client ID: MW-13A

Sample Date/Time: 11/13/2017 11:21    Received Date/Time: 11/14/2017 08:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103543-J-1 MSD		280-396651		11/27/2017 21:39	1	TAL DEN	MRM
A:8260B SIM	280-103543-J-1 MSD		280-396651		11/27/2017 21:39	1	TAL DEN	MRM
A:300.0	280-103543-B-1 MSD		280-397850		12/07/2017 11:33	1	TAL DEN	JML
A:350.1	280-103543-C-1 MSD		280-397335		12/01/2017 13:31	1	TAL DEN	KAM

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

### Laboratory Chronicle

Lab ID: 280-103543-1 DU

Client ID: MW-13A

Sample Date/Time: 11/13/2017 11:21      Received Date/Time: 11/14/2017 08:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:300.0	280-103543-B-1 DU		280-397850		12/07/2017 11:00	1	TAL DEN	JML
A:SM 2540C	280-103543-B-1 DU		280-395321		11/15/2017 07:52	1	TAL DEN	JAP
A:SM 2540D	280-103543-A-1 DU		280-395735		11/17/2017 13:24	1	TAL DEN	SVC

Lab ID: 280-103543-2

Client ID: MW-13B

Sample Date/Time: 11/13/2017 11:20      Received Date/Time: 11/14/2017 08:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103543-K-2		280-396651		11/27/2017 19:15	1	TAL DEN	MRM
A:8260B SIM	280-103543-K-2		280-396651		11/27/2017 19:15	1	TAL DEN	MRM
P:5030C	280-103543-F-2		480-388239		11/19/2017 11:28	1	TAL BUF	RRS
A:8260C	280-103543-F-2		480-388239		11/19/2017 11:28	1	TAL BUF	RRS
P:3005A	280-103543-E-2-A		280-396202	280-395708	11/21/2017 07:52	1	TAL DEN	CDH
A:6010D	280-103543-E-2-A		280-396202	280-395708	11/21/2017 18:20	1	TAL DEN	CRR
P:3005A	280-103543-D-2-B		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	280-103543-D-2-B		280-396876	280-396510	11/28/2017 21:01	1	TAL DEN	CML
P:3005A	280-103543-E-2-B		280-396328	280-395711	11/21/2017 07:52	1	TAL DEN	CDH
A:6020B	280-103543-E-2-B		280-396328	280-395711	11/21/2017 18:48	1	TAL DEN	LMT
P:3005A	280-103543-D-2-A		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103543-D-2-A		280-396711	280-396509	11/28/2017 01:09	1	TAL DEN	LMT
A:300.0	280-103543-B-2		280-397850		12/07/2017 11:50	1	TAL DEN	JML
A:350.1	280-103543-C-2		280-397335		12/01/2017 13:33	1	TAL DEN	KAM
A:353.2	280-103543-A-2		280-398053		12/08/2017 11:27	1	TAL DEN	AJA
A:SM 2320B	280-103543-B-2		280-396052		11/20/2017 14:00	1	TAL DEN	A1D
A:SM 2540C	280-103543-B-2		280-395321		11/15/2017 07:52	1	TAL DEN	JAP
A:SM 2540D	280-103543-A-2		280-395735		11/17/2017 13:24	1	TAL DEN	SVC
A:SM 5310B	280-103543-C-2		280-398110		12/07/2017 20:06	1	TAL DEN	CCJ
A:Field Sampling	280-103543-A-2		280-395824		11/13/2017 12:20	1	TAL DEN	CS

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

### Laboratory Chronicle

Lab ID: 280-103543-3

Client ID: MW-16

Sample Date/Time: 11/13/2017 12:55    Received Date/Time: 11/14/2017 08:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103543-J-3		280-396651		11/27/2017 19:33	1	TAL DEN	MRM
A:8260B SIM	280-103543-J-3		280-396651		11/27/2017 19:33	1	TAL DEN	MRM
P:5030C	280-103543-F-3		480-388239		11/19/2017 11:52	1	TAL BUF	RRS
A:8260C	280-103543-F-3		480-388239		11/19/2017 11:52	1	TAL BUF	RRS
P:3005A	280-103543-E-3-A		280-396202	280-395708	11/21/2017 07:52	1	TAL DEN	CDH
A:6010D	280-103543-E-3-A		280-396202	280-395708	11/21/2017 18:23	1	TAL DEN	CRR
P:3005A	280-103543-D-3-B		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	280-103543-D-3-B		280-396876	280-396510	11/28/2017 21:03	1	TAL DEN	CML
P:3005A	280-103543-E-3-B		280-396328	280-395711	11/21/2017 07:52	1	TAL DEN	CDH
A:6020B	280-103543-E-3-B		280-396328	280-395711	11/21/2017 18:52	1	TAL DEN	LMT
P:3005A	280-103543-D-3-A		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103543-D-3-A		280-396711	280-396509	11/28/2017 01:13	1	TAL DEN	LMT
A:300.0	280-103543-B-3		280-397850		12/07/2017 12:07	1	TAL DEN	JML
A:350.1	280-103543-C-3		280-397335		12/01/2017 13:35	1	TAL DEN	KAM
A:353.2	280-103543-A-3		280-398053		12/08/2017 11:27	1	TAL DEN	AJA
A:SM 2320B	280-103543-B-3		280-396052		11/20/2017 13:55	1	TAL DEN	A1D
A:SM 2540C	280-103543-B-3		280-395321		11/15/2017 07:52	1	TAL DEN	JAP
A:SM 2540D	280-103543-A-3		280-395735		11/17/2017 13:24	1	TAL DEN	SVC
A:SM 5310B	280-103543-C-3		280-398110		12/07/2017 20:20	1	TAL DEN	CCJ
A:Field Sampling	280-103543-A-3		280-395824		11/13/2017 13:55	1	TAL DEN	CS

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

### Laboratory Chronicle

Lab ID: 280-103543-4

Client ID: MW-39

Sample Date/Time: 11/13/2017 14:20    Received Date/Time: 11/14/2017 08:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103543-J-4		280-396651		11/27/2017 19:51	1	TAL DEN	MRM
A:8260B SIM	280-103543-J-4		280-396651		11/27/2017 19:51	1	TAL DEN	MRM
P:5030C	280-103543-F-4		480-388239		11/19/2017 12:16	1	TAL BUF	RRS
A:8260C	280-103543-F-4		480-388239		11/19/2017 12:16	1	TAL BUF	RRS
P:3005A	280-103543-E-4-A		280-396202	280-395708	11/21/2017 07:52	1	TAL DEN	CDH
A:6010D	280-103543-E-4-A		280-396202	280-395708	11/21/2017 18:25	1	TAL DEN	CRR
P:3005A	280-103543-D-4-B		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	280-103543-D-4-B		280-396876	280-396510	11/28/2017 21:06	1	TAL DEN	CML
P:3005A	280-103543-E-4-B		280-396328	280-395711	11/21/2017 07:52	1	TAL DEN	CDH
A:6020B	280-103543-E-4-B		280-396328	280-395711	11/21/2017 18:55	1	TAL DEN	LMT
P:3005A	280-103543-D-4-A		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103543-D-4-A		280-396711	280-396509	11/28/2017 01:16	1	TAL DEN	LMT
A:300.0	280-103543-A-4		280-397850		12/07/2017 12:24	1	TAL DEN	JML
A:350.1	280-103543-C-4		280-397335		12/01/2017 13:37	1	TAL DEN	KAM
A:353.2	280-103543-A-4		280-398053		12/08/2017 11:27	1	TAL DEN	AJA
A:SM 2320B	280-103543-A-4		280-396190		11/21/2017 17:48	1	TAL DEN	A1D
A:SM 2540C	280-103543-A-4		280-395321		11/15/2017 07:52	1	TAL DEN	JAP
A:SM 2540D	280-103543-B-4		280-395735		11/17/2017 13:24	1	TAL DEN	SVC
A:SM 5310B	280-103543-C-4		280-398110		12/07/2017 21:15	1	TAL DEN	CCJ
A:Field Sampling	280-103543-A-4		280-395824		11/13/2017 15:20	1	TAL DEN	CS

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

### Laboratory Chronicle

Lab ID: 280-103543-5

Client ID: MW-29A

Sample Date/Time: 11/13/2017 14:00    Received Date/Time: 11/14/2017 08:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103543-J-5		280-396651		11/27/2017 20:09	1	TAL DEN	MRM
A:8260B SIM	280-103543-J-5		280-396651		11/27/2017 20:09	1	TAL DEN	MRM
P:5030C	280-103543-G-5		480-388239		11/19/2017 12:39	1	TAL BUF	RRS
A:8260C	280-103543-G-5		480-388239		11/19/2017 12:39	1	TAL BUF	RRS
P:3005A	280-103543-F-5-A		280-396202	280-395708	11/21/2017 07:52	1	TAL DEN	CDH
A:6010D	280-103543-F-5-A		280-396202	280-395708	11/21/2017 18:28	1	TAL DEN	CRR
P:3005A	280-103543-E-5-A		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	280-103543-E-5-A		280-396876	280-396510	11/28/2017 21:09	1	TAL DEN	CML
P:3005A	280-103543-F-5-B		280-396328	280-395711	11/21/2017 07:52	1	TAL DEN	CDH
A:6020B	280-103543-F-5-B		280-396328	280-395711	11/21/2017 18:59	1	TAL DEN	LMT
P:3005A	280-103543-D-5-A		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103543-D-5-A		280-396711	280-396509	11/28/2017 01:20	1	TAL DEN	LMT
A:300.0	280-103543-A-5		280-397850		12/07/2017 12:41	1	TAL DEN	JML
A:350.1	280-103543-D-5		280-397335		12/01/2017 13:39	1	TAL DEN	KAM
A:353.2	280-103543-A-5		280-398053		12/08/2017 11:27	1	TAL DEN	AJA
A:SM 2320B	280-103543-A-5		280-396052		11/20/2017 13:46	1	TAL DEN	A1D
A:SM 2540C	280-103543-A-5		280-395321		11/15/2017 07:52	1	TAL DEN	JAP
A:SM 2540D	280-103543-B-5		280-395735		11/17/2017 13:24	1	TAL DEN	SVC
A:SM 5310B	280-103543-D-5		280-398110		12/07/2017 21:31	1	TAL DEN	CCJ
A:Field Sampling	280-103543-A-5		280-395824		11/13/2017 15:00	1	TAL DEN	CS

Lab ID: 280-103543-5 DU

Client ID: MW-29A

Sample Date/Time: 11/13/2017 14:00    Received Date/Time: 11/14/2017 08:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:SM 2320B	280-103543-A-5 DU		280-396052		11/20/2017 13:50	1	TAL DEN	A1D

# Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

## Laboratory Chronicle

Lab ID: 280-103543-6

Client ID: MW-42

Sample Date/Time: 11/13/2017 15:00 Received Date/Time: 11/14/2017 08:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103543-J-6		280-396651		11/27/2017 20:27	1	TAL DEN	MRM
A:8260B SIM	280-103543-J-6		280-396651		11/27/2017 20:27	1	TAL DEN	MRM
P:5030C	280-103543-F-6		480-388239		11/19/2017 13:03	1	TAL BUF	RRS
A:8260C	280-103543-F-6		480-388239		11/19/2017 13:03	1	TAL BUF	RRS
P:3005A	280-103543-E-6-A		280-396202	280-395708	11/21/2017 07:52	1	TAL DEN	CDH
A:6010D	280-103543-E-6-A		280-396202	280-395708	11/21/2017 18:31	1	TAL DEN	CRR
P:3005A	280-103543-D-6-B		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	280-103543-D-6-B		280-396876	280-396510	11/28/2017 21:12	1	TAL DEN	CML
P:3005A	280-103543-E-6-B		280-396328	280-395711	11/21/2017 07:52	1	TAL DEN	CDH
A:6020B	280-103543-E-6-B		280-396328	280-395711	11/21/2017 19:03	1	TAL DEN	LMT
P:3005A	280-103543-D-6-A		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103543-D-6-A		280-396711	280-396509	11/28/2017 01:23	1	TAL DEN	LMT
A:300.0	280-103543-B-6		280-397850		12/07/2017 12:57	1	TAL DEN	JML
A:350.1	280-103543-C-6		280-397335		12/01/2017 13:41	1	TAL DEN	KAM
A:353.2	280-103543-A-6		280-398053		12/08/2017 11:27	1	TAL DEN	AJA
A:SM 2320B	280-103543-B-6		280-396190		11/21/2017 17:55	1	TAL DEN	A1D
A:SM 2540C	280-103543-B-6		280-395321		11/15/2017 07:52	1	TAL DEN	JAP
A:SM 2540D	280-103543-A-6		280-395735		11/17/2017 13:24	1	TAL DEN	SVC
A:SM 5310B	280-103543-C-6		280-398110		12/07/2017 21:52	1	TAL DEN	CCJ
A:Field Sampling	280-103543-A-6		280-395824		11/13/2017 16:00	1	TAL DEN	CS

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

### Laboratory Chronicle

Lab ID: MB

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	MB 280-396651/8		280-396651		11/27/2017 18:39	1	TAL DEN	MRM
A:8260B SIM	MB 280-396651/8		280-396651		11/27/2017 18:39	1	TAL DEN	MRM
P:5030C	MB 480-388239/6		480-388239		11/19/2017 10:31	1	TAL BUF	RRS
A:8260C	MB 480-388239/6		480-388239		11/19/2017 10:31	1	TAL BUF	RRS
P:3005A	MB 280-395708/1-A		280-396202	280-395708	11/21/2017 07:52	1	TAL DEN	CDH
A:6010D	MB 280-395708/1-A		280-396202	280-395708	11/21/2017 17:10	1	TAL DEN	CRR
P:3005A	MB 280-396510/1-A		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	MB 280-396510/1-A		280-396876	280-396510	11/28/2017 19:41	1	TAL DEN	CML
P:3005A	MB 280-395711/1-A		280-396328	280-395711	11/21/2017 07:52	1	TAL DEN	CDH
A:6020B	MB 280-395711/1-A		280-396328	280-395711	11/21/2017 17:17	1	TAL DEN	LMT
P:3005A	MB 280-396509/1-A		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	MB 280-396509/1-A		280-396711	280-396509	11/27/2017 23:33	1	TAL DEN	LMT
A:300.0	MB 280-397850/6		280-397850		12/07/2017 09:40	1	TAL DEN	JML
A:350.1	MB 280-397335/20		280-397335		12/01/2017 13:25	1	TAL DEN	KAM
A:353.2	MB 280-398053/1		280-398053		12/08/2017 11:27	1	TAL DEN	AJA
A:SM 2320B	MB 280-396052/5		280-396052		11/20/2017 13:41	1	TAL DEN	A1D
A:SM 2320B	MB 280-396190/5		280-396190		11/21/2017 16:10	1	TAL DEN	A1D
A:SM 2540C	MB 280-395321/1		280-395321		11/15/2017 07:52	1	TAL DEN	JAP
A:SM 2540D	MB 280-395735/2		280-395735		11/17/2017 13:24	1	TAL DEN	SVC
A:SM 5310B	MB 280-398110/4		280-398110		12/07/2017 17:36	1	TAL DEN	CCJ



# Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

## Laboratory Chronicle

Lab ID: LCS

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	LCS 280-396651/6		280-396651		11/27/2017 18:21	1	TAL DEN	MRM
A:8260B SIM	LCS 280-396651/6		280-396651		11/27/2017 18:21	1	TAL DEN	MRM
P:5030C	LCS 480-388239/4		480-388239		11/19/2017 09:43	1	TAL BUF	RRS
A:8260C	LCS 480-388239/4		480-388239		11/19/2017 09:43	1	TAL BUF	RRS
P:3005A	LCS 280-395708/2-A		280-396202	280-395708	11/21/2017 07:52	1	TAL DEN	CDH
A:6010D	LCS 280-395708/2-A		280-396202	280-395708	11/21/2017 17:13	1	TAL DEN	CRR
P:3005A	LCS 280-396510/2-A		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	LCS 280-396510/2-A		280-396876	280-396510	11/28/2017 19:44	1	TAL DEN	CML
P:3005A	LCS 280-395711/2-A		280-396328	280-395711	11/21/2017 07:52	1	TAL DEN	CDH
A:6020B	LCS 280-395711/2-A		280-396328	280-395711	11/21/2017 17:20	1	TAL DEN	LMT
P:3005A	LCS 280-396509/2-A		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	LCS 280-396509/2-A		280-396711	280-396509	11/27/2017 23:36	1	TAL DEN	LMT
A:300.0	LCS 280-397850/4		280-397850		12/07/2017 09:06	1	TAL DEN	JML
A:350.1	LCS 280-397335/18		280-397335		12/01/2017 13:21	1	TAL DEN	KAM
A:SM 2320B	LCS 280-396052/4		280-396052		11/20/2017 13:37	1	TAL DEN	A1D
A:SM 2320B	LCS 280-396190/4		280-396190		11/21/2017 16:02	1	TAL DEN	A1D
A:SM 2540C	LCS 280-395321/2		280-395321		11/15/2017 07:52	1	TAL DEN	JAP
A:SM 2540D	LCS 280-395735/1		280-395735		11/17/2017 13:24	1	TAL DEN	SVC
A:SM 5310B	LCS 280-398110/3		280-398110		12/07/2017 17:21	1	TAL DEN	CCJ

Lab ID: LCSD

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:300.0	LCSD 280-397850/5		280-397850		12/07/2017 09:23	1	TAL DEN	JML
A:350.1	LCSD 280-397335/19		280-397335		12/01/2017 13:23	1	TAL DEN	KAM

Lab ID: MRL

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:300.0	MRL 280-397850/3		280-397850		12/07/2017 08:50	1	TAL DEN	JML

## Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

### Laboratory Chronicle

Lab ID: MS

Client ID: N/A

Sample Date/Time: 11/13/2017 12:05    Received Date/Time: 11/14/2017 01:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030C	480-127483-T-3 MS		480-388239		11/19/2017 17:49	40	TAL BUF	RRS
A:8260C	480-127483-T-3 MS		480-388239		11/19/2017 17:49	40	TAL BUF	RRS
P:3005A	280-103420-A-6-B MS		280-396202	280-395708	11/21/2017 07:52	1	TAL DEN	CDH
A:6010D	280-103420-A-6-B MS		280-396202	280-395708	11/21/2017 17:23	1	TAL DEN	CRR
P:3005A	280-103614-E-2-C MS		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	280-103614-E-2-C MS		280-396876	280-396510	11/28/2017 19:56	1	TAL DEN	CML
P:3005A	280-103420-A-6-E MS		280-396328	280-395711	11/21/2017 07:52	1	TAL DEN	CDH
A:6020B	280-103420-A-6-E MS		280-396328	280-395711	11/21/2017 17:36	1	TAL DEN	LMT
P:3005A	280-103614-E-1-B MS		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103614-E-1-B MS		280-396711	280-396509	11/27/2017 23:46	1	TAL DEN	LMT
A:SM 5310B	280-103724-F-3 MS		280-398110		12/07/2017 22:23	1	TAL DEN	CCJ

Lab ID: MSD

Client ID: N/A

Sample Date/Time: 11/13/2017 12:05    Received Date/Time: 11/14/2017 01:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030C	480-127483-T-3 MSD		480-388239		11/19/2017 18:13	40	TAL BUF	RRS
A:8260C	480-127483-T-3 MSD		480-388239		11/19/2017 18:13	40	TAL BUF	RRS
P:3005A	280-103420-A-6-C MSD		280-396202	280-395708	11/21/2017 07:52	1	TAL DEN	CDH
A:6010D	280-103420-A-6-C MSD		280-396202	280-395708	11/21/2017 17:25	1	TAL DEN	CRR
P:3005A	280-103614-E-2-D MSD		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	280-103614-E-2-D MSD		280-396876	280-396510	11/28/2017 19:59	1	TAL DEN	CML
P:3005A	280-103420-A-6-F MSD		280-396328	280-395711	11/21/2017 07:52	1	TAL DEN	CDH
A:6020B	280-103420-A-6-F MSD		280-396328	280-395711	11/21/2017 17:39	1	TAL DEN	LMT
P:3005A	280-103614-E-1-C MSD		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103614-E-1-C MSD		280-396711	280-396509	11/27/2017 23:50	1	TAL DEN	LMT
A:SM 5310B	280-103724-F-3 MSD		280-398110		12/07/2017 22:38	1	TAL DEN	CCJ

# Quality Control Results

Client: Waste Management

Job Number: 280-103543-1

## Laboratory Chronicle

Lab ID: DU

Client ID: N/A

Sample Date/Time: 10/12/2017 14:32 Received Date/Time: 10/13/2017 08:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:SM 2320B	280-102336-A-1 DU		280-396190		11/21/2017 16:27	1	TAL DEN	A1D
A:SM 2540C	280-103548-A-2 DU		280-395321		11/15/2017 07:52	1	TAL DEN	JAP

### Lab References:

TAL BUF = TestAmerica Buffalo

TAL DEN = TestAmerica Denver

Chain of Custody Record

<b>Client Information</b> Client Contact: Mr. Patrick Medej Sam Gaber Company: Waste Management SCS Engineers Address: 2615 Davis Street 2405 140th Ave NE Suite 107 City: Sam Leandro Bellevue State, Zip: WA, 98005 Phone: 612 440 2480 Email: SGaber@scsengineers.com		Sampler: Sam Gaber Lab P#1: Sara, Betsy A E-Mail: betsy.sara@testamericainc.com		Carrier Tracking No(s): 8113 9351 2550 Page: 1 of 1 Job #: DU20407720		COC No: 280-17318-3224.1 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 Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecylhydrate U - Acetone V - MCAA W - ph 4.5 Z - other (specify)									
Due Date Requested: Standard TAT Requested (days): PO #: WO #: Project #: 28002692 SSOW#		Lab P#1: Sara, Betsy A E-Mail: betsy.sara@testamericainc.com		Analysis Requested Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) TDS/Alks/Cl/SO4/NO3(cad) Dissolved Metals Ammonia/TOC 8260B - long list (TA Buffalo) 8260B SIM (TA Buffalo) Total Metals TSS Total Arsenic (direct sub to ARI)		Total Number of containers Special Instructions/Note: Short Hold: NO3(cad) Arsenic - Direct sub to ARI * Please run MW-29A (semi annual sample) for exact same analytes as quarterly groundwater samples.									
Sample Identification MW-13A MW-13B MW-16 MW-39 MW-29A* MW-42 Trip blank		Sample Date 11/13/17 1120 1255 1420 1400 1500 -		Sample Time 1121 1120 1255 1420 1400 1500 -		Sample Type (C=Comp, G=grab) W W W W W W W		Matrix (W=water, S=solid, O=other) W W W W W W W		Preservation Code W W W W W W W		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) TDS/Alks/Cl/SO4/NO3(cad) Dissolved Metals Ammonia/TOC 8260B - long list (TA Buffalo) 8260B SIM (TA Buffalo) Total Metals TSS Total Arsenic (direct sub to ARI)		Total Number of containers Special Instructions/Note: Short Hold: NO3(cad) Arsenic - Direct sub to ARI * Please run MW-29A (semi annual sample) for exact same analytes as quarterly groundwater samples.	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Date: 11/13/17 1630 Date/Time: 11/13/17 1630 Date/Time: 11-14-17 0850 Date/Time:		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		Special Instructions/QC Requirements: Method of Shipment:		Company: SCS Company: SCS Company: SCS		Company: TAD Company: Company:		Custody Seal No.: 40264A, 40264B Custody Seals Intact: Yes <input type="checkbox"/> No <input type="checkbox"/>		Cooler Temperature(s) °C and Other Remarks: 1.6, 10.4 IR #5 transferred by JS 11-14-17	

# FIELD INFORMATION FORM



Site Name: DVSL

This Waste Management Field Information Form is Required. This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

Site No.: \_\_\_\_\_  
Sample Point: MW-13A  
Sample ID

PURGE INFO

PURGE DATE (MM DD YY) 11/13/17

PURGE TIME (2400 Hr Clock) \_\_\_\_\_

ELAPSED HRS (hrs:min) 20

WATER VOL IN CASING (Gallons) \_\_\_\_\_

ACTUAL VOL PURGED (Gallons) \_\_\_\_\_

WELL VOLS PURGED \_\_\_\_\_

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ "Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged." Mark changes, record field data, below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment... Dedicated:  Y or  N

Filter Device:  Y or  N 0.45  $\mu$  or \_\_\_\_\_  $\mu$  (circle or fill in)

Purging Device  C A-Submersible Pump D-Bailer

B-Peristaltic Pump E-Piston Pump

Filter Type: A A-In-line Disposable C-Vacuum

B-Pressure X-Other \_\_\_\_\_

Sampling Device  C C-QED Bladder Pump F-Dipper/Bottle

Sample Tube Type: D A-Teflon C-PVC X-Other: \_\_\_\_\_

B-Stainless Steel D-Polypropylene

WELL DATA

Well Elevation (at TOC) \_\_\_\_\_ (ft/msl)

Depth to Water (DTW) (from TOC) 58.54 (ft)

Groundwater Elevation (site datum, from TOC) \_\_\_\_\_ (ft/msl)

Total Well Depth (from TOC) \_\_\_\_\_ (ft)

Stick Up (from ground elevation) \_\_\_\_\_ (ft)

Casing ID 02 (in)

Casing Material PVC

Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate (in/hr)	pH (std)	Conductance (SC/EC) ( $\mu$ mhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
111101	3.50	6.37	171	9.52		6.37	158.1	
111106		6.61	171	9.49		6.18	171.5	
111109		6.69	172	9.48		6.14	166.5	
111112		6.73	172	9.46		6.12	163.6	
111115		6.75	171	9.46		6.11	162.1	
111118		6.77	171	9.44		6.13	160.1	
11121		6.79	171	9.44	1.69	6.11	158.4	15.54

Suggested range for 3 consec. readings or note Permit/State requirements:

+/- 0.2

+/- 3%

+/- 10%

+/- 25 mV

Stabilize

Stabilization Data Fields are Optional (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE ( $\mu$ mhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: DTW
11/13/17	6.79	171	9.41	1.69	6.11	158.4	Units ft

Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: Clear Odor: \_\_\_\_\_ Color: \_\_\_\_\_ Other: \_\_\_\_\_

Weather Conditions (required daily, or as conditions change): \_\_\_\_\_ Direction/Speed: 4 mph N Outlook: cloudy/rain Precipitation:  Y or  N

Specific Comments (including purge/well volume calculations if required): \_\_\_\_\_

FIELD COMMENTS

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

11, 13, 17 Mexo Deep

Mexo Deep

SCS

Date

Name

Signature

Company

DISTRIBUTION: WHITE/ORIGINAL - Stay with Sample, YELLOW - Returned to Client, PINK - Field Copy

12/12/2017

TAL-8029WM (1013)

# FIELD INFORMATION FORM



Site Name: DUSL  
 Site No.:       
 Sample Point: M/W-13B  
 Sample ID:     

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/ Lab ID:     

**PURGE INFO**  
 PURGE DATE (MM DD YY): 11/13/17  
 PURGE TIME (2400 Hr Clock): 11:00  
 ELAPSED HRS (hrs:min): 20  
 WATER VOL IN CASING (Gallons):       
 ACTUAL VOL PURGED (Gallons):       
 WELL VOL PURGED:     

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.

**PURGE/SAMPLER EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  or   
 Purging Device: C A-Submersible Pump D-Bailer  
 Sampling Device: C B-Peristaltic Pump E-Piston Pump  
 X-Other:      C-QED Bladder Pump F-Dipper/Bottle  
 Filter Device: B or  0.45  $\mu$  or       $\mu$  (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other       
 Sample Tube Type: 0 A-Teflon C-PVC X-Other:       
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC):      (ft) Depth to Water (DTW) (from TOC): 59.09 (ft)  
 Total Well Depth (from TOC):      (ft) Stick Up (from ground elevation):      (ft)  
 Groundwater Elevation (site datum, from TOC):      (ft/mil)  
 Casing ID: 02 (in) Casing Material: PVC

Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by State/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

Sample Time (2400 Hr Clock)	Rate (ml/min)	pH (std)	Conductance (SC/EC) ( $\mu$ mhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
111010	190	6.52	1172	19.18		15.04	11810	
111015		6.85	1170	19.18		16.31	8.810	
111018		7.03	1171	19.56		16.38	8.410	
111111		7.23	1171	19.72		16.49	8.110	
111114		7.39	1171	19.64		16.58	8.210	
111117		7.38	1171	19.62		16.59	7.710	
111210	✓	7.49	1170	19.54	2.21	16.59	7.710	54.75

Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, Temp. " ", Turbidity " ", D.O. +/- 10%, eH/ORP +/- 25 mV, DTW Stabilize

Stabilization Data Fields are Optional (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/State. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are used, use separate sheet or form.

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 11/13/17  
 pH (std): 7.49  
 CONDUCTANCE (umhos/cm @ 25°C): 170  
 TEMP. (°C): 19.54  
 TURBIDITY (ntu): 2.21  
 DO (mg/L - ppm): 6.59  
 eH/ORP (mV): 770  
 Other: 176  
 Units: F  
 Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/State).

Sample Appearance: clear Odor:      Color:      Other:       
 Weather Conditions (required daily, or as conditions change):      Direction/Speed: 4 mph @ N Outlook: cloudy/rain Precipitation:  or   
 Specific Comments (including purge/well volume calculations if required):     

**FIELD COMMENTS**  
      
      
    

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
11/13/17 Sam Gater      SCS  
 Date Name Signature Company

# FIELD INFORMATION FORM



Site Name: OU3L  
 Site No.: 111317  
 Sample Point: MW-116  
 Sample ID: 1235

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID: \_\_\_\_\_

**PURGE INFO**

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLS PURGED
<u>111317</u>	<u>1235</u>	<u>20</u>			

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below

**PURGE/SAMPLE EQUIPMENT**

Purging and Sampling Equipment... Dedicated:  or  N

Filter Device:  or  N 0.45 µ or \_\_\_\_\_ µ (circle or fill in)

Purging Device: C A-Submersible Pump D-Bailer  
 B-Peristaltic Pump E-Piston Pump  
 Sampling Device: C C-QED Bladder Pump F-Dipper/Bottle

Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other \_\_\_\_\_

X-Other: \_\_\_\_\_ Sample Tube Type: D A-Teflon C-PVC X-Other: \_\_\_\_\_  
 B-Stainless Steel D-Polypropylene

**WELL DATA**

Well Elevation (at TOC) \_\_\_\_\_ (ft/msl) Depth to Water (DTW) (from TOC) 59.07 (ft) Groundwater Elevation (site datum, from TOC) \_\_\_\_\_ (ft/msl)

Total Well Depth (from TOC) \_\_\_\_\_ (ft) Stick Up (from ground elevation) \_\_\_\_\_ (ft) Casing ID 02 (in) Casing Material PVC

Note: Total Well Depth, Stick Up, Casing Id. etc. are optional and can be from historical data, unless required by State/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate (gpm) <u>1.5</u>	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
<u>12315</u>	<u>1.5</u>	<u>7.94</u>	<u>1108</u>	<u>9.39</u>		<u>18.22</u>	<u>10910</u>	
<u>12410</u>		<u>6.56</u>	<u>1106</u>	<u>9.30</u>		<u>5.33</u>	<u>11190</u>	
<u>12413</u>		<u>6.49</u>	<u>1104</u>	<u>9.30</u>		<u>5.59</u>	<u>12000</u>	
<u>12416</u>		<u>6.42</u>	<u>1104</u>	<u>9.30</u>		<u>5.62</u>	<u>11810</u>	
<u>12419</u>		<u>6.33</u>	<u>1104</u>	<u>9.30</u>		<u>5.62</u>	<u>11600</u>	
<u>12512</u>		<u>6.32</u>	<u>1104</u>	<u>9.30</u>		<u>5.62</u>	<u>11510</u>	
<u>12515</u>	<u>1.5</u>	<u>6.35</u>	<u>1104</u>	<u>9.30</u>	<u>1.71</u>	<u>5.61</u>	<u>11710</u>	<u>59.15</u>

Suggested range for 3 consec. readings or note Permit/State requirements: ± 0.2

± 3%

± 10%

± 25 mV

Stabilize

Stabilization Data Fields are Optional (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/State. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

**FIELD DATA**

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: <u>DTW</u>
<u>111317</u>	<u>6.35</u>	<u>104</u>	<u>9.30</u>	<u>1.71</u>	<u>5.61</u>	<u>1170</u>	Units <u>FT</u> <u>59.15</u>

Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/State).

Sample Appearance: Clear Odor: None Color: - Other: -

Weather Conditions (required daily, or as conditions change): \_\_\_\_\_ Direction/Speed: S. Wind @ N Outlook: Cloudy Precipitation:  Y or  N

Specific Comments (including purge/well volume calculations if required): \_\_\_\_\_

**FIELD COMMENTS**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

11/13/17 Sam Graber [Signature] SCS  
 Date Name Signature Company



# FIELD INFORMATION FORM



Site Name: 025L  
 Site No.:       
 Sample Point: MW-39  
 Sample ID

**This Waste Management Field Information Form is Required.**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/ Lab ID:                     

**PURGE INFO**  
 PURGE DATE (MM DD YY): 11/13/17 PURGE TIME (2400 Hr Clock): 1400 ELAPSED HRS (hrs:min): 20  
 WATER VOL IN CASING (Gallons):            ACTUAL VOL PURGED (Gallons):            WELL VOL PURGED:           

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment: Dedicated:  Y or  N  
 Purging Device: C A-Submersible Pump D-Bailer  
 Sampling Device: C B-Peristaltic Pump E-Piston Pump  
 X-Other:                      C-QED Bladder Pump F-Dipper/Bottle  
 Filter Device:  Y or  N 0.45 μ or            μ (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other:                       
 Sample Tube Type: D A-Teflon C-PVC X-Other:                       
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC):            (ft/mst) Depth to Water (DTW) (from TOC) \* 20 4 6 (ft/m) Groundwater Elevation (site datum, from TOC)            (ft/mst)  
 Total Well Depth (from TOC)            (ft) Stick Up (from ground elevation)            (ft) Casing ID 0 2 (in) Casing Material PVC

*Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate (glt/min)	pH (std)	Conductance (SC/EC) (μmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1M1010	390	6.27	1254	11.24	101	10.55	-240	
1M1015		6.27	1255	11.34		10.32	-232	
1M1018		6.27	1255	11.35		10.25	-237	
1M1111		6.27	1256	11.36		10.17	-240	
1M1114		6.23	1257	11.34		10.16	-243	
1M1117		6.27	1254	11.27		10.15	-243	
1M1210		6.26	1262	11.25	320	10.15	-241	123

Suggested range for 3 concs, readings or more: Conductance ± 3%, DO ± 10%, eH/ORP ± 25 mV, DTW Stabilize

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 11/13/17 pH (std): 6.26 CONDUCTANCE (μmhos/cm @ 25°C): 262 TEMP. (°C): 11.25 TURBIDITY (ntu): 320 DO (mg/L - ppm): 10.15 eH/ORP (mV): -241 Other: 2320  
 Units: ft

*Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).*

Sample Appearance: Clear Odor: None Color: - Other: -  
 Weather Conditions (required daily, or as conditions change):            Direction/Speed: S 240 G N Outlook: cloudy Precipitation:  Y or  N

Specific Comments (including purge/well volume calculations if required):  
\* Used Glaco solvent w/ meter

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
11/13/17 Sure Foster                        
 Date Name Signature Company



# FIELD INFORMATION FORM



Site Name: OVSL  
 Site No.:      Sample Point: NW-29A  
Sample ID

**This Waste Management Field Information Form is Required.**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:                     

**PURGE INFO**  
 PURGE DATE (MM DD YY): 11/13/17 PURGE TIME (2400 Hr Clock): AD 13:40 ELAPSED HRS (hrs:min): 20  
 WATER VOL IN CASING (Gallons):      ACTUAL VOL PURGED (Gallons):      WELL VOLS PURGED:     

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  Y or  N  
 Filter Device:  Y or  N 0.45 μ or      μ (circle or fill in)  
 Purging Device:  C A-Submersible Pump D-Bailer  
 B-Peristaltic Pump B-Piston Pump  
 Sampling Device:  C C-QED Bladder Pump F-Dipper/Bottle  
 X-Other:       
 Filter Type:  A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other:       
 Sample Tube Type:  D A-Teflon C-PVC X-Other:       
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC)      (ft/msl) Depth to Water (DTW) (from TOC) 1267 (ft) Groundwater Elevation (site datum, from TOC)      (ft/msl)  
 Total Well Depth (from TOC)      (ft) Stick Up (from ground elevation)      (ft) Casing ID  A (in) Casing Material     

*Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

Sample Time (2400 Hr Clock)	Rate (Unit Vol./Min)	pH (std)	Conductance (SC/EC) (umhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1340	50	6.50	88	10.95		1.35	-2108	
1345		6.36	87	10.93		10.50	-1617	
1348		6.32	86	10.93		10.37	-316	
1351		6.30	85	10.92		10.31	-0.8	
1354		6.29	85	10.92		10.25	0.9	
1357		6.27	85	10.90		0.85	1.8	
1400		6.26	87	10.90	3.33	10.21	2.9	1357

*Suggested range for 3 consec. readings or note Permit/State requirements: pH +/- 0.2, Conductance +/- 3%, Temp. --, Turbidity --, D.O. +/- 10%, eH/ORP +/- 25 mV, DTW Stabilize*

*Stabilization Data Fields are Optional (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 11/13/17 pH (std): 6.26 CONDUCTANCE (umhos/cm @ 25°C): 87 TEMP. (°C): 10.90 TURBIDITY (ntu): 3.33 DO (mg/L-ppm): 0.21 eH/ORP (mV): 2.9 Other: DTW  
 Units: FT

*Final Field Readings are required (i.e. record field measurements; final stabilized readings; passive sample readings before sampling for all field parameters required by State/Permit/Site).*

Sample Appearance: clear Odor:      Color:      Other:       
 Weather Conditions (required daily, or as conditions change):      Direction/Speed: light Outlook: rain Precipitation:  Y or  N  
 Specific Comments (including purge/well volume calculations if required):     

**FIELD COMMENTS**  
      
      
    

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
11/13/17 Alexa Deep Alexa Deep SCS  
 Date Name Signature Company

# FIELD INFORMATION FORM



Site Name: OVSL  
 Site No.: 111317  
 Sample Point: MW-42  
 Sample ID: 0120

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID: \_\_\_\_\_

**PURGE INFO**  
 PURGE DATE (MM DD YY): 11/13/17 PURGE TIME (2400 Hr Clock): 14:30 ELAPSED HRS (hrs:min): \_\_\_\_\_  
 WATER VOL IN CASING (Gallons): \_\_\_\_\_ ACTUAL VOL PURGED (Gallons): \_\_\_\_\_ WELL VOLS PURGED: \_\_\_\_\_

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  Y or  N  
 Purging Device:  A-Submersible Pump  D-Bailer  
 B-Peristaltic Pump  E-Piston Pump  
 Sampling Device:  C-QED Bladder Pump  F-Dipper/Bottle  
 X-Other: \_\_\_\_\_  
 Filter Device:  Y or  N 0.45  $\mu$  or \_\_\_\_\_  $\mu$  (circle or fill in)  
 Filter Type:  A  B-Pressure  C-Vacuum  
 X-Other: \_\_\_\_\_  
 Sample Tube Type:  D  A-Teflon  C-PVC  X-Other: \_\_\_\_\_  
 B-Stainless Steel  D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC): \_\_\_\_\_ (ft) Depth to Water (DTW) (from TOC): 2687 (ft) Groundwater Elevation (site datum, from TOC): \_\_\_\_\_ (ft)  
 Total Well Depth (from TOC): \_\_\_\_\_ (ft) Stick Up (from ground elevation): \_\_\_\_\_ (ft) Casing ID (in): \_\_\_\_\_ Casing Material: \_\_\_\_\_  
*Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

Sample Time (2400 Hr Clock)	Rate/Unit (gallons/min)	pH (std)	Conductance (SC/EC) ( $\mu$ mhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
14410	300	6.610	5101	12.07		0.52	-4180	
14445		6.716	5160	12.07		0.29	-1677	
14448		6.716	5160	12.08		0.22	-1715	
14451		6.716	5161	12.07		0.20	-1744	
14454		6.777	5160	12.04		10.18	-12164	
14457		6.777	5161	12.05		12.15	-1780	
15100		6.710	5160	12.04	2.72	10.14	-1790	2695

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE ( $\mu$ mhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: <u>DTW</u>
11/13/17	6.70	560	12.04	2.72	0.14	-790	2695

**Final Field Readings are required** (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: clear Odor: \_\_\_\_\_ Color: \_\_\_\_\_ Other: \_\_\_\_\_  
 Weather Conditions (required daily, or as conditions change): \_\_\_\_\_ Direction/Speed: 8 mph Outlook: fair Precipitation:  Y or  N

Specific Comments (including purge/well volume calculations if required): \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
11/13/17 ALYO DEO [Signature] [Signature] [Signature]  
 Date Name Signature Company

# Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>		Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:		
Client Contact:		Sara, Betsy A	Sara, Betsy A		280-419460.1		
Shipping/Receiving		Phone:	E-Mail:	State of Origin:	Page:		
Company:		TestAmerica Laboratories, Inc.	betsy.sara@testamericainc.com	Washington	Page 1 of 1		
Address:		10 Hazelwood Drive,	Accreditations Required (See note):				
City:		Amherst	NELAP - Oregon				
State, Zip:		NY, 14228-2298	Preservation Codes:				
Phone:		716-691-2600(Tel) 716-691-7991(Fax)	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 Other:				
Email:			M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)				
Project Name:		WA02[Olympic View Sanitary LF	Analysis Requested				
Site:		WA02[Olympic View Sanitary LF	Total Number of Containers				
Due Date Requested:		12/17/2017	8260C/5030C (MOD) Appendix II Volatiles				
TAT Requested (days):			8260C_SIM/5030C (MOD) Local Method				
PO #:			Form MS/MSD (Yes or No)				
WO #:			Field Filtered Sample (Yes or No)				
Project #:		28002692	8260C/5030C (MOD) Appendix II Volatiles				
SSOW#:			8260C_SIM/5030C (MOD) Local Method				
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste, oil)	Preservation Code: (B=TBSP, A=Air)	Special Instructions/Note:
MW-13A (280-103543-1)	11/13/17	11:21 Pacific	Water				
MW-13B (280-103543-2)	11/13/17	11:20 Pacific	Water				
MW-16 (280-103543-3)	11/13/17	12:55 Pacific	Water				
MW-39 (280-103543-4)	11/13/17	14:20 Pacific	Water				
MW-29A (280-103543-5)	11/13/17	14:00 Pacific	Water				
MW-42 (280-103543-6)	11/13/17	15:00 Pacific	Water				
TRIP BLANK (280-103543-7)	11/13/17	Pacific	Water				

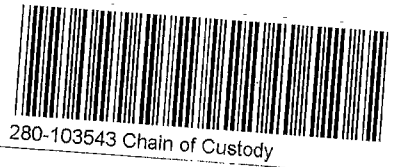
Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation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

**Possible Hazard Identification**  
 Unconfirmed  
 Deliverable Requested: I, II, III, IV, Other (specify) \_\_\_\_\_  
 Primary Deliverable Rank: 2

Empty Kit Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Relinquished by: *Tom Stroh* Date: *11/13/17* *15:20*  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

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

Special Instructions/QC Requirements:  
 Method of Shipment: \_\_\_\_\_  
 Received by: *[Signature]* Date/Time: *11/17/17 09:30*  
 Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Cooler Temperature(s) °C and Other Remarks: *# 3.3°C*



**COOLER RECEIPT FORM**

Cooler Received/Opened On 11/21/2017 @ 09:00

Time Samples Removed From Cooler \_\_\_\_\_ Time Samples Placed In Storage \_\_\_\_\_ (2 Hour Window)

1. Tracking # 4364 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 160656838 pH Strip Lot \_\_\_\_\_ Chlorine Strip Lot \_\_\_\_\_

2. Temperature of rep. sample or temp blank when opened: 4.3 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA  
 If yes, how many and where: 1 front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial) ADH

7. Were custody seals on containers: YES NO and Intact YES...NO...NA  
 Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA



14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # \_\_\_\_\_

I certify that I unloaded the cooler and answered questions 7-14 (initial) ES

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) ES

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) ES

I certify that I attached a label with the unique LIMS number to each container (initial) ES

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...# ES

## Login Sample Receipt Checklist

Client: Waste Management

Job Number: 280-103543-1

**Login Number: 103543**

**List Source: TestAmerica Denver**

**List Number: 1**

**Creator: True, Joshua A**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

## Login Sample Receipt Checklist

Client: Waste Management

Job Number: 280-103543-1

**Login Number: 103543**  
**List Number: 2**  
**Creator: Hulbert, Michael J**

**List Source: TestAmerica Buffalo**  
**List Creation: 11/18/17 12:01 PM**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.3 #1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	False	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

## ANALYTICAL REPORT

Job Number: 280-103730-1

Job Description: WA02|Olympic View Sanitary LF

For:

Waste Management

2615 Davis Street

San Leandro, CA 94577

Attention: Mr. Patrick Madej



Approved for release.  
Betsy A Sara  
Project Manager II  
12/14/2017 4:30 PM

---

Betsy A Sara, Project Manager II  
4955 Yarrow Street, Arvada, CO, 80002  
(303)736-0189  
betsy.sara@testamericainc.com  
12/14/2017

cc: Mr. Dan Venchiarutti

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

**TestAmerica Laboratories, Inc.**

TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002  
Tel (303) 736-0100 Fax (303) 431-7171 [www.testamericainc.com](http://www.testamericainc.com)



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## CASE NARRATIVE

Client: Waste Management

Project: WA02|Olympic View Sanitary LF

Report Number: 280-103730-1

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

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

### Sample Receiving

The samples were received on 11/17/2017 12:15 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.7° C.

### Holding Times

The Nitrate result was derived from a calculation and the analysis date/time reflects when the calculation was performed. Nitrate+Nitrite and Nitrite results were required for the calculation. Nitrate+Nitrite analysis has a 28-day holding time. Nitrite analysis has a 48-hour holding time, and due to greater than half of the holding time expiring in transit, the associated Nitrite analysis was performed outside of the 48-hour holding time for the samples MW-35 and MW-32.

All other holding times were within established control limits.

### Trip Blank

N-Butyl alcohol and Chloromethane were detected in the trip blank sample at levels below the requested reporting limits. N-Butyl alcohol and Chloromethane were also detected in several samples at similar levels, therefore indicating the possibility of field or laboratory contamination of N-Butyl alcohol and Chloromethane in these samples.

### Method Blanks

1,4-Dioxane method 8260C was detected in the Method Blank below the project established reporting limits. No corrective action is taken for any values in Method Blanks that are below the requested reporting limits.

All other Method Blank recoveries were within established control limits.

### Laboratory Control Samples (LCS)

The Method 8260C LCS recovery for Vinyl chloride, 1,1-Dichloropropene, Chloromethane and Acetone was above control limits. Because the data are considered to be biased high and all associated samples were non-detect above the reporting limit, corrective action was deemed unnecessary.

All other Laboratory Control Samples were within established control limits.

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

The Matrix Spikes and Matrix Spike Duplicates performed on samples from another job exhibited MS/MSD surrogate recoveries of Dibromofluoromethane outside control limits. Because the corresponding Matrix Spike and Matrix Spike Duplicate target compound recoveries, Laboratory Control Sample, and Method Blank sample were within control limits, this anomaly is considered to be due to matrix interference and no corrective action was taken.

The Matrix Spikes and Matrix Spike Duplicates performed on samples from other clients exhibited recoveries outside control limits for multiple Method 8260C spike compounds and surrogates. In addition, the RPD results were outside the RPD limits for multiple Method 8260C spike compounds. Because the corresponding Laboratory Control Samples and the Method Blank samples were within control limits, these anomalies may be due to matrix interference and no corrective action was taken.

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

**Sample Duplicate**

The RPD for Total Suspended Solids (TSS) Method 2540D performed on sample from another client and/or job was outside control limits. Because all other QC and calibration criteria were met no corrective action was needed.

**Organics**

The analytes Acrolein, Acrylonitrile and 2-chloroethyl vinyl ether cannot be reliably quantitated in acid preserved samples, therefore, the reporting limits for the analytes Acrolein, Acrylonitrile and 2-chloroethyl vinyl ether is not reliable or defensible.

The method 8260C results reported for the following sample do not concur with results previously reported for this site: MW-35 (280-103730-1). Reanalysis was performed, and the results confirmed.

The method 8260C continuing calibration verification (CCV) associated with batch 480-388459 recovered above the upper control limit for Cyclohexane, Vinyl chloride, sec-Butylbenzene, 4-Isopropyltoluene, 1,1-Dichloropropene, Hexane, Chloromethane, Isopropyl ether, and Methylcyclohexane. 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-35 (280-103730-1), MW-32 (280-103730-2) and TRIP BLANK (280-103730-3).

**General Comments**

The analysis for Volatile Organics by Method 8260C was performed by TestAmerica Buffalo. Their address and phone number are:  
TestAmerica Buffalo  
10 Hazelwood Drive, Suite 106  
Amherst, NY 14228  
716-691-2600

## EXECUTIVE SUMMARY - Detections

Client: Waste Management

Job Number: 280-103730-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-103730-1</b>	<b>MW-35</b>					
Butyl alcohol, n-		40		40	ug/L	8260C
Depth to water		72.09			ft	Field Sampling
Specific Conductivity		161			umhos/cm	Field Sampling
Dissolved Oxygen		5.56			mg/L	Field Sampling
eH		181.7			millivolts	Field Sampling
Turbidity		2.81			NTU	Field Sampling
Temperature		9.83			Degrees C	Field Sampling
pH		6.98			SU	Field Sampling
Chloride		1.7		1.0	mg/L	300.0
Sulfate		2.8		1.0	mg/L	300.0
Nitrate as N		0.51		0.050	mg/L	353.2
Alkalinity, Total (As CaCO3)		77		5.0	mg/L	SM 2320B
Alkalinity, Bicarbonate (As CaCO3)		77		5.0	mg/L	SM 2320B
Total Dissolved Solids (TDS)		100		5.0	mg/L	SM 2540C
<b><i>Dissolved</i></b>						
Calcium, Dissolved		13		0.040	mg/L	6010D
Magnesium, Dissolved		8.5		0.050	mg/L	6010D
Potassium, Dissolved		0.31	J	1.0	mg/L	6010D
Sodium, Dissolved		5.0		1.0	mg/L	6010D
<b><i>Total Recoverable</i></b>						
Barium, Total		0.0028		0.0010	mg/L	6020B
Chromium, Total		0.0026	J	0.0030	mg/L	6020B
Vanadium, Total		0.0040		0.0020	mg/L	6020B

## EXECUTIVE SUMMARY - Detections

Client: Waste Management

Job Number: 280-103730-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-103730-2</b>	<b>MW-32</b>					
Vinyl chloride		0.24		0.020	ug/L	8260B SIM
Butyl alcohol, n-		28	J	40	ug/L	8260C
Vinyl chloride		0.37		0.020	ug/L	8260C SIM
Depth to water		0.97			ft	Field Sampling
Specific Conductivity		263			umhos/cm	Field Sampling
Dissolved Oxygen		0.15			mg/L	Field Sampling
eH		-36.6			millivolts	Field Sampling
Turbidity		1.85			NTU	Field Sampling
Temperature		11.90			Degrees C	Field Sampling
pH		7.01			SU	Field Sampling
Chloride		12		1.0	mg/L	300.0
Sulfate		10		1.0	mg/L	300.0
Ammonia (as N)		0.034		0.030	mg/L	350.1
Alkalinity, Total (As CaCO3)		110		5.0	mg/L	SM 2320B
Alkalinity, Bicarbonate (As CaCO3)		110		5.0	mg/L	SM 2320B
Total Dissolved Solids (TDS)		200		5.0	mg/L	SM 2540C
Total Organic Carbon - Average		1.4		1.0	mg/L	SM 5310B
<b><i>Dissolved</i></b>						
Calcium, Dissolved		22		0.040	mg/L	6010D
Iron, Dissolved		0.56		0.060	mg/L	6010D
Magnesium, Dissolved		11		0.050	mg/L	6010D
Potassium, Dissolved		0.58	J	1.0	mg/L	6010D
Sodium, Dissolved		11		1.0	mg/L	6010D
Manganese, Dissolved		1.8		0.0010	mg/L	6020B
<b><i>Total Recoverable</i></b>						
Iron, Total		0.62		0.060	mg/L	6010D
Barium, Total		0.0039		0.0010	mg/L	6020B
Manganese, Total		1.9		0.0010	mg/L	6020B
Nickel, Total		0.00078	J	0.0040	mg/L	6020B
<b>280-103730-3TB</b>	<b>TRIP BLANK</b>					
Butyl alcohol, n-		26	J	40	ug/L	8260C
Chloromethane		0.60	J*	1.0	ug/L	8260C

## METHOD SUMMARY

Client: Waste Management

Job Number: 280-103730-1

Description	Lab Location	Method	Preparation Method
<b>Matrix: Water</b>			
Volatile Organic Compounds (GC/MS)	TAL DEN	SW846 8260B	SIM
Purge and Trap	TAL DEN		SW846 5030B
Metals (ICP)	TAL DEN	SW846 6010D	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Metals (ICP)	TAL DEN	SW846 6010D	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Metals (ICP/MS)	TAL DEN	SW846 6020B	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Metals (ICP/MS)	TAL DEN	SW846 6020B	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Anions, Ion Chromatography	TAL DEN	MCAWW 300.0	
Nitrogen, Ammonia	TAL DEN	MCAWW 350.1	
Nitrate	TAL DEN	EPA 353.2	
Alkalinity	TAL DEN	SM SM 2320B	
Solids, Total Dissolved (TDS)	TAL DEN	SM SM 2540C	
Solids, Total Suspended (TSS)	TAL DEN	SM SM 2540D	
Organic Carbon, Total (TOC)	TAL DEN	SM SM 5310B	
Field Sampling	TAL DEN	EPA Field Sampling	
Volatile Organic Compounds by GC/MS	TAL BUF	SW846 8260C	
Purge and Trap	TAL BUF		SW846 5030C
Volatile Organic Compounds (GC/MS)	TAL BUF	SW846 8260C	SIM
Purge and Trap	TAL BUF		SW846 5030C

### Lab References:

TAL BUF = TestAmerica Buffalo

TAL DEN = TestAmerica Denver

### Method 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.

## METHOD / ANALYST SUMMARY

Client: Waste Management

Job Number: 280-103730-1

<b>Method</b>	<b>Analyst</b>	<b>Analyst ID</b>
SW846 8260B SIM	Moan, Matthew R	MRM
SW846 8260C	Reile, Rebecca S	RRS
SW846 8260C SIM	Farrell, Ryan J	RJF
SW846 6010D	Lackey, Cara M	CML
SW846 6020B	Trudell, Lynn-Anne M	LMT
EPA Field Sampling	Sabsin, Chanchai	CS
MCAWW 300.0	Lehman, Jeffrey M	JML
MCAWW 350.1	Moore, Kevin A	KAM
EPA 353.2	Allen, Andrew J	AJA
SM SM 2320B	Duplin, Alysha 1	A1D
SM SM 2540C	Pedrick, Joshua A	JAP
SM SM 2540D	Cherry, Scott V	SVC
SM SM 5310B	Jewell, Connie C	CCJ

## SAMPLE SUMMARY

Client: Waste Management

Job Number: 280-103730-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
280-103730-1	MW-35	Water	11/15/2017 0925	11/17/2017 1215
280-103730-2	MW-32	Water	11/15/2017 1046	11/17/2017 1215
280-103730-3TB	TRIP BLANK	Water	11/15/2017 0000	11/17/2017 1215

# SAMPLE RESULTS



# Analytical Data

Client: Waste Management

Job Number: 280-103730-1

**Client Sample ID: MW-35**

Lab Sample ID: 280-103730-1

Date Sampled: 11/15/2017 0925

Client Matrix: Water

Date Received: 11/17/2017 1215

---

## 8260B SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B SIM	Analysis Batch:	280-396651	Instrument ID:	VMS_E
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	E5801.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	11/28/2017 0039			Final Weight/Volume:	20 mL
Prep Date:	11/28/2017 0039				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.018	0.020
Surrogate	%Rec	Qualifier	Acceptance Limits	
Dibromofluoromethane (Surr)	83		77 - 120	

# Analytical Data

Client: Waste Management

Job Number: 280-103730-1

**Client Sample ID: MW-32**

Lab Sample ID: 280-103730-2

Date Sampled: 11/15/2017 1046

Client Matrix: Water

Date Received: 11/17/2017 1215

---

## 8260B SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B SIM	Analysis Batch:	280-396651	Instrument ID:	VMS_E
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	E5802.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	11/28/2017 0057			Final Weight/Volume:	20 mL
Prep Date:	11/28/2017 0057				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.24		0.018	0.020
Surrogate	%Rec	Qualifier	Acceptance Limits	
Dibromofluoromethane (Surr)	78		77 - 120	

# Analytical Data

Client: Waste Management

Job Number: 280-103730-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 280-103730-3TB

Client Matrix: Water

Date Sampled: 11/15/2017 0000

Date Received: 11/17/2017 1215

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## 8260B SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B SIM	Analysis Batch:	280-396684	Instrument ID:	VMS_E
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	E5845.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	11/28/2017 1733			Final Weight/Volume:	20 mL
Prep Date:	11/28/2017 1733				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.018	0.020

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	0	X	70 - 127

# Analytical Data

Client: Waste Management

Job Number: 280-103730-1

**Client Sample ID: MW-35**

Lab Sample ID: 280-103730-1

Date Sampled: 11/15/2017 0925

Client Matrix: Water

Date Received: 11/17/2017 1215

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388459	Instrument ID: HP5975T
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: T2036.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/20/2017 2215		Final Weight/Volume: 5 mL
Prep Date: 11/20/2017 2215		

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.35	1.0
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,1-Dichloropropene	ND	*	0.72	1.0
1,2,3-Trichlorobenzene	ND		0.41	1.0
1,2,3-Trichloropropane	ND		0.89	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2,4-Trimethylbenzene	ND		0.75	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane (EDB)	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloroethene, Total	ND		0.81	2.0
1,2-Dichloropropane	ND		0.72	1.0
1,3,5-Trichlorobenzene	ND		0.23	1.0
1,3,5-Trimethylbenzene	ND		0.77	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,3-Dichloropropane	ND		0.75	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
1,4-Dioxane	ND		9.3	40
2,2-Dichloropropane	ND		0.40	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chloroethyl vinyl ether	ND		0.96	5.0
2-Hexanone	ND		1.2	5.0
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND	*	3.0	10
Acetonitrile	ND		4.9	15
Acrolein	ND		0.91	20
Acrylonitrile	ND		0.83	5.0
Benzene	ND		0.41	1.0
Bromobenzene	ND		0.80	1.0
Bromochloromethane	ND		0.87	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Butyl alcohol, n-	40		8.9	40
Butyl alcohol, tert-	ND		3.3	10
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Chlorodifluoromethane	ND		0.26	1.0
Chloroethane	ND		0.32	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103730-1

Client Sample ID: MW-35

Lab Sample ID: 280-103730-1

Date Sampled: 11/15/2017 0925

Client Matrix: Water

Date Received: 11/17/2017 1215

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C                      Analysis Batch: 480-388459                      Instrument ID: HP5975T  
Prep Method: 5030C                      Prep Batch: N/A                      Lab File ID: T2036.D  
Dilution: 1.0                      Initial Weight/Volume: 5 mL  
Analysis Date: 11/20/2017 2215                      Final Weight/Volume: 5 mL  
Prep Date: 11/20/2017 2215

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloroform	ND		0.34	1.0
Chloromethane	ND	*	0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dibromochloromethane	ND		0.32	1.0
Dibromomethane	ND		0.41	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Dichlorofluoromethane	ND		0.34	1.0
Ethyl acetate	ND		0.66	1.0
Ethyl ether	ND		0.72	1.0
Ethyl tert-butyl ether	ND		0.29	1.0
Ethylbenzene	ND		0.74	1.0
Hexachlorobutadiene	ND		0.28	1.0
Hexane	ND		0.40	10
Iodomethane	ND		0.30	1.0
Isobutanol	ND		4.8	25
Isopropyl ether	ND		0.59	1.0
Isopropylbenzene	ND		0.79	1.0
Methacrylonitrile	ND		0.69	5.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
m-Xylene & p-Xylene	ND		0.66	2.0
Naphthalene	ND		0.43	1.0
n-Butylbenzene	ND		0.64	1.0
N-Propylbenzene	ND		0.69	1.0
o-Chlorotoluene	ND		0.86	1.0
o-Xylene	ND		0.76	1.0
p-Chlorotoluene	ND		0.84	1.0
p-Cymene	ND		0.31	1.0
sec-Butylbenzene	ND		0.75	1.0
Styrene	ND		0.73	1.0
Tert-amyl methyl ether	ND		0.27	1.0
tert-Butylbenzene	ND		0.81	1.0
Tetrachloroethene	ND		0.36	1.0
Tetrahydrofuran	ND		1.3	5.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
trans-1,4-Dichloro-2-butene	ND		0.22	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0
Vinyl acetate	ND		0.85	5.0
Vinyl chloride	ND	*	0.90	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103730-1

**Client Sample ID: MW-35**

Lab Sample ID: 280-103730-1

Date Sampled: 11/15/2017 0925

Client Matrix: Water

Date Received: 11/17/2017 1215

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## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388459	Instrument ID: HP5975T
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: T2036.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/20/2017 2215		Final Weight/Volume: 5 mL
Prep Date: 11/20/2017 2215		

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100		77 - 120
4-Bromofluorobenzene (Surr)	79		73 - 120
Toluene-d8 (Surr)	100		80 - 120

## Analytical Data

Client: Waste Management

Job Number: 280-103730-1

**Client Sample ID: MW-35**

Lab Sample ID: 280-103730-1

Date Sampled: 11/15/2017 0925

Client Matrix: Water

Date Received: 11/17/2017 1215

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### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-388459	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T2036.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	11/20/2017 2215			Final Weight/Volume:	5 mL
Prep Date:	11/20/2017 2215				

### Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
67-72-1	Hexachloroethane TIC	ND	

# Analytical Data

Client: Waste Management

Job Number: 280-103730-1

Client Sample ID: MW-32

Lab Sample ID: 280-103730-2

Date Sampled: 11/15/2017 1046

Client Matrix: Water

Date Received: 11/17/2017 1215

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388459	Instrument ID: HP5975T
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: T2037.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/20/2017 2239		Final Weight/Volume: 5 mL
Prep Date: 11/20/2017 2239		

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.35	1.0
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,1-Dichloropropene	ND	*	0.72	1.0
1,2,3-Trichlorobenzene	ND		0.41	1.0
1,2,3-Trichloropropane	ND		0.89	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2,4-Trimethylbenzene	ND		0.75	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane (EDB)	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloroethene, Total	ND		0.81	2.0
1,2-Dichloropropane	ND		0.72	1.0
1,3,5-Trichlorobenzene	ND		0.23	1.0
1,3,5-Trimethylbenzene	ND		0.77	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,3-Dichloropropane	ND		0.75	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
1,4-Dioxane	ND		9.3	40
2,2-Dichloropropane	ND		0.40	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chloroethyl vinyl ether	ND		0.96	5.0
2-Hexanone	ND		1.2	5.0
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND	*	3.0	10
Acetonitrile	ND		4.9	15
Acrolein	ND		0.91	20
Acrylonitrile	ND		0.83	5.0
Benzene	ND		0.41	1.0
Bromobenzene	ND		0.80	1.0
Bromochloromethane	ND		0.87	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Butyl alcohol, n-	28	J	8.9	40
Butyl alcohol, tert-	ND		3.3	10
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Chlorodifluoromethane	ND		0.26	1.0
Chloroethane	ND		0.32	1.0



# Analytical Data

Client: Waste Management

Job Number: 280-103730-1

**Client Sample ID: MW-32**

Lab Sample ID: 280-103730-2

Date Sampled: 11/15/2017 1046

Client Matrix: Water

Date Received: 11/17/2017 1215

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-388459	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T2037.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	11/20/2017 2239			Final Weight/Volume:	5 mL
Prep Date:	11/20/2017 2239				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloroform	ND		0.34	1.0
Chloromethane	ND	*	0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dibromochloromethane	ND		0.32	1.0
Dibromomethane	ND		0.41	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Dichlorofluoromethane	ND		0.34	1.0
Ethyl acetate	ND		0.66	1.0
Ethyl ether	ND		0.72	1.0
Ethyl tert-butyl ether	ND		0.29	1.0
Ethylbenzene	ND		0.74	1.0
Hexachlorobutadiene	ND		0.28	1.0
Hexane	ND		0.40	10
Iodomethane	ND		0.30	1.0
Isobutanol	ND		4.8	25
Isopropyl ether	ND		0.59	1.0
Isopropylbenzene	ND		0.79	1.0
Methacrylonitrile	ND		0.69	5.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
m-Xylene & p-Xylene	ND		0.66	2.0
Naphthalene	ND		0.43	1.0
n-Butylbenzene	ND		0.64	1.0
N-Propylbenzene	ND		0.69	1.0
o-Chlorotoluene	ND		0.86	1.0
o-Xylene	ND		0.76	1.0
p-Chlorotoluene	ND		0.84	1.0
p-Cymene	ND		0.31	1.0
sec-Butylbenzene	ND		0.75	1.0
Styrene	ND		0.73	1.0
Tert-amyl methyl ether	ND		0.27	1.0
tert-Butylbenzene	ND		0.81	1.0
Tetrachloroethene	ND		0.36	1.0
Tetrahydrofuran	ND		1.3	5.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
trans-1,4-Dichloro-2-butene	ND		0.22	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0
Vinyl acetate	ND		0.85	5.0
Vinyl chloride	ND	*	0.90	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103730-1

**Client Sample ID: MW-32**

Lab Sample ID: 280-103730-2

Date Sampled: 11/15/2017 1046

Client Matrix: Water

Date Received: 11/17/2017 1215

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## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388459	Instrument ID: HP5975T
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: T2037.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/20/2017 2239		Final Weight/Volume: 5 mL
Prep Date: 11/20/2017 2239		

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	99		77 - 120
4-Bromofluorobenzene (Surr)	87		73 - 120
Toluene-d8 (Surr)	98		80 - 120

## Analytical Data

Client: Waste Management

Job Number: 280-103730-1

**Client Sample ID: MW-32**

Lab Sample ID: 280-103730-2

Date Sampled: 11/15/2017 1046

Client Matrix: Water

Date Received: 11/17/2017 1215

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### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 480-388459

Instrument ID: HP5975T

Prep Method: 5030C

Prep Batch: N/A

Lab File ID: T2037.D

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 11/20/2017 2239

Final Weight/Volume: 5 mL

Prep Date: 11/20/2017 2239

### Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
67-72-1	Hexachloroethane TIC	ND	

# Analytical Data

Client: Waste Management

Job Number: 280-103730-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 280-103730-3TB

Date Sampled: 11/15/2017 0000

Client Matrix: Water

Date Received: 11/17/2017 1215

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-388459	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T2038.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	11/20/2017 2303			Final Weight/Volume:	5 mL
Prep Date:	11/20/2017 2303				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.35	1.0
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,1-Dichloropropene	ND	*	0.72	1.0
1,2,3-Trichlorobenzene	ND		0.41	1.0
1,2,3-Trichloropropane	ND		0.89	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2,4-Trimethylbenzene	ND		0.75	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane (EDB)	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloroethene, Total	ND		0.81	2.0
1,2-Dichloropropane	ND		0.72	1.0
1,3,5-Trichlorobenzene	ND		0.23	1.0
1,3,5-Trimethylbenzene	ND		0.77	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,3-Dichloropropane	ND		0.75	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
1,4-Dioxane	ND		9.3	40
2,2-Dichloropropane	ND		0.40	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chloroethyl vinyl ether	ND		0.96	5.0
2-Hexanone	ND		1.2	5.0
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND	*	3.0	10
Acetonitrile	ND		4.9	15
Acrolein	ND		0.91	20
Acrylonitrile	ND		0.83	5.0
Benzene	ND		0.41	1.0
Bromobenzene	ND		0.80	1.0
Bromochloromethane	ND		0.87	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Butyl alcohol, n-	26	J	8.9	40
Butyl alcohol, tert-	ND		3.3	10
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Chlorodifluoromethane	ND		0.26	1.0
Chloroethane	ND		0.32	1.0

## Analytical Data

Client: Waste Management

Job Number: 280-103730-1

**Client Sample ID: TRIP BLANK**

Lab Sample ID: 280-103730-3TB

Date Sampled: 11/15/2017 0000

Client Matrix: Water

Date Received: 11/17/2017 1215

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388459	Instrument ID: HP5975T	
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: T2038.D	
Dilution: 1.0		Initial Weight/Volume: 5 mL	
Analysis Date: 11/20/2017 2303		Final Weight/Volume: 5 mL	
Prep Date: 11/20/2017 2303			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloroform	ND		0.34	1.0
Chloromethane	0.60	J *	0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dibromochloromethane	ND		0.32	1.0
Dibromomethane	ND		0.41	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Dichlorofluoromethane	ND		0.34	1.0
Ethyl acetate	ND		0.66	1.0
Ethyl ether	ND		0.72	1.0
Ethyl tert-butyl ether	ND		0.29	1.0
Ethylbenzene	ND		0.74	1.0
Hexachlorobutadiene	ND		0.28	1.0
Hexane	ND		0.40	10
Iodomethane	ND		0.30	1.0
Isobutanol	ND		4.8	25
Isopropyl ether	ND		0.59	1.0
Isopropylbenzene	ND		0.79	1.0
Methacrylonitrile	ND		0.69	5.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
m-Xylene & p-Xylene	ND		0.66	2.0
Naphthalene	ND		0.43	1.0
n-Butylbenzene	ND		0.64	1.0
N-Propylbenzene	ND		0.69	1.0
o-Chlorotoluene	ND		0.86	1.0
o-Xylene	ND		0.76	1.0
p-Chlorotoluene	ND		0.84	1.0
p-Cymene	ND		0.31	1.0
sec-Butylbenzene	ND		0.75	1.0
Styrene	ND		0.73	1.0
Tert-amyl methyl ether	ND		0.27	1.0
tert-Butylbenzene	ND		0.81	1.0
Tetrachloroethene	ND		0.36	1.0
Tetrahydrofuran	ND		1.3	5.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
trans-1,4-Dichloro-2-butene	ND		0.22	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0
Vinyl acetate	ND		0.85	5.0
Vinyl chloride	ND	*	0.90	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103730-1

**Client Sample ID: TRIP BLANK**

Lab Sample ID: 280-103730-3TB

Date Sampled: 11/15/2017 0000

Client Matrix: Water

Date Received: 11/17/2017 1215

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## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388459	Instrument ID: HP5975T
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: T2038.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/20/2017 2303		Final Weight/Volume: 5 mL
Prep Date: 11/20/2017 2303		

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	99		77 - 120
4-Bromofluorobenzene (Surr)	91		73 - 120
Toluene-d8 (Surr)	102		80 - 120

## Analytical Data

Client: Waste Management

Job Number: 280-103730-1

**Client Sample ID: TRIP BLANK**

Lab Sample ID: 280-103730-3TB

Date Sampled: 11/15/2017 0000

Client Matrix: Water

Date Received: 11/17/2017 1215

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### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-388459	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T2038.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	11/20/2017 2303			Final Weight/Volume:	5 mL
Prep Date:	11/20/2017 2303				

### Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
67-72-1	Hexachloroethane TIC	ND	

# Analytical Data

Client: Waste Management

Job Number: 280-103730-1

**Client Sample ID: MW-35**

Lab Sample ID: 280-103730-1

Date Sampled: 11/15/2017 0925

Client Matrix: Water

Date Received: 11/17/2017 1215

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## 8260C SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C SIM	Analysis Batch:	480-389245	Instrument ID:	HP5973J
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	J4998.D
Dilution:	1.0			Initial Weight/Volume:	25 mL
Analysis Date:	11/27/2017 1710			Final Weight/Volume:	25 mL
Prep Date:	11/27/2017 1710				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.0040	0.020

Surrogate	%Rec	Qualifier	Acceptance Limits
Dibromofluoromethane (Surr)	111		50 - 150
TBA-d9 (Surr)	114		50 - 150



# Analytical Data

Client: Waste Management

Job Number: 280-103730-1

**Client Sample ID: MW-32**

Lab Sample ID: 280-103730-2

Date Sampled: 11/15/2017 1046

Client Matrix: Water

Date Received: 11/17/2017 1215

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## 8260C SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C SIM	Analysis Batch:	480-389245	Instrument ID:	HP5973J
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	J4999.D
Dilution:	1.0			Initial Weight/Volume:	25 mL
Analysis Date:	11/27/2017 1734			Final Weight/Volume:	25 mL
Prep Date:	11/27/2017 1734				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.37		0.0040	0.020

Surrogate	%Rec	Qualifier	Acceptance Limits
Dibromofluoromethane (Surr)	109		50 - 150
TBA-d9 (Surr)	116		50 - 150

# Analytical Data

Client: Waste Management

Job Number: 280-103730-1

**Client Sample ID: TRIP BLANK**

Lab Sample ID: 280-103730-3TB

Date Sampled: 11/15/2017 0000

Client Matrix: Water

Date Received: 11/17/2017 1215

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## 8260C SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C SIM	Analysis Batch:	480-389245	Instrument ID:	HP5973J
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	J5000.D
Dilution:	1.0			Initial Weight/Volume:	25 mL
Analysis Date:	11/27/2017 1758			Final Weight/Volume:	25 mL
Prep Date:	11/27/2017 1758				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.0040	0.020

Surrogate	%Rec	Qualifier	Acceptance Limits
Dibromofluoromethane (Surr)	112		50 - 150
TBA-d9 (Surr)	107		50 - 150

# Analytical Data

Client: Waste Management

Job Number: 280-103730-1

**Client Sample ID: MW-35**

Lab Sample ID: 280-103730-1  
Client Matrix: Water

Date Sampled: 11/15/2017 0925  
Date Received: 11/17/2017 1215

## 6010D Metals (ICP)-Total Recoverable

Analysis Method: 6010D      Analysis Batch: 280-396876      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-396510      Lab File ID: 51A112817A.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/28/2017 2040      Final Weight/Volume: 50 mL  
Prep Date: 11/28/2017 0806

Analyte	Result (mg/L)	Qualifier	MDL	RL
Cobalt, Total	ND		0.0012	0.0030
Iron, Total	ND		0.022	0.060

## 6010D Metals (ICP)-Dissolved

Analysis Method: 6010D      Analysis Batch: 280-397056      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-396780      Lab File ID: 51A112917C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/29/2017 2210      Final Weight/Volume: 50 mL  
Prep Date: 11/29/2017 1423

Analyte	Result (mg/L)	Qualifier	MDL	RL
Iron, Dissolved	ND		0.022	0.060
Potassium, Dissolved	0.31	J	0.24	1.0

Analysis Method: 6010D      Analysis Batch: 280-397251      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-396780      Lab File ID: 51A113017A.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/30/2017 1548      Final Weight/Volume: 50 mL  
Prep Date: 11/29/2017 1423

Analyte	Result (mg/L)	Qualifier	MDL	RL
Calcium, Dissolved	13		0.035	0.040
Magnesium, Dissolved	8.5		0.011	0.050
Sodium, Dissolved	5.0		0.12	1.0

## 6020B Metals (ICP/MS)-Total Recoverable

Analysis Method: 6020B      Analysis Batch: 280-396711      Instrument ID: MT\_078  
Prep Method: 3005A      Prep Batch: 280-396509      Lab File ID: 208SMPL\_112717.D  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/28/2017 0059      Final Weight/Volume: 50 mL  
Prep Date: 11/27/2017 1610

Analyte	Result (mg/L)	Qualifier	MDL	RL
Antimony, Total	ND		0.00040	0.0010
Barium, Total	0.0028		0.00029	0.0010
Beryllium, Total	ND		0.000080	0.0010
Cadmium, Total	ND		0.00027	0.00020
Chromium, Total	0.0026	J	0.00050	0.0030
Copper, Total	ND		0.00056	0.0020
Lead, Total	ND		0.00018	0.0010

# Analytical Data

Client: Waste Management

Job Number: 280-103730-1

**Client Sample ID: MW-35**

Lab Sample ID: 280-103730-1

Date Sampled: 11/15/2017 0925

Client Matrix: Water

Date Received: 11/17/2017 1215

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## 6020B Metals (ICP/MS)-Total Recoverable

Analyte	Result (mg/L)	Qualifier	MDL	RL
Manganese, Total	ND		0.00031	0.0010
Nickel, Total	ND		0.00030	0.0040
Selenium, Total	ND		0.00070	0.0010
Silver, Total	ND		0.000033	0.0020
Thallium, Total	ND		0.000050	0.0010
Vanadium, Total	0.0040		0.00050	0.0020
Zinc, Total	ND		0.0020	0.0050

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## 6020B Metals (ICP/MS)-Dissolved

Analysis Method: 6020B	Analysis Batch: 280-397048	Instrument ID: MT_077
Prep Method: 3005A	Prep Batch: 280-396777	Lab File ID: 195SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/29/2017 2318		Final Weight/Volume: 50 mL
Prep Date: 11/29/2017 1423		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Manganese, Dissolved	ND		0.00031	0.0010

# Analytical Data

Client: Waste Management

Job Number: 280-103730-1

**Client Sample ID: MW-32**

Lab Sample ID: 280-103730-2  
Client Matrix: Water

Date Sampled: 11/15/2017 1046  
Date Received: 11/17/2017 1215

## 6010D Metals (ICP)-Total Recoverable

Analysis Method: 6010D      Analysis Batch: 280-396876      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-396510      Lab File ID: 51A112817A.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/28/2017 2043      Final Weight/Volume: 50 mL  
Prep Date: 11/28/2017 0806

Analyte	Result (mg/L)	Qualifier	MDL	RL
Cobalt, Total	ND		0.0012	0.0030
Iron, Total	0.62		0.022	0.060

## 6010D Metals (ICP)-Dissolved

Analysis Method: 6010D      Analysis Batch: 280-397056      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-396780      Lab File ID: 51A112917C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/29/2017 2213      Final Weight/Volume: 50 mL  
Prep Date: 11/29/2017 1423

Analyte	Result (mg/L)	Qualifier	MDL	RL
Iron, Dissolved	0.56		0.022	0.060
Potassium, Dissolved	0.58	J	0.24	1.0

Analysis Method: 6010D      Analysis Batch: 280-397251      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-396780      Lab File ID: 51A113017A.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/30/2017 1603      Final Weight/Volume: 50 mL  
Prep Date: 11/29/2017 1423

Analyte	Result (mg/L)	Qualifier	MDL	RL
Calcium, Dissolved	22		0.035	0.040
Magnesium, Dissolved	11		0.011	0.050
Sodium, Dissolved	11		0.12	1.0

## 6020B Metals (ICP/MS)-Total Recoverable

Analysis Method: 6020B      Analysis Batch: 280-396711      Instrument ID: MT\_078  
Prep Method: 3005A      Prep Batch: 280-396509      Lab File ID: 209SMPL\_112717.D  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/28/2017 0103      Final Weight/Volume: 50 mL  
Prep Date: 11/27/2017 1610

Analyte	Result (mg/L)	Qualifier	MDL	RL
Antimony, Total	ND		0.00040	0.0010
Barium, Total	0.0039		0.00029	0.0010
Beryllium, Total	ND		0.000080	0.0010
Cadmium, Total	ND		0.00027	0.00020
Chromium, Total	ND		0.00050	0.0030
Copper, Total	ND		0.00056	0.0020
Lead, Total	ND		0.00018	0.0010

# Analytical Data

Client: Waste Management

Job Number: 280-103730-1

Client Sample ID: MW-32

Lab Sample ID: 280-103730-2

Date Sampled: 11/15/2017 1046

Client Matrix: Water

Date Received: 11/17/2017 1215

## 6020B Metals (ICP/MS)-Total Recoverable

Analyte	Result (mg/L)	Qualifier	MDL	RL
Manganese, Total	1.9		0.00031	0.0010
Nickel, Total	0.00078	J	0.00030	0.0040
Selenium, Total	ND		0.00070	0.0010
Silver, Total	ND		0.000033	0.0020
Thallium, Total	ND		0.000050	0.0010
Vanadium, Total	ND		0.00050	0.0020
Zinc, Total	ND		0.0020	0.0050

## 6020B Metals (ICP/MS)-Dissolved

Analysis Method: 6020B	Analysis Batch: 280-397048	Instrument ID: MT_077
Prep Method: 3005A	Prep Batch: 280-396777	Lab File ID: 200SMPL.d
Dilution: 1.0		Initial Weight/Volume: 50 mL
Analysis Date: 11/29/2017 2337		Final Weight/Volume: 50 mL
Prep Date: 11/29/2017 1423		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Manganese, Dissolved	1.8		0.00031	0.0010

Client: Waste Management

Job Number: 280-103730-1

General Chemistry

Client Sample ID: MW-35

Lab Sample ID: 280-103730-1

Date Sampled: 11/15/2017 0925

Client Matrix: Water

Date Received: 11/17/2017 1215

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Chloride	1.7		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-398268		Analysis Date: 12/12/2017 0103				
Sulfate	2.8		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-398268		Analysis Date: 12/12/2017 0103				
Ammonia (as N)	ND		mg/L	0.030	0.030	1.0	350.1
	Analysis Batch: 280-397284		Analysis Date: 11/30/2017 2036				
Nitrate as N	0.51		mg/L	0.050	0.050	1.0	353.2
	Analysis Batch: 280-398326		Analysis Date: 12/11/2017 1745				
Alkalinity, Total (As CaCO3)	77		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396376		Analysis Date: 11/22/2017 1900				
Alkalinity, Bicarbonate (As CaCO3)	77		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396376		Analysis Date: 11/22/2017 1900				
Total Dissolved Solids (TDS)	100		mg/L	5.0	5.0	1.0	SM 2540C
	Analysis Batch: 280-395903		Analysis Date: 11/20/2017 1156				
Total Suspended Solids	ND		mg/L	4.0	4.0	1.0	SM 2540D
	Analysis Batch: 280-395948		Analysis Date: 11/20/2017 1638				
Total Organic Carbon - Average	ND		mg/L	1.0	1.0	1.0	SM 5310B
	Analysis Batch: 280-398382		Analysis Date: 12/11/2017 1941				

Client: Waste Management

Job Number: 280-103730-1

General Chemistry

Client Sample ID: MW-32

Lab Sample ID: 280-103730-2

Date Sampled: 11/15/2017 1046

Client Matrix: Water

Date Received: 11/17/2017 1215

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Chloride	12		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-398268		Analysis Date: 12/11/2017 2316				
Sulfate	10		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-398268		Analysis Date: 12/11/2017 2316				
Ammonia (as N)	0.034		mg/L	0.030	0.030	1.0	350.1
	Analysis Batch: 280-397284		Analysis Date: 11/30/2017 2038				
Nitrate as N	ND		mg/L	0.050	0.050	1.0	353.2
	Analysis Batch: 280-398326		Analysis Date: 12/11/2017 1745				
Alkalinity, Total (As CaCO3)	110		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396376		Analysis Date: 11/22/2017 1845				
Alkalinity, Bicarbonate (As CaCO3)	110		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396376		Analysis Date: 11/22/2017 1845				
Total Dissolved Solids (TDS)	200		mg/L	5.0	5.0	1.0	SM 2540C
	Analysis Batch: 280-395903		Analysis Date: 11/20/2017 1156				
Total Suspended Solids	ND		mg/L	4.0	4.0	1.0	SM 2540D
	Analysis Batch: 280-395948		Analysis Date: 11/20/2017 1638				
Total Organic Carbon - Average	1.4		mg/L	1.0	1.0	1.0	SM 5310B
	Analysis Batch: 280-398382		Analysis Date: 12/11/2017 1956				



# Analytical Data

Client: Waste Management

Job Number: 280-103730-1

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## Field Service / Mobile Lab

**Client Sample ID: MW-35**

Lab Sample ID: 280-103730-1

Client Matrix: Water

Date Sampled: 11/15/2017 0925

Date Received: 11/17/2017 1215

Analyte	Result	Qual	Units	Dil	Method	Analysis Batch	Date Analyzed	Date Prepared
Depth to water	72.09		ft	1.0	Field Sampling	280-395824	11/15/2017	1025
Specific Conductivity	161		umhos/cm	1.0	Field Sampling	280-395824	11/15/2017	1025
Dissolved Oxygen	5.56		mg/L	1.0	Field Sampling	280-395824	11/15/2017	1025
eH	181.7		millivolts	1.0	Field Sampling	280-395824	11/15/2017	1025
Turbidity	2.81		NTU	1.0	Field Sampling	280-395824	11/15/2017	1025
Temperature	9.83		Degrees C	1.0	Field Sampling	280-395824	11/15/2017	1025
pH	6.98		SU	1.0	Field Sampling	280-395824	11/15/2017	1025

# Analytical Data

Client: Waste Management

Job Number: 280-103730-1

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## Field Service / Mobile Lab

Client Sample ID: MW-32

Lab Sample ID: 280-103730-2

Client Matrix: Water

Date Sampled: 11/15/2017 1046

Date Received: 11/17/2017 1215

Analyte	Result	Qual	Units	Dil	Method	Analysis Batch	Date Analyzed	Date Prepared
Depth to water	0.97		ft	1.0	Field Sampling	280-395824	11/15/2017	1146
Specific Conductivity	263		umhos/cm	1.0	Field Sampling	280-395824	11/15/2017	1146
Dissolved Oxygen	0.15		mg/L	1.0	Field Sampling	280-395824	11/15/2017	1146
eH	-36.6		millivolts	1.0	Field Sampling	280-395824	11/15/2017	1146
Turbidity	1.85		NTU	1.0	Field Sampling	280-395824	11/15/2017	1146
Temperature	11.90		Degrees C	1.0	Field Sampling	280-395824	11/15/2017	1146
pH	7.01		SU	1.0	Field Sampling	280-395824	11/15/2017	1146

## DATA REPORTING QUALIFIERS

Client: Waste Management

Job Number: 280-103730-1

Lab Section	Qualifier	Description
GC/MS VOA	*	LCS or LCSD is outside acceptance limits.
	F1	MS and/or MSD Recovery is outside acceptance limits.
	F2	MS/MSD RPD exceeds control limits
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
	X	Surrogate is outside control limits
Metals	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
General Chemistry	F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.

# QUALITY CONTROL RESULTS

## Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>GC/MS VOA</b>					
<b>Analysis Batch:480-388459</b>					
LCS 480-388459/4	Lab Control Sample	T	Water	8260C	
MB 480-388459/6	Method Blank	T	Water	8260C	
280-103730-1	MW-35	T	Water	8260C	
280-103730-2	MW-32	T	Water	8260C	
280-103730-3TB	TRIP BLANK	T	Water	8260C	
480-127657-D-1 MS	Matrix Spike	T	Water	8260C	
480-127657-D-1 MSD	Matrix Spike Duplicate	T	Water	8260C	
<b>Analysis Batch:480-389245</b>					
LCS 480-389245/6	Lab Control Sample	T	Water	8260C SIM	
LCSD 480-389245/7	Lab Control Sample Duplicate	T	Water	8260C SIM	
MB 480-389245/9	Method Blank	T	Water	8260C SIM	
280-103730-1	MW-35	T	Water	8260C SIM	
280-103730-2	MW-32	T	Water	8260C SIM	
280-103730-3TB	TRIP BLANK	T	Water	8260C SIM	
<b>Analysis Batch:280-396651</b>					
LCS 280-396651/6	Lab Control Sample	T	Water	8260B SIM	
MB 280-396651/8	Method Blank	T	Water	8260B SIM	
280-103543-J-1 MS	Matrix Spike	T	Water	8260B SIM	
280-103543-J-1 MSD	Matrix Spike Duplicate	T	Water	8260B SIM	
280-103730-1	MW-35	T	Water	8260B SIM	
280-103730-2	MW-32	T	Water	8260B SIM	
<b>Analysis Batch:280-396684</b>					
LCS 280-396684/4	Lab Control Sample	T	Water	8260B SIM	
LCS 280-396684/6	Lab Control Sample	T	Water	8260B SIM	
280-103730-3TB	TRIP BLANK	T	Water	8260B SIM	
280-103795-A-7 MS	Matrix Spike	T	Water	8260B SIM	
280-103795-A-7 MSD	Matrix Spike Duplicate	T	Water	8260B SIM	

**Report Basis**

T = Total

## Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Prep Batch: 280-396509</b>					
LCS 280-396509/2-A	Lab Control Sample	R	Water	3005A	
MB 280-396509/1-A	Method Blank	R	Water	3005A	
280-103614-E-1-B MS	Matrix Spike	R	Water	3005A	
280-103614-E-1-C MSD	Matrix Spike Duplicate	R	Water	3005A	
280-103730-1	MW-35	R	Water	3005A	
280-103730-2	MW-32	R	Water	3005A	
<b>Prep Batch: 280-396510</b>					
LCS 280-396510/2-A	Lab Control Sample	R	Water	3005A	
MB 280-396510/1-A	Method Blank	R	Water	3005A	
280-103614-E-2-C MS	Matrix Spike	R	Water	3005A	
280-103614-E-2-D MSD	Matrix Spike Duplicate	R	Water	3005A	
280-103730-1	MW-35	R	Water	3005A	
280-103730-2	MW-32	R	Water	3005A	
<b>Analysis Batch:280-396711</b>					
LCS 280-396509/2-A	Lab Control Sample	R	Water	6020B	280-396509
MB 280-396509/1-A	Method Blank	R	Water	6020B	280-396509
280-103614-E-1-B MS	Matrix Spike	R	Water	6020B	280-396509
280-103614-E-1-C MSD	Matrix Spike Duplicate	R	Water	6020B	280-396509
280-103730-1	MW-35	R	Water	6020B	280-396509
280-103730-2	MW-32	R	Water	6020B	280-396509
<b>Prep Batch: 280-396777</b>					
LCS 280-396777/2-A	Lab Control Sample	R	Water	3005A	
MB 280-396777/1-A	Method Blank	R	Water	3005A	
280-103730-1	MW-35	D	Water	3005A	
280-103730-1MS	Matrix Spike	D	Water	3005A	
280-103730-1MSD	Matrix Spike Duplicate	D	Water	3005A	
280-103730-2	MW-32	D	Water	3005A	
<b>Prep Batch: 280-396780</b>					
LCS 280-396780/2-A	Lab Control Sample	R	Water	3005A	
MB 280-396780/1-A	Method Blank	R	Water	3005A	
280-103491-A-7-E MS	Matrix Spike	D	Water	3005A	
280-103491-A-7-F MSD	Matrix Spike Duplicate	D	Water	3005A	
280-103730-1	MW-35	D	Water	3005A	
280-103730-2	MW-32	D	Water	3005A	

## Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Analysis Batch:280-396876</b>					
LCS 280-396510/2-A	Lab Control Sample	R	Water	6010D	280-396510
MB 280-396510/1-A	Method Blank	R	Water	6010D	280-396510
280-103614-E-2-C MS	Matrix Spike	R	Water	6010D	280-396510
280-103614-E-2-D MSD	Matrix Spike Duplicate	R	Water	6010D	280-396510
280-103730-1	MW-35	R	Water	6010D	280-396510
280-103730-2	MW-32	R	Water	6010D	280-396510
<b>Analysis Batch:280-397048</b>					
LCS 280-396777/2-A	Lab Control Sample	R	Water	6020B	280-396777
MB 280-396777/1-A	Method Blank	R	Water	6020B	280-396777
280-103730-1	MW-35	D	Water	6020B	280-396777
280-103730-1MS	Matrix Spike	D	Water	6020B	280-396777
280-103730-1MSD	Matrix Spike Duplicate	D	Water	6020B	280-396777
280-103730-2	MW-32	D	Water	6020B	280-396777
<b>Analysis Batch:280-397056</b>					
LCS 280-396780/2-A	Lab Control Sample	R	Water	6010D	280-396780
MB 280-396780/1-A	Method Blank	R	Water	6010D	280-396780
280-103491-A-7-E MS	Matrix Spike	D	Water	6010D	280-396780
280-103491-A-7-F MSD	Matrix Spike Duplicate	D	Water	6010D	280-396780
280-103730-1	MW-35	D	Water	6010D	280-396780
280-103730-2	MW-32	D	Water	6010D	280-396780
<b>Analysis Batch:280-397251</b>					
LCS 280-396780/2-A	Lab Control Sample	R	Water	6010D	280-396780
MB 280-396780/1-A	Method Blank	R	Water	6010D	280-396780
280-103491-A-7-E MS	Matrix Spike	D	Water	6010D	280-396780
280-103491-A-7-F MSD	Matrix Spike Duplicate	D	Water	6010D	280-396780
280-103730-1	MW-35	D	Water	6010D	280-396780
280-103730-2	MW-32	D	Water	6010D	280-396780

**Report Basis**

D = Dissolved

R = Total Recoverable

**Field Service / Mobile Lab**

**Analysis Batch:280-395824**

280-103730-1	MW-35	T	Water	Field Sampling
280-103730-2	MW-32	T	Water	Field Sampling

**Report Basis**

T = Total

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## Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-395903</b>					
LCS 280-395903/2	Lab Control Sample	T	Water	SM 2540C	
MB 280-395903/1	Method Blank	T	Water	SM 2540C	
280-103730-1	MW-35	T	Water	SM 2540C	
280-103730-2	MW-32	T	Water	SM 2540C	
280-103730-2DU	Duplicate	T	Water	SM 2540C	
<b>Analysis Batch:280-395948</b>					
LCS 280-395948/1	Lab Control Sample	T	Water	SM 2540D	
LCSD 280-395948/2	Lab Control Sample Duplicate	T	Water	SM 2540D	
MB 280-395948/3	Method Blank	T	Water	SM 2540D	
280-103730-1	MW-35	T	Water	SM 2540D	
280-103730-2	MW-32	T	Water	SM 2540D	
280-103733-A-2 DU	Duplicate	T	Water	SM 2540D	
<b>Analysis Batch:280-396376</b>					
LCS 280-396376/56	Lab Control Sample	T	Water	SM 2320B	
MB 280-396376/57	Method Blank	T	Water	SM 2320B	
280-103730-1	MW-35	T	Water	SM 2320B	
280-103730-2	MW-32	T	Water	SM 2320B	
280-103791-A-7 DU	Duplicate	T	Water	SM 2320B	
<b>Analysis Batch:280-397284</b>					
LCS 280-397284/59	Lab Control Sample	T	Water	350.1	
LCSD 280-397284/60	Lab Control Sample Duplicate	T	Water	350.1	
MB 280-397284/61	Method Blank	T	Water	350.1	
280-103724-D-6 MS	Matrix Spike	T	Water	350.1	
280-103724-D-6 MSD	Matrix Spike Duplicate	T	Water	350.1	
280-103730-1	MW-35	T	Water	350.1	
280-103730-2	MW-32	T	Water	350.1	
<b>Analysis Batch:280-398268</b>					
LCS 280-398268/4	Lab Control Sample	T	Water	300.0	
LCSD 280-398268/5	Lab Control Sample Duplicate	T	Water	300.0	
MB 280-398268/6	Method Blank	T	Water	300.0	
280-103730-1	MW-35	T	Water	300.0	
280-103730-2	MW-32	T	Water	300.0	
280-103815-D-1 DU	Duplicate	T	Water	300.0	
280-103815-D-1 MS	Matrix Spike	T	Water	300.0	
280-103815-D-1 MSD	Matrix Spike Duplicate	T	Water	300.0	
<b>Analysis Batch:280-398326</b>					
MB 280-398326/1	Method Blank	T	Water	353.2	
280-103730-1	MW-35	T	Water	353.2	
280-103730-2	MW-32	T	Water	353.2	

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## Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-398382</b>					
LCS 280-398382/3	Lab Control Sample	T	Water	SM 5310B	
MB 280-398382/4	Method Blank	T	Water	SM 5310B	
280-103730-1	MW-35	T	Water	SM 5310B	
280-103730-2	MW-32	T	Water	SM 5310B	
280-103785-B-4 MS	Matrix Spike	T	Water	SM 5310B	
280-103785-B-4 MSD	Matrix Spike Duplicate	T	Water	SM 5310B	

#### Report Basis

T = Total

Client: Waste Management

Job Number: 280-103730-1

**Surrogate Recovery Report**

**8260B SIM Volatile Organic Compounds (GC/MS)**

**Client Matrix: Water**

Surrogate

Acceptance Limits

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Client: Waste Management

Job Number: 280-103730-1

**Surrogate Recovery Report**

**8260B SIM Volatile Organic Compounds (GC/MS)**

**Client Matrix: Water**

Lab Sample ID	Client Sample ID	DBFM %Rec
280-103730-1	MW-35	83
280-103730-2	MW-32	78
MB 280-396651/8		87
LCS 280-396651/6		82
280-103543-J-1 MS		75X
280-103543-J-1 MSD		81

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Surrogate	Acceptance Limits
DBFM = Dibromofluoromethane (Surr)	77-120

Client: Waste Management

Job Number: 280-103730-1

**Surrogate Recovery Report**

**8260B SIM Volatile Organic Compounds (GC/MS)**

**Client Matrix: Water**

Lab Sample ID	Client Sample ID	DCA %Rec
280-103730-3	TRIP BLANK	0X
LCS 280-396684/4		75
LCS 280-396684/6		72

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	70-127

Client: Waste Management

Job Number: 280-103730-1

**Surrogate Recovery Report**

**8260C Volatile Organic Compounds by GC/MS**

**Client Matrix: Water**

Lab Sample ID	Client Sample ID	DCA %Rec	BFB %Rec	TOL %Rec
280-103730-1	MW-35	100	79	100
280-103730-2	MW-32	99	87	98
280-103730-3	TRIP BLANK	99	91	102
MB 480-388459/6		107	91	99
LCS 480-388459/4		102	79	98
480-127657-D-1 MS		97	89	98
480-127657-D-1 MSD		98	91	100

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	77-120
BFB = 4-Bromofluorobenzene (Surr)	73-120
TOL = Toluene-d8 (Surr)	80-120

Client: Waste Management

Job Number: 280-103730-1

**Surrogate Recovery Report**

**8260C SIM Volatile Organic Compounds (GC/MS)**

**Client Matrix: Water**

Lab Sample ID	Client Sample ID	DBFM %Rec	TBA %Rec
280-103730-1	MW-35	111	114
280-103730-2	MW-32	109	116
280-103730-3	TRIP BLANK	112	107
MB 480-389245/9		108	103
LCS 480-389245/6		107	132
LCSD 480-389245/7		104	119

Surrogate	Acceptance Limits
DBFM = Dibromofluoromethane (Surr)	50-150
TBA = TBA-d9 (Surr)	50-150

## Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

**Method Blank - Batch: 280-396651**

**Method: 8260B SIM  
Preparation: 5030B**

Lab Sample ID: MB 280-396651/8	Analysis Batch: 280-396651	Instrument ID: VMS_E
Client Matrix: Water	Prep Batch: N/A	Lab File ID: E5781.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 11/27/2017 1839	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 11/27/2017 1839		
Leach Date: N/A		

Analyte	Result	Qual	MDL	RL
Vinyl chloride	ND		0.018	0.020
Surrogate	% Rec		Acceptance Limits	
Dibromofluoromethane (Surr)	87		77 - 120	

**Lab Control Sample - Batch: 280-396651**

**Method: 8260B SIM  
Preparation: 5030B**

Lab Sample ID: LCS 280-396651/6	Analysis Batch: 280-396651	Instrument ID: VMS_E
Client Matrix: Water	Prep Batch: N/A	Lab File ID: E5780.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 11/27/2017 1821	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 11/27/2017 1821		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Vinyl chloride	2.00	2.31	116	40 - 144	
Surrogate		% Rec		Acceptance Limits	
Dibromofluoromethane (Surr)		82		77 - 120	

**Quality Control Results**

Client: Waste Management

Job Number: 280-103730-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396651**

**Method: 8260B SIM  
Preparation: 5030B**

MS Lab Sample ID: 280-103543-J-1 MS	Analysis Batch: 280-396651	Instrument ID: VMS_E
Client Matrix: Water	Prep Batch: N/A	Lab File ID: E5790.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 11/27/2017 2121		Final Weight/Volume: 20 mL
Prep Date: 11/27/2017 2121		20 mL
Leach Date: N/A		

MSD Lab Sample ID: 280-103543-J-1 MSD	Analysis Batch: 280-396651	Instrument ID: VMS_E
Client Matrix: Water	Prep Batch: N/A	Lab File ID: E5791.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 11/27/2017 2139		Final Weight/Volume: 20 mL
Prep Date: 11/27/2017 2139		20 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Vinyl chloride	96	102	40 - 144	6	24		
Surrogate		MS % Rec	MSD % Rec			Acceptance Limits	
Dibromofluoromethane (Surr)		75	X	81		77 - 120	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396651**

**Method: 8260B SIM  
Preparation: 5030B**

MS Lab Sample ID: 280-103543-J-1 MS	Units: ug/L
Client Matrix: Water	
Dilution: 1.0	
Analysis Date: 11/27/2017 2121	
Prep Date: 11/27/2017 2121	
Leach Date: N/A	

MSD Lab Sample ID: 280-103543-J-1 MSD
Client Matrix: Water
Dilution: 1.0
Analysis Date: 11/27/2017 2139
Prep Date: 11/27/2017 2139
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Vinyl chloride	ND	2.00	2.00	1.93	2.04



**Quality Control Results**

Client: Waste Management

Job Number: 280-103730-1

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	75	70 - 127

**Lab Control Sample - Batch: 280-396684**

**Method: 8260B SIM**

**Preparation: 5030B**

Lab Sample ID: LCS 280-396684/6	Analysis Batch: 280-396684	Instrument ID: VMS_E
Client Matrix: Water	Prep Batch: N/A	Lab File ID: E5840.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 11/28/2017 1603	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 11/28/2017 1603		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Vinyl chloride	2.00	0.910	46	40 - 144	

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	72	70 - 127

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396684**

**Method: 8260B SIM**

**Preparation: 5030B**

MS Lab Sample ID: 280-103795-A-7 MS	Analysis Batch: 280-396684	Instrument ID: VMS_E
Client Matrix: Water	Prep Batch: N/A	Lab File ID: E5824.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 11/28/2017 1115		Final Weight/Volume: 20 mL
Prep Date: 11/28/2017 1115		20 mL
Leach Date: N/A		

MSD Lab Sample ID: 280-103795-A-7 MSD	Analysis Batch: 280-396684	Instrument ID: VMS_E
Client Matrix: Water	Prep Batch: N/A	Lab File ID: E5825.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 11/28/2017 1133		Final Weight/Volume: 20 mL
Prep Date: 11/28/2017 1133		20 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Vinyl chloride							

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)			

**Quality Control Results**

Client: Waste Management

Job Number: 280-103730-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396684**

**Method: 8260B SIM  
Preparation: 5030B**

MS Lab Sample ID: 280-103795-A-7 MS      Units: ug/L  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/28/2017 1115  
Prep Date: 11/28/2017 1115  
Leach Date: N/A

MSD Lab Sample ID: 280-103795-A-7 MSD  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/28/2017 1133  
Prep Date: 11/28/2017 1133  
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Vinyl chloride	ND	2.00	2.00	0.902	1.12

## Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

**Method Blank - Batch: 480-388459**

**Method: 8260C**  
**Preparation: 5030C**

Lab Sample ID: MB 480-388459/6  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/20/2017 2143  
Prep Date: 11/20/2017 2143  
Leach Date: N/A

Analysis Batch: 480-388459  
Prep Batch: N/A  
Leach Batch: N/A  
Units: ug/L

Instrument ID: HP5975T  
Lab File ID: T2035.D  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.35	1.0
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,1-Dichloropropene	ND		0.72	1.0
1,2,3-Trichlorobenzene	ND		0.41	1.0
1,2,3-Trichloropropane	ND		0.89	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2,4-Trimethylbenzene	ND		0.75	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane (EDB)	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloroethene, Total	ND		0.81	2.0
1,2-Dichloropropane	ND		0.72	1.0
1,3,5-Trichlorobenzene	ND		0.23	1.0
1,3,5-Trimethylbenzene	ND		0.77	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,3-Dichloropropane	ND		0.75	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
1,4-Dioxane	20.9	J	9.3	40
2,2-Dichloropropane	ND		0.40	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chloroethyl vinyl ether	ND		0.96	5.0
2-Hexanone	ND		1.2	5.0
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Acetonitrile	ND		4.9	15
Acrolein	ND		0.91	20
Acrylonitrile	ND		0.83	5.0
Benzene	ND		0.41	1.0
Bromobenzene	ND		0.80	1.0
Bromochloromethane	ND		0.87	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Butyl alcohol, n-	ND		8.9	40
Butyl alcohol, tert-	ND		3.3	10
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Chlorodifluoromethane	ND		0.26	1.0

# Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

**Method Blank - Batch: 480-388459**

**Method: 8260C  
Preparation: 5030C**

Lab Sample ID: MB 480-388459/6  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/20/2017 2143  
 Prep Date: 11/20/2017 2143  
 Leach Date: N/A

Analysis Batch: 480-388459  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: ug/L

Instrument ID: HP5975T  
 Lab File ID: T2035.D  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dibromochloromethane	ND		0.32	1.0
Dibromomethane	ND		0.41	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Dichlorofluoromethane	ND		0.34	1.0
Ethyl acetate	ND		0.66	1.0
Ethyl ether	ND		0.72	1.0
Ethyl tert-butyl ether	ND		0.29	1.0
Ethylbenzene	ND		0.74	1.0
Hexachlorobutadiene	ND		0.28	1.0
Hexane	ND		0.40	10
Iodomethane	ND		0.30	1.0
Isobutanol	ND		4.8	25
Isopropyl ether	ND		0.59	1.0
Isopropylbenzene	ND		0.79	1.0
Methacrylonitrile	ND		0.69	5.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
m-Xylene & p-Xylene	ND		0.66	2.0
Naphthalene	ND		0.43	1.0
n-Butylbenzene	ND		0.64	1.0
N-Propylbenzene	ND		0.69	1.0
o-Chlorotoluene	ND		0.86	1.0
o-Xylene	ND		0.76	1.0
p-Chlorotoluene	ND		0.84	1.0
p-Cymene	ND		0.31	1.0
sec-Butylbenzene	ND		0.75	1.0
Styrene	ND		0.73	1.0
Tert-amyl methyl ether	ND		0.27	1.0
tert-Butylbenzene	ND		0.81	1.0
Tetrachloroethene	ND		0.36	1.0
Tetrahydrofuran	ND		1.3	5.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
trans-1,4-Dichloro-2-butene	ND		0.22	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0

# Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

## Method Blank - Batch: 480-388459

Method: 8260C  
Preparation: 5030C

Lab Sample ID:	MB 480-388459/6	Analysis Batch:	480-388459	Instrument ID:	HP5975T
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	T2035.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	11/20/2017 2143	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	11/20/2017 2143				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Vinyl acetate	ND		0.85	5.0
Vinyl chloride	ND		0.90	1.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	107	77 - 120
4-Bromofluorobenzene (Surr)	91	73 - 120
Toluene-d8 (Surr)	99	80 - 120

## Method Blank TICs- Batch: 480-388459

Cas Number	Analyte	RT	Est. Result (ug)	Qual
67-72-1	Hexachloroethane TIC	0.00	ND	

# Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

**Lab Control Sample - Batch: 480-388459**

**Method: 8260C  
Preparation: 5030C**

Lab Sample ID:	LCS 480-388459/4	Analysis Batch:	480-388459	Instrument ID:	HP5975T
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	T2033.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	11/20/2017 2055	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	11/20/2017 2055				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1,1,2-Tetrachloroethane	25.0	25.0	100	80 - 120	
1,1,1-Trichloroethane	25.0	26.9	107	73 - 126	
1,1,2,2-Tetrachloroethane	25.0	25.9	104	76 - 120	
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	31.3	125	61 - 148	
1,1,2-Trichloroethane	25.0	28.9	116	76 - 122	
1,1-Dichloroethane	25.0	29.2	117	77 - 120	
1,1-Dichloroethene	25.0	30.3	121	66 - 127	
1,1-Dichloropropene	25.0	30.9	123	72 - 122	*
1,2,3-Trichlorobenzene	25.0	27.7	111	75 - 123	
1,2,3-Trichloropropane	25.0	24.3	97	68 - 122	
1,2,4-Trichlorobenzene	25.0	28.0	112	79 - 122	
1,2,4-Trimethylbenzene	25.0	27.2	109	76 - 121	
1,2-Dibromo-3-Chloropropane	25.0	26.9	108	56 - 134	
1,2-Dibromoethane (EDB)	25.0	26.9	108	77 - 120	
1,2-Dichlorobenzene	25.0	26.7	107	80 - 124	
1,2-Dichloroethane	25.0	28.0	112	75 - 120	
1,2-Dichloropropane	25.0	27.0	108	76 - 120	
1,3,5-Trimethylbenzene	25.0	25.9	103	77 - 121	
1,3-Dichlorobenzene	25.0	27.1	109	77 - 120	
1,3-Dichloropropane	25.0	27.0	108	75 - 120	
1,4-Dichlorobenzene	25.0	27.3	109	80 - 120	
1,4-Dioxane	500	497	99	50 - 150	
2,2-Dichloropropane	25.0	28.5	114	63 - 136	
2-Butanone (MEK)	125	157	126	57 - 140	
2-Chloroethyl vinyl ether	25.0	28.3	113	70 - 129	
2-Hexanone	125	155	124	65 - 127	
4-Methyl-2-pentanone (MIBK)	125	143	115	71 - 125	
Acetone	125	205	164	56 - 142	*
Acrolein	125	117	94	52 - 143	
Acrylonitrile	250	277	111	63 - 125	
Benzene	25.0	28.3	113	71 - 124	
Bromobenzene	25.0	25.2	101	78 - 120	
Bromochloromethane	25.0	26.8	107	72 - 130	
Bromodichloromethane	25.0	26.3	105	80 - 122	
Bromoform	25.0	19.5	78	61 - 132	
Bromomethane	25.0	24.1	96	55 - 144	
Butyl alcohol, tert-	250	269	108	75 - 125	
Carbon disulfide	25.0	27.2	109	59 - 134	
Carbon tetrachloride	25.0	27.8	111	72 - 134	
Chlorobenzene	25.0	25.9	103	80 - 120	
Chloroethane	25.0	29.1	116	69 - 136	
Chloroform	25.0	26.3	105	73 - 127	
Chloromethane	25.0	36.3	145	68 - 124	*
cis-1,2-Dichloroethene	25.0	26.8	107	74 - 124	
cis-1,3-Dichloropropene	25.0	28.9	115	74 - 124	
Cyclohexane	25.0	29.8	119	59 - 135	

# Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

**Lab Control Sample - Batch: 480-388459**

**Method: 8260C  
Preparation: 5030C**

Lab Sample ID:	LCS 480-388459/4	Analysis Batch:	480-388459	Instrument ID:	HP5975T
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	T2033.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	11/20/2017 2055	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	11/20/2017 2055				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Dibromochloromethane	25.0	26.2	105	75 - 125	
Dibromomethane	25.0	27.1	108	76 - 127	
Dichlorodifluoromethane	25.0	29.5	118	59 - 135	
Dichlorofluoromethane	25.0	29.7	119	76 - 127	
Ethyl ether	25.0	27.9	112	76 - 123	
Ethylbenzene	25.0	26.6	106	77 - 123	
Hexachlorobutadiene	25.0	29.8	119	68 - 131	
Hexane	25.0	29.9	120	54 - 146	
Iodomethane	25.0	27.7	111	78 - 123	
Isobutanol	625	721	115	51 - 150	
Isopropylbenzene	25.0	25.6	102	77 - 122	
Methyl acetate	50.0	55.4	111	74 - 133	
Methyl tert-butyl ether	25.0	27.1	109	77 - 120	
Methylcyclohexane	25.0	30.1	121	68 - 134	
Methylene Chloride	25.0	24.4	97	75 - 124	
m-Xylene & p-Xylene	25.0	26.5	106	76 - 122	
Naphthalene	25.0	28.3	113	66 - 125	
n-Butylbenzene	25.0	28.1	112	71 - 128	
N-Propylbenzene	25.0	26.5	106	75 - 127	
o-Chlorotoluene	25.0	26.2	105	76 - 121	
o-Xylene	25.0	24.3	97	76 - 122	
p-Chlorotoluene	25.0	26.3	105	77 - 121	
p-Cymene	25.0	28.5	114	73 - 120	
sec-Butylbenzene	25.0	30.6	123	74 - 127	
Styrene	25.0	24.1	96	80 - 120	
tert-Butylbenzene	25.0	28.6	114	75 - 123	
Tetrachloroethene	25.0	28.3	113	74 - 122	
Tetrahydrofuran	50.0	51.4	103	62 - 132	
Toluene	25.0	26.8	107	80 - 122	
trans-1,2-Dichloroethene	25.0	29.3	117	73 - 127	
trans-1,3-Dichloropropene	25.0	26.7	107	80 - 120	
trans-1,4-Dichloro-2-butene	25.0	24.4	97	41 - 131	
Trichloroethene	25.0	27.5	110	74 - 123	
Trichlorofluoromethane	25.0	28.6	115	62 - 150	
Vinyl acetate	50.0	62.6	125	50 - 144	
Vinyl chloride	25.0	35.5	142	65 - 133	*
Surrogate		% Rec		Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)		102		77 - 120	
4-Bromofluorobenzene (Surr)		79		73 - 120	
Toluene-d8 (Surr)		98		80 - 120	

## Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 480-388459**

**Method: 8260C  
Preparation: 5030C**

MS Lab Sample ID: 480-127657-D-1 MS	Analysis Batch: 480-388459	Instrument ID: HP5975T
Client Matrix: Water	Prep Batch: N/A	Lab File ID: T2054.D
Dilution: 40	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/21/2017 0526		Final Weight/Volume: 5 mL
Prep Date: 11/21/2017 0526		5 mL
Leach Date: N/A		

MSD Lab Sample ID: 480-127657-D-1 MSD	Analysis Batch: 480-388459	Instrument ID: HP5975T
Client Matrix: Water	Prep Batch: N/A	Lab File ID: T2055.D
Dilution: 40	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/21/2017 0549		Final Weight/Volume: 5 mL
Prep Date: 11/21/2017 0549		5 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
1,1,1,2-Tetrachloroethane	105	100	80 - 120	4	20		
1,1,1-Trichloroethane	108	108	73 - 126	0	15		
1,1,2,2-Tetrachloroethane	106	110	76 - 120	4	15		
1,1,2-Trichloroethane	117	114	76 - 122	2	15		
1,1-Dichloroethane	118	115	77 - 120	2	20		
1,1-Dichloroethene	117	117	66 - 127	0	16		
1,1-Dichloropropene	123	121	72 - 122	2	20	F1	
1,2,3-Trichlorobenzene	118	105	75 - 123	12	20		
1,2,3-Trichloropropane	107	101	68 - 122	5	14		
1,2,4-Trichlorobenzene	114	112	79 - 122	2	20		
1,2,4-Trimethylbenzene	115	106	76 - 121	8	20		
1,2-Dichlorobenzene	111	98	80 - 124	12	20		
1,2-Dichloroethane	107	108	75 - 120	1	20		
1,2-Dichloropropane	111	110	76 - 120	1	20		
1,3,5-Trimethylbenzene	111	108	77 - 121	3	20		
1,3-Dichlorobenzene	118	109	77 - 120	7	20		
1,4-Dichlorobenzene	116	108	78 - 124	7	20		
2,2-Dichloropropane	96	94	63 - 136	3	20		
2-Butanone (MEK)	113	114	57 - 140	1	20		
2-Hexanone	119	116	65 - 127	2	15		
4-Methyl-2-pentanone (MIBK)	124	119	71 - 125	5	35		
Acetone	115	120	56 - 142	4	15		
Benzene	112	111	71 - 124	1	13		
Bromobenzene	110	105	78 - 120	4	15		
Bromochloromethane	101	97	72 - 130	4	15		
Bromodichloromethane	105	111	80 - 122	5	15		
Bromoform	90	89	61 - 132	2	15		
Bromomethane	125	127	55 - 144	1	15		
Butyl alcohol, tert-	92	104	75 - 125	10	15		
Carbon disulfide	110	107	59 - 134	3	15		
Carbon tetrachloride	108	104	72 - 134	4	15		
Chlorobenzene	111	105	80 - 120	6	25		
Chloroethane	133	135	69 - 136	1	15		



## Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 480-388459**

**Method: 8260C  
Preparation: 5030C**

MS Lab Sample ID: 480-127657-D-1 MS	Analysis Batch: 480-388459	Instrument ID: HP5975T
Client Matrix: Water	Prep Batch: N/A	Lab File ID: T2054.D
Dilution: 40	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/21/2017 0526		Final Weight/Volume: 5 mL
Prep Date: 11/21/2017 0526		5 mL
Leach Date: N/A		

MSD Lab Sample ID: 480-127657-D-1 MSD	Analysis Batch: 480-388459	Instrument ID: HP5975T
Client Matrix: Water	Prep Batch: N/A	Lab File ID: T2055.D
Dilution: 40	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/21/2017 0549		Final Weight/Volume: 5 mL
Prep Date: 11/21/2017 0549		5 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Chloroform	106	111	73 - 127	5	20		
Chloromethane	125	128	68 - 124	2	15	F1	F1
cis-1,2-Dichloroethene	109	106	74 - 124	3	15		
cis-1,3-Dichloropropene	107	105	74 - 124	2	15		
Dibromochloromethane	108	107	75 - 125	1	15		
Dibromomethane	109	113	76 - 127	4	15		
Dichlorodifluoromethane	104	112	59 - 135	7	20		
Ethyl ether	105	99	76 - 123	6	20		
Ethylbenzene	114	109	77 - 123	5	15		
Hexachlorobutadiene	119	108	68 - 131	10	20		
Isopropylbenzene	118	112	77 - 122	6	20		
Methyl tert-butyl ether	107	109	77 - 120	2	37		
Methylene Chloride	98	100	75 - 124	2	15		
m-Xylene & p-Xylene	110	105	76 - 122	4	16		
Naphthalene	114	111	66 - 125	3	20		
n-Butylbenzene	122	115	71 - 128	6	15		
N-Propylbenzene	119	111	75 - 127	7	15		
o-Chlorotoluene	113	105	76 - 121	7	20		
o-Xylene	111	105	76 - 122	5	16		
p-Chlorotoluene	110	108	77 - 121	2	15		
p-Cymene	121	115	73 - 120	5	20	F1	
sec-Butylbenzene	126	119	74 - 127	6	15		
Styrene	111	110	80 - 120	1	20		
tert-Butylbenzene	119	117	75 - 123	2	15		
Tetrachloroethene	117	107	74 - 122	9	20		
Tetrahydrofuran	101	101	62 - 132	0	25		
Toluene	118	109	80 - 122	7	15		
trans-1,2-Dichloroethene	116	121	73 - 127	4	20		
trans-1,3-Dichloropropene	111	109	80 - 120	2	15		
Trichloroethene	109	108	74 - 123	1	16		
Trichlorofluoromethane	117	108	62 - 150	8	20		
Vinyl chloride	99	125	65 - 133	24	15		F2
Surrogate		MS % Rec	MSD % Rec			Acceptance Limits	

## Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	97	98	77 - 120
4-Bromofluorobenzene (Surr)	89	91	73 - 120
Toluene-d8 (Surr)	98	100	80 - 120

# Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 480-388459**

**Method: 8260C  
Preparation: 5030C**

MS Lab Sample ID: 480-127657-D-1 MS      Units: ug/L  
 Client Matrix: Water  
 Dilution: 40  
 Analysis Date: 11/21/2017 0526  
 Prep Date: 11/21/2017 0526  
 Leach Date: N/A

MSD Lab Sample ID: 480-127657-D-1 MSD  
 Client Matrix: Water  
 Dilution: 40  
 Analysis Date: 11/21/2017 0549  
 Prep Date: 11/21/2017 0549  
 Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
1,1,1,2-Tetrachloroethane	ND	1000	1000	1050	1000
1,1,1-Trichloroethane	ND	1000	1000	1080	1080
1,1,2,2-Tetrachloroethane	ND	1000	1000	1060	1100
1,1,2-Trichloroethane	ND	1000	1000	1170	1140
1,1-Dichloroethane	ND	1000	1000	1180	1150
1,1-Dichloroethene	ND	1000	1000	1170	1170
1,1-Dichloropropene	ND	1000	1000	1230	F1 1210
1,2,3-Trichlorobenzene	ND	1000	1000	1180	1050
1,2,3-Trichloropropane	ND	1000	1000	1070	1010
1,2,4-Trichlorobenzene	ND	1000	1000	1140	1120
1,2,4-Trimethylbenzene	ND	1000	1000	1150	1060
1,2-Dichlorobenzene	ND	1000	1000	1110	979
1,2-Dichloroethane	ND	1000	1000	1070	1080
1,2-Dichloropropane	ND	1000	1000	1110	1100
1,3,5-Trimethylbenzene	ND	1000	1000	1110	1080
1,3-Dichlorobenzene	ND	1000	1000	1180	1090
1,4-Dichlorobenzene	ND	1000	1000	1160	1080
2,2-Dichloropropane	ND	1000	1000	961	937
2-Butanone (MEK)	ND	5000	5000	5650	5720
2-Hexanone	ND	5000	5000	5950	5810
4-Methyl-2-pentanone (MIBK)	ND	5000	5000	6210	5940
Acetone	ND	5000	5000	5760	6020
Benzene	ND	1000	1000	1120	1110
Bromobenzene	ND	1000	1000	1100	1050
Bromochloromethane	ND	1000	1000	1010	974
Bromodichloromethane	ND	1000	1000	1050	1110
Bromoform	ND	1000	1000	902	888
Bromomethane	ND	1000	1000	1250	1270
Butyl alcohol, tert-	2000	10000	10000	11200	12400
Carbon disulfide	ND	1000	1000	1100	1070
Carbon tetrachloride	ND	1000	1000	1080	1040
Chlorobenzene	ND	1000	1000	1110	1050
Chloroethane	ND	1000	1000	1330	1350
Chloroform	ND	1000	1000	1060	1110
Chloromethane	ND	1000	1000	1250	F1 1280
cis-1,2-Dichloroethene	ND	1000	1000	1090	1060
cis-1,3-Dichloropropene	ND	1000	1000	1070	1050
Dibromochloromethane	ND	1000	1000	1080	1070
Dibromomethane	ND	1000	1000	1090	1130
Dichlorodifluoromethane	ND	1000	1000	1040	1120
Ethyl ether	ND	1000	1000	1050	991
Ethylbenzene	ND	1000	1000	1140	1090
Hexachlorobutadiene	ND	1000	1000	1190	1080

## Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 480-388459**

**Method: 8260C  
Preparation: 5030C**

MS Lab Sample ID: 480-127657-D-1 MS      Units: ug/L  
 Client Matrix: Water  
 Dilution: 40  
 Analysis Date: 11/21/2017 0526  
 Prep Date: 11/21/2017 0526  
 Leach Date: N/A

MSD Lab Sample ID: 480-127657-D-1 MSD  
 Client Matrix: Water  
 Dilution: 40  
 Analysis Date: 11/21/2017 0549  
 Prep Date: 11/21/2017 0549  
 Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Isopropylbenzene	ND	1000	1000	1180	1120
Methyl tert-butyl ether	ND	1000	1000	1070	1090
Methylene Chloride	30 J	1000	1000	1010	1030
m-Xylene & p-Xylene	ND	1000	1000	1100	1050
Naphthalene	ND	1000	1000	1140	1110
n-Butylbenzene	ND	1000	1000	1220	1150
N-Propylbenzene	ND	1000	1000	1190	1110
o-Chlorotoluene	ND	1000	1000	1130	1050
o-Xylene	ND	1000	1000	1110	1050
p-Chlorotoluene	ND	1000	1000	1100	1080
p-Cymene	ND	1000	1000	1210 F1	1150
sec-Butylbenzene	ND	1000	1000	1260	1190
Styrene	ND	1000	1000	1110	1100
tert-Butylbenzene	ND	1000	1000	1190	1170
Tetrachloroethene	ND	1000	1000	1170	1070
Tetrahydrofuran	530	2000	2000	2540	2550
Toluene	ND	1000	1000	1180	1090
trans-1,2-Dichloroethene	ND	1000	1000	1160	1210
trans-1,3-Dichloropropene	ND	1000	1000	1110	1090
Trichloroethene	ND	1000	1000	1090	1080
Trichlorofluoromethane	ND	1000	1000	1170	1080
Vinyl chloride	ND	1000	1000	986	1250 F2

# Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

**Method Blank - Batch: 480-389245**

**Method: 8260C SIM  
Preparation: 5030C**

Lab Sample ID: MB 480-389245/9	Analysis Batch: 480-389245	Instrument ID: HP5973J
Client Matrix: Water	Prep Batch: N/A	Lab File ID: J4996.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 25 mL
Analysis Date: 11/27/2017 1612	Units: ug/L	Final Weight/Volume: 25 mL
Prep Date: 11/27/2017 1612		
Leach Date: N/A		

Analyte	Result	Qual	MDL	RL
Vinyl chloride	ND		0.0040	0.020

Surrogate	% Rec	Acceptance Limits
Dibromofluoromethane (Surr)	108	50 - 150
TBA-d9 (Surr)	103	50 - 150

**Lab Control Sample/**

**Method: 8260C SIM  
Preparation: 5030C**

**Lab Control Sample Duplicate Recovery Report - Batch: 480-389245**

LCS Lab Sample ID: LCS 480-389245/6	Analysis Batch: 480-389245	Instrument ID: HP5973J
Client Matrix: Water	Prep Batch: N/A	Lab File ID: J4993.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 25 mL
Analysis Date: 11/27/2017 1459	Units: ug/L	Final Weight/Volume: 25 mL
Prep Date: 11/27/2017 1459		25 mL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 480-389245/7	Analysis Batch: 480-389245	Instrument ID: HP5973J
Client Matrix: Water	Prep Batch: N/A	Lab File ID: J4994.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 25 mL
Analysis Date: 11/27/2017 1523	Units: ug/L	Final Weight/Volume: 25 mL
Prep Date: 11/27/2017 1523		25 mL
Leach Date: N/A		

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Vinyl chloride	121	107	50 - 150	13	20		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
Dibromofluoromethane (Surr)	107		104		50 - 150		
TBA-d9 (Surr)	132		119		50 - 150		

**Quality Control Results**

Client: Waste Management

Job Number: 280-103730-1

**Laboratory Control/  
Laboratory Duplicate Data Report - Batch: 480-389245**

**Method: 8260C SIM  
Preparation: 5030C**

LCS Lab Sample ID: LCS 480-389245/6      Units: ug/L  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/27/2017 1459  
Prep Date: 11/27/2017 1459  
Leach Date: N/A

LCSD Lab Sample ID: LCSD 480-389245/7  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/27/2017 1523  
Prep Date: 11/27/2017 1523  
Leach Date: N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Vinyl chloride	0.200	0.200	0.242	0.213

# Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

**Method Blank - Batch: 280-396510**

Lab Sample ID: MB 280-396510/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/28/2017 1941  
 Prep Date: 11/28/2017 0806  
 Leach Date: N/A

Analysis Batch: 280-396876  
 Prep Batch: 280-396510  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6010D  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_051  
 Lab File ID: 51A112817A.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Cobalt, Total	ND		0.0012	0.0030
Iron, Total	ND		0.022	0.060

**Lab Control Sample - Batch: 280-396510**

Lab Sample ID: LCS 280-396510/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/28/2017 1944  
 Prep Date: 11/28/2017 0806  
 Leach Date: N/A

Analysis Batch: 280-396876  
 Prep Batch: 280-396510  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6010D  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_051  
 Lab File ID: 51A112817A.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Cobalt, Total	0.500	0.537	107	89 - 111	
Iron, Total	1.00	1.12	112	89 - 115	

**Matrix Spike/  
 Matrix Spike Duplicate Recovery Report - Batch: 280-396510**

MS Lab Sample ID: 280-103614-E-2-C MS  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/28/2017 1956  
 Prep Date: 11/28/2017 0806  
 Leach Date: N/A

Analysis Batch: 280-396876  
 Prep Batch: 280-396510  
 Leach Batch: N/A

**Method: 6010D  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_051  
 Lab File ID: 51A112817A.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-103614-E-2-D MSD  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/28/2017 1959  
 Prep Date: 11/28/2017 0806  
 Leach Date: N/A

Analysis Batch: 280-396876  
 Prep Batch: 280-396510  
 Leach Batch: N/A

Instrument ID: MT\_051  
 Lab File ID: 51A112817A.csv  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Cobalt, Total	106	103	82 - 119	3	20		
Iron, Total	113	129	52 - 155	4	20		

**Quality Control Results**

Client: Waste Management

Job Number: 280-103730-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396510**

**Method: 6010D  
Preparation: 3005A  
Total Recoverable**

MS Lab Sample ID: 280-103614-E-2-C MS      Units: mg/L  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/28/2017 1956  
Prep Date: 11/28/2017 0806  
Leach Date: N/A

MSD Lab Sample ID: 280-103614-E-2-D MSD  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/28/2017 1959  
Prep Date: 11/28/2017 0806  
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Cobalt, Total	ND	0.500	0.500	0.528	0.514
Iron, Total	2.5	1.00	1.00	3.66	3.82



# Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

## Method Blank - Batch: 280-396780

Lab Sample ID: MB 280-396780/1-A  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/29/2017 2146  
Prep Date: 11/29/2017 1423  
Leach Date: N/A

Analysis Batch: 280-397056  
Prep Batch: 280-396780  
Leach Batch: N/A  
Units: mg/L

## Method: 6010D Preparation: 3005A Total Recoverable

Instrument ID: MT\_051  
Lab File ID: 51A112917C.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Iron, Dissolved	ND		0.022	0.060
Potassium, Dissolved	ND		0.24	1.0

## Method Blank - Batch: 280-396780

Lab Sample ID: MB 280-396780/1-A  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/30/2017 1521  
Prep Date: 11/29/2017 1423  
Leach Date: N/A

Analysis Batch: 280-397251  
Prep Batch: 280-396780  
Leach Batch: N/A  
Units: mg/L

## Method: 6010D Preparation: 3005A Total Recoverable

Instrument ID: MT\_051  
Lab File ID: 51A113017A.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Calcium, Dissolved	ND		0.035	0.040
Magnesium, Dissolved	ND		0.011	0.050
Sodium, Dissolved	ND		0.12	1.0

## Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

**Lab Control Sample - Batch: 280-396780**

**Method: 6010D  
Preparation: 3005A  
Total Recoverable**

Lab Sample ID: LCS 280-396780/2-A	Analysis Batch: 280-397056	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-396780	Lab File ID: 51A112917C.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 11/29/2017 2149	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 11/29/2017 1423		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Iron, Dissolved	1.00	1.01	101	89 - 115	
Potassium, Dissolved	50.0	50.7	101	89 - 114	

**Lab Control Sample - Batch: 280-396780**

**Method: 6010D  
Preparation: 3005A  
Total Recoverable**

Lab Sample ID: LCS 280-396780/2-A	Analysis Batch: 280-397251	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-396780	Lab File ID: 51A113017A.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 11/30/2017 1524	Units: mg/L	Final Weight/Volume: 50 mL
Prep Date: 11/29/2017 1423		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Calcium, Dissolved	50.0	49.4	99	90 - 111	
Magnesium, Dissolved	50.0	47.6	95	90 - 113	
Sodium, Dissolved	50.0	51.2	102	90 - 115	

## Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396780**

**Method: 6010D  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-103491-A-7-E MS	Analysis Batch: 280-397056	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-396780	Lab File ID: 51A112917C.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 11/29/2017 2158		Final Weight/Volume: 50 mL
Prep Date: 11/29/2017 1423		
Leach Date: N/A		

MSD Lab Sample ID: 280-103491-A-7-F MSD	Analysis Batch: 280-397056	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-396780	Lab File ID: 51A112917C.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 11/29/2017 2201		Final Weight/Volume: 50 mL
Prep Date: 11/29/2017 1423		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Iron, Dissolved	93	99	52 - 155	6	20		
Potassium, Dissolved	97	102	76 - 132	5	20		

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396780**

**Method: 6010D  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-103491-A-7-E MS	Analysis Batch: 280-397251	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-396780	Lab File ID: 51A113017A.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 11/30/2017 1533		Final Weight/Volume: 50 mL
Prep Date: 11/29/2017 1423		
Leach Date: N/A		

MSD Lab Sample ID: 280-103491-A-7-F MSD	Analysis Batch: 280-397251	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-396780	Lab File ID: 51A113017A.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 11/30/2017 1536		Final Weight/Volume: 50 mL
Prep Date: 11/29/2017 1423		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Calcium, Dissolved	101	97	48 - 153	4	20		
Magnesium, Dissolved	96	94	62 - 146	2	20		
Sodium, Dissolved	104	100	70 - 203	4	20		

**Quality Control Results**

Client: Waste Management

Job Number: 280-103730-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396780**

**Method: 6010D  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-103491-A-7-E MS      Units: mg/L  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/29/2017 2158  
Prep Date: 11/29/2017 1423  
Leach Date: N/A

MSD Lab Sample ID: 280-103491-A-7-F MSD  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/29/2017 2201  
Prep Date: 11/29/2017 1423  
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Iron, Dissolved	ND	1.00	1.00	0.933	0.991
Potassium, Dissolved	ND	50.0	50.0	48.3	50.8

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396780**

**Method: 6010D  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-103491-A-7-E MS      Units: mg/L  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/30/2017 1533  
Prep Date: 11/29/2017 1423  
Leach Date: N/A

MSD Lab Sample ID: 280-103491-A-7-F MSD  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/30/2017 1536  
Prep Date: 11/29/2017 1423  
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Calcium, Dissolved	ND	50.0	50.0	50.7	48.5
Magnesium, Dissolved	ND	50.0	50.0	48.2	47.2
Sodium, Dissolved	ND	50.0	50.0	51.9	49.8

## Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

**Method Blank - Batch: 280-396509**

Lab Sample ID: MB 280-396509/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/27/2017 2333  
 Prep Date: 11/27/2017 1610  
 Leach Date: N/A

Analysis Batch: 280-396711  
 Prep Batch: 280-396509  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_078  
 Lab File ID: 183\_BLK\_112717.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Antimony, Total	ND		0.00040	0.0010
Barium, Total	ND		0.00029	0.0010
Beryllium, Total	ND		0.000080	0.0010
Cadmium, Total	ND		0.00027	0.00020
Chromium, Total	ND		0.00050	0.0030
Copper, Total	ND		0.00056	0.0020
Lead, Total	ND		0.00018	0.0010
Manganese, Total	ND		0.00031	0.0010
Nickel, Total	ND		0.00030	0.0040
Silver, Total	ND		0.000033	0.0020
Thallium, Total	ND		0.000050	0.0010
Vanadium, Total	ND		0.00050	0.0020
Zinc, Total	ND		0.0020	0.0050

**Lab Control Sample - Batch: 280-396509**

Lab Sample ID: LCS 280-396509/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/27/2017 2336  
 Prep Date: 11/27/2017 1610  
 Leach Date: N/A

Analysis Batch: 280-396711  
 Prep Batch: 280-396509  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_078  
 Lab File ID: 184\_LCS\_112717.D  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony, Total	0.0400	0.0376	94	79 - 111	
Barium, Total	0.0400	0.0406	102	92 - 117	
Beryllium, Total	0.0400	0.0422	105	87 - 118	
Cadmium, Total	0.0400	0.0390	97	91 - 114	
Chromium, Total	0.0400	0.0414	103	91 - 114	
Copper, Total	0.0400	0.0433	108	89 - 116	
Lead, Total	0.0400	0.0402	101	95 - 116	
Manganese, Total	0.0400	0.0418	104	89 - 119	
Nickel, Total	0.0400	0.0415	104	92 - 116	
Silver, Total	0.0400	0.0385	96	93 - 118	
Thallium, Total	0.0400	0.0385	96	94 - 115	
Vanadium, Total	0.0400	0.0399	100	91 - 114	
Zinc, Total	0.0400	0.0418	104	86 - 123	

## Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396509**

**Method: 6020B  
Preparation: 3005A  
Total Recoverable**

MS Lab Sample ID: 280-103614-E-1-B MS	Analysis Batch: 280-396711	Instrument ID: MT_078
Client Matrix: Water	Prep Batch: 280-396509	Lab File ID: 187SMPL_112717.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 11/27/2017 2346		Final Weight/Volume: 50 mL
Prep Date: 11/27/2017 1610		
Leach Date: N/A		

MSD Lab Sample ID: 280-103614-E-1-C MSD	Analysis Batch: 280-396711	Instrument ID: MT_078
Client Matrix: Water	Prep Batch: 280-396509	Lab File ID: 188SMPL_112717.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 11/27/2017 2350		Final Weight/Volume: 50 mL
Prep Date: 11/27/2017 1610		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Antimony, Total	94	97	85 - 115	4	20		
Barium, Total	97	100	85 - 118	2	20		
Beryllium, Total	106	106	80 - 125	0	20		
Cadmium, Total	98	103	85 - 115	5	20		
Chromium, Total	99	99	84 - 121	0	20		
Copper, Total	101	104	85 - 119	3	20		
Lead, Total	98	101	85 - 118	3	20		
Manganese, Total	97	99	85 - 117	2	20		
Nickel, Total	98	99	85 - 119	1	20		
Silver, Total	95	96	85 - 115	0	20		
Thallium, Total	93	96	85 - 118	3	20		
Vanadium, Total	95	98	85 - 120	3	20		
Zinc, Total	104	99	83 - 122	5	20		

## Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396509**

**Method: 6020B  
Preparation: 3005A  
Total Recoverable**

MS Lab Sample ID: 280-103614-E-1-B MS      Units: mg/L  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/27/2017 2346  
 Prep Date: 11/27/2017 1610  
 Leach Date: N/A

MSD Lab Sample ID: 280-103614-E-1-C MSD  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/27/2017 2350  
 Prep Date: 11/27/2017 1610  
 Leach Date: N/A

Analyte	Sample Result/Qual		MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Antimony, Total	0.00049	J	0.0400	0.0400	0.0380	0.0394
Barium, Total	0.0025		0.0400	0.0400	0.0415	0.0424
Beryllium, Total	0.000092	J	0.0400	0.0400	0.0424	0.0426
Cadmium, Total	ND		0.0400	0.0400	0.0394	0.0414
Chromium, Total	0.0081		0.0400	0.0400	0.0478	0.0479
Copper, Total	ND		0.0400	0.0400	0.0405	0.0417
Lead, Total	ND		0.0400	0.0400	0.0392	0.0405
Manganese, Total	0.0029		0.0400	0.0400	0.0418	0.0426
Nickel, Total	0.0015	J	0.0400	0.0400	0.0408	0.0411
Silver, Total	ND		0.0400	0.0400	0.0381	0.0382
Thallium, Total	ND		0.0400	0.0400	0.0371	0.0383
Vanadium, Total	0.0023		0.0400	0.0400	0.0403	0.0415
Zinc, Total	ND		0.0400	0.0400	0.0416	0.0398

# Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

**Method Blank - Batch: 280-396777**

Lab Sample ID: MB 280-396777/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/29/2017 2311  
 Prep Date: 11/29/2017 1423  
 Leach Date: N/A

Analysis Batch: 280-397048  
 Prep Batch: 280-396777  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_077  
 Lab File ID: 193\_BLK.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Manganese, Dissolved	ND		0.00031	0.0010

**Lab Control Sample - Batch: 280-396777**

Lab Sample ID: LCS 280-396777/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/29/2017 2314  
 Prep Date: 11/29/2017 1423  
 Leach Date: N/A

Analysis Batch: 280-397048  
 Prep Batch: 280-396777  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_077  
 Lab File ID: 194\_LCS.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Manganese, Dissolved	0.0400	0.0397	99	89 - 119	

**Matrix Spike/  
 Matrix Spike Duplicate Recovery Report - Batch: 280-396777**

MS Lab Sample ID: 280-103730-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/29/2017 2326  
 Prep Date: 11/29/2017 1423  
 Leach Date: N/A

Analysis Batch: 280-397048  
 Prep Batch: 280-396777  
 Leach Batch: N/A

**Method: 6020B  
 Preparation: 3005A  
 Dissolved**

Instrument ID: MT\_077  
 Lab File ID: 197SMPL.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-103730-1  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/29/2017 2330  
 Prep Date: 11/29/2017 1423  
 Leach Date: N/A

Analysis Batch: 280-397048  
 Prep Batch: 280-396777  
 Leach Batch: N/A

Instrument ID: MT\_077  
 Lab File ID: 198SMPL.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Manganese, Dissolved	95	97	85 - 117	2	20		



**Quality Control Results**

Client: Waste Management

Job Number: 280-103730-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396777**

**Method: 6020B  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-103730-1                      Units: mg/L  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/29/2017 2326  
Prep Date: 11/29/2017 1423  
Leach Date: N/A

MSD Lab Sample ID: 280-103730-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/29/2017 2330  
Prep Date: 11/29/2017 1423  
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Manganese, Dissolved	ND	0.0400	0.0400	0.0381	0.0389

## Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

**Method Blank - Batch: 280-398268**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 280-398268/6	Analysis Batch: 280-398268	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 06.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/11/2017 1131	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Chloride	ND		1.0	1.0
Sulfate	ND		1.0	1.0

**Method Reporting Limit Check - Batch: 280-398268**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MRL 280-398268/3	Analysis Batch: 280-398268	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 03.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/11/2017 1037	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	2.50	ND	117	50 - 150	
Sulfate	2.50	ND	117	50 - 150	

**Lab Control Sample/  
Lab Control Sample Duplicate Recovery Report - Batch: 280-398268**

**Method: 300.0**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-398268/4	Analysis Batch: 280-398268	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 04.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/11/2017 1055	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-398268/5	Analysis Batch: 280-398268	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 05.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/11/2017 1113	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Chloride	100	100	90 - 110	0	10		
Sulfate	100	100	90 - 110	0	10		

## Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

**Laboratory Control/  
Laboratory Duplicate Data Report - Batch: 280-398268**

**Method: 300.0  
Preparation: N/A**

LCS Lab Sample ID: LCS 280-398268/4      Units: mg/L  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/11/2017 1055  
 Prep Date: N/A  
 Leach Date: N/A

LCSD Lab Sample ID: LCSD 280-398268/5  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/11/2017 1113  
 Prep Date: N/A  
 Leach Date: N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Chloride	100	100	99.6	99.6
Sulfate	100	100	100	100

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-398268**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-103815-D-1 MS  
 Client Matrix: Water  
 Dilution: 100  
 Analysis Date: 12/11/2017 2129  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-398268  
 Prep Batch: N/A  
 Leach Batch: N/A

Instrument ID: WC\_IonChrom7  
 Lab File ID: 25.0000.d  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL  
 25 uL

MSD Lab Sample ID: 280-103815-D-1 MSD  
 Client Matrix: Water  
 Dilution: 100  
 Analysis Date: 12/11/2017 2147  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-398268  
 Prep Batch: N/A  
 Leach Batch: N/A

Instrument ID: WC\_IonChrom7  
 Lab File ID: 26.0000.d  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL  
 25 uL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Chloride	115	114	80 - 120	0	20		
Sulfate	110	110	80 - 120	0	20		

## Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-398268**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-103815-D-1 MS      Units: mg/L  
 Client Matrix: Water  
 Dilution: 100  
 Analysis Date: 12/11/2017 2129  
 Prep Date: N/A  
 Leach Date: N/A

MSD Lab Sample ID: 280-103815-D-1 MSD  
 Client Matrix: Water  
 Dilution: 100  
 Analysis Date: 12/11/2017 2147  
 Prep Date: N/A  
 Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Chloride	160	2500	2500	3030	3020
Sulfate	2400	2500	2500	5110	5120

**Duplicate - Batch: 280-398268**

**Method: 300.0  
Preparation: N/A**

Lab Sample ID: 280-103815-D-1 DU  
 Client Matrix: Water  
 Dilution: 100  
 Analysis Date: 12/11/2017 2111  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-398268  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: mg/L

Instrument ID: WC\_IonChrom7  
 Lab File ID: 24.0000.d  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL  
 25 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Chloride	160	161	3	15	
Sulfate	2400	2230	6	15	

## Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

**Method Blank - Batch: 280-397284**

**Method: 350.1**  
**Preparation: N/A**

Lab Sample ID: MB 280-397284/61	Analysis Batch: 280-397284	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\113017.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/30/2017 2014	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Ammonia (as N)	ND		0.030	0.030

**Lab Control Sample/**  
**Lab Control Sample Duplicate Recovery Report - Batch: 280-397284**

**Method: 350.1**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-397284/59	Analysis Batch: 280-397284	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\113017.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 11/30/2017 2010	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-397284/60	Analysis Batch: 280-397284	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\113017.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 11/30/2017 2012	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Ammonia (as N)	100	100	90 - 110	0	10		

**Laboratory Control/**  
**Laboratory Duplicate Data Report - Batch: 280-397284**

**Method: 350.1**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-397284/59	Units: mg/L	LCSD Lab Sample ID: LCSD 280-397284/60
Client Matrix: Water		Client Matrix: Water
Dilution: 1.0		Dilution: 1.0
Analysis Date: 11/30/2017 2010		Analysis Date: 11/30/2017 2012
Prep Date: N/A		Prep Date: N/A
Leach Date: N/A		Leach Date: N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Ammonia (as N)	2.50	2.50	2.50	2.51

## Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-397284**

**Method: 350.1  
Preparation: N/A**

MS Lab Sample ID: 280-103724-D-6 MS	Analysis Batch: 280-397284	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\113017.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 11/30/2017 2018		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-103724-D-6 MSD	Analysis Batch: 280-397284	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\113017.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 11/30/2017 2020		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Ammonia (as N)	101	100	90 - 110	1	10		

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-397284**

**Method: 350.1  
Preparation: N/A**

MS Lab Sample ID: 280-103724-D-6 MS	Units: mg/L	MSD Lab Sample ID: 280-103724-D-6 MSD
Client Matrix: Water		Client Matrix: Water
Dilution: 1.0		Dilution: 1.0
Analysis Date: 11/30/2017 2018		Analysis Date: 11/30/2017 2020
Prep Date: N/A		Prep Date: N/A
Leach Date: N/A		Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Ammonia (as N)	0.038	1.00	1.00	1.05	1.04

# Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

## Method Blank - Batch: 280-398326

**Method: 353.2**  
**Preparation: N/A**

Lab Sample ID: MB 280-398326/1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 12/11/2017 1744  
Prep Date: N/A  
Leach Date: N/A

Analysis Batch: 280-398326  
Prep Batch: N/A  
Leach Batch: N/A  
Units: mg/L

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume:  
Final Weight/Volume:

Analyte	Result	Qual	RL	RL
Nitrate as N	ND		0.050	0.050

## Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

**Method Blank - Batch: 280-396376**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: MB 280-396376/57	Analysis Batch: 280-396376	Instrument ID: WC-AT3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 112417.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/22/2017 1744	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Alkalinity, Total (As CaCO3)	ND		5.0	5.0
Alkalinity, Bicarbonate (As CaCO3)	ND		5.0	5.0

**Lab Control Sample - Batch: 280-396376**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: LCS 280-396376/56	Analysis Batch: 280-396376	Instrument ID: WC-AT3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 112417.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/22/2017 1740	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity, Total (As CaCO3)	200	196	98	90 - 110	

**Duplicate - Batch: 280-396376**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: 280-103791-A-7 DU	Analysis Batch: 280-396376	Instrument ID: WC-AT3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 112417.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/22/2017 1753	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Alkalinity, Total (As CaCO3)	ND	ND	NC	10	



## Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

**Method Blank - Batch: 280-395903**

**Method: SM 2540C**

**Preparation: N/A**

Lab Sample ID: MB 280-395903/1	Analysis Batch: 280-395903	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 11/20/2017 1156	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Total Dissolved Solids (TDS)	ND		5.0	5.0

**Lab Control Sample - Batch: 280-395903**

**Method: SM 2540C**

**Preparation: N/A**

Lab Sample ID: LCS 280-395903/2	Analysis Batch: 280-395903	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 11/20/2017 1156	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Dissolved Solids (TDS)	500	506	101	86 - 110	

**Duplicate - Batch: 280-395903**

**Method: SM 2540C**

**Preparation: N/A**

Lab Sample ID: 280-103730-2	Analysis Batch: 280-395903	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 11/20/2017 1156	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Dissolved Solids (TDS)	200	184	8	10	

## Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

**Method Blank - Batch: 280-395948**

**Method: SM 2540D**

**Preparation: N/A**

Lab Sample ID: MB 280-395948/3	Analysis Batch: 280-395948	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 11/20/2017 1638	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Total Suspended Solids	ND		4.0	4.0

**Lab Control Sample/**

**Method: SM 2540D**

**Lab Control Sample Duplicate Recovery Report - Batch: 280-395948**

**Preparation: N/A**

LCS Lab Sample ID: LCS 280-395948/1	Analysis Batch: 280-395948	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 11/20/2017 1638	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-395948/2	Analysis Batch: 280-395948	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 11/20/2017 1638	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Total Suspended Solids	92	92	86 - 114	0	20		

**Laboratory Control/**

**Method: SM 2540D**

**Laboratory Duplicate Data Report - Batch: 280-395948**

**Preparation: N/A**

LCS Lab Sample ID: LCS 280-395948/1	Units: mg/L	LCSD Lab Sample ID: LCSD 280-395948/2
Client Matrix: Water		Client Matrix: Water
Dilution: 1.0		Dilution: 1.0
Analysis Date: 11/20/2017 1638		Analysis Date: 11/20/2017 1638
Prep Date: N/A		Prep Date: N/A
Leach Date: N/A		Leach Date: N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Total Suspended Solids	100	100	91.6	92.0

# Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

**Duplicate - Batch: 280-395948**

**Method: SM 2540D**

**Preparation: N/A**

Lab Sample ID:	280-103733-A-2 DU	Analysis Batch:	280-395948	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	250 mL
Analysis Date:	11/20/2017 1638	Units:	mg/L	Final Weight/Volume:	250 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Suspended Solids	7.2	8.00	11	10	F5

# Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

**Method Blank - Batch: 280-398382**

**Method: SM 5310B**

**Preparation: N/A**

Lab Sample ID: MB 280-398382/4	Analysis Batch: 280-398382	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 121117.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 12/11/2017 1428	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Total Organic Carbon - Average	ND		1.0	1.0

**Lab Control Sample - Batch: 280-398382**

**Method: SM 5310B**

**Preparation: N/A**

Lab Sample ID: LCS 280-398382/3	Analysis Batch: 280-398382	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 121117.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 12/11/2017 1414	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon - Average	25.0	25.4	102	88 - 112	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-398382**

**Method: SM 5310B**

**Preparation: N/A**

MS Lab Sample ID: 280-103785-B-4 MS	Analysis Batch: 280-398382	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 121117.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 12/11/2017 1912		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-103785-B-4 MSD	Analysis Batch: 280-398382	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 121117.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 12/11/2017 1927		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Total Organic Carbon - Average	103	103	88 - 112	0	15		

**Quality Control Results**

Client: Waste Management

Job Number: 280-103730-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-398382**

**Method: SM 5310B  
Preparation: N/A**

MS Lab Sample ID: 280-103785-B-4 MS      Units: mg/L  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 12/11/2017 1912  
Prep Date: N/A  
Leach Date: N/A

MSD Lab Sample ID: 280-103785-B-4 MSD  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 12/11/2017 1927  
Prep Date: N/A  
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Total Organic Carbon - Average	1.0	25.0	25.0	26.7	26.7

# Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

## Laboratory Chronicle

Lab ID: 280-103730-1

Client ID: MW-35

Sample Date/Time: 11/15/2017 09:25 Received Date/Time: 11/17/2017 12:15

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103730-J-1		280-396651		11/28/2017 00:39	1	TAL DEN	MRM
A:8260B SIM	280-103730-J-1		280-396651		11/28/2017 00:39	1	TAL DEN	MRM
P:5030C	280-103730-G-1		480-388459		11/20/2017 22:15	1	TAL BUF	RRS
A:8260C	280-103730-G-1		480-388459		11/20/2017 22:15	1	TAL BUF	RRS
P:5030C	280-103730-L-1		480-389245		11/27/2017 17:10	1	TAL BUF	RJF
A:8260C SIM	280-103730-L-1		480-389245		11/27/2017 17:10	1	TAL BUF	RJF
P:3005A	280-103730-E-1-B		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	280-103730-E-1-B		280-396876	280-396510	11/28/2017 20:40	1	TAL DEN	CML
P:3005A	280-103730-F-1-D		280-397056	280-396780	11/29/2017 14:23	1	TAL DEN	MLS
A:6010D	280-103730-F-1-D		280-397056	280-396780	11/29/2017 22:10	1	TAL DEN	CML
P:3005A	280-103730-F-1-D		280-397251	280-396780	11/29/2017 14:23	1	TAL DEN	MLS
A:6010D	280-103730-F-1-D		280-397251	280-396780	11/30/2017 15:48	1	TAL DEN	CML
P:3005A	280-103730-E-1-A		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103730-E-1-A		280-396711	280-396509	11/28/2017 00:59	1	TAL DEN	LMT
P:3005A	280-103730-F-1-A		280-397048	280-396777	11/29/2017 14:23	1	TAL DEN	MLS
A:6020B	280-103730-F-1-A		280-397048	280-396777	11/29/2017 23:18	1	TAL DEN	LMT
A:300.0	280-103730-A-1		280-398268		12/12/2017 01:03	1	TAL DEN	JML
A:350.1	280-103730-C-1		280-397284		11/30/2017 20:36	1	TAL DEN	KAM
A:353.2	280-103730-A-1		280-398326		12/11/2017 17:45	1	TAL DEN	AJA
A:SM 2320B	280-103730-B-1		280-396376		11/22/2017 19:00	1	TAL DEN	A1D
A:SM 2540C	280-103730-A-1		280-395903		11/20/2017 11:56	1	TAL DEN	JAP
A:SM 2540D	280-103730-B-1		280-395948		11/20/2017 16:38	1	TAL DEN	SVC
A:SM 5310B	280-103730-C-1		280-398382		12/11/2017 19:41	1	TAL DEN	CCJ
A:Field Sampling	280-103730-A-1		280-395824		11/15/2017 10:25	1	TAL DEN	CS

Lab ID: 280-103730-1 MS

Client ID: MW-35

Sample Date/Time: 11/15/2017 09:25 Received Date/Time: 11/17/2017 12:15

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3005A	280-103730-F-1-B MS		280-397048	280-396777	11/29/2017 14:23	1	TAL DEN	MLS
A:6020B	280-103730-F-1-B MS		280-397048	280-396777	11/29/2017 23:26	1	TAL DEN	LMT

Lab ID: 280-103730-1 MSD

Client ID: MW-35

Sample Date/Time: 11/15/2017 09:25 Received Date/Time: 11/17/2017 12:15

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3005A	280-103730-F-1-C MSD		280-397048	280-396777	11/29/2017 14:23	1	TAL DEN	MLS
A:6020B	280-103730-F-1-C MSD		280-397048	280-396777	11/29/2017 23:30	1	TAL DEN	LMT

# Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

## Laboratory Chronicle

Lab ID: 280-103730-2

Client ID: MW-32

Sample Date/Time: 11/15/2017 10:46 Received Date/Time: 11/17/2017 12:15

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103730-H-2		280-396651		11/28/2017 00:57	1	TAL DEN	MRM
A:8260B SIM	280-103730-H-2		280-396651		11/28/2017 00:57	1	TAL DEN	MRM
P:5030C	280-103730-J-2		480-388459		11/20/2017 22:39	1	TAL BUF	RRS
A:8260C	280-103730-J-2		480-388459		11/20/2017 22:39	1	TAL BUF	RRS
P:5030C	280-103730-L-2		480-389245		11/27/2017 17:34	1	TAL BUF	RJF
A:8260C SIM	280-103730-L-2		480-389245		11/27/2017 17:34	1	TAL BUF	RJF
P:3005A	280-103730-E-2-B		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	280-103730-E-2-B		280-396876	280-396510	11/28/2017 20:43	1	TAL DEN	CML
P:3005A	280-103730-F-2-B		280-397056	280-396780	11/29/2017 14:23	1	TAL DEN	MLS
A:6010D	280-103730-F-2-B		280-397056	280-396780	11/29/2017 22:13	1	TAL DEN	CML
P:3005A	280-103730-F-2-B		280-397251	280-396780	11/29/2017 14:23	1	TAL DEN	MLS
A:6010D	280-103730-F-2-B		280-397251	280-396780	11/30/2017 16:03	1	TAL DEN	CML
P:3005A	280-103730-E-2-A		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103730-E-2-A		280-396711	280-396509	11/28/2017 01:03	1	TAL DEN	LMT
P:3005A	280-103730-F-2-A		280-397048	280-396777	11/29/2017 14:23	1	TAL DEN	MLS
A:6020B	280-103730-F-2-A		280-397048	280-396777	11/29/2017 23:37	1	TAL DEN	LMT
A:300.0	280-103730-A-2		280-398268		12/11/2017 23:16	1	TAL DEN	JML
A:350.1	280-103730-C-2		280-397284		11/30/2017 20:38	1	TAL DEN	KAM
A:353.2	280-103730-A-2		280-398326		12/11/2017 17:45	1	TAL DEN	AJA
A:SM 2320B	280-103730-B-2		280-396376		11/22/2017 18:45	1	TAL DEN	A1D
A:SM 2540C	280-103730-A-2		280-395903		11/20/2017 11:56	1	TAL DEN	JAP
A:SM 2540D	280-103730-B-2		280-395948		11/20/2017 16:38	1	TAL DEN	SVC
A:SM 5310B	280-103730-C-2		280-398382		12/11/2017 19:56	1	TAL DEN	CCJ
A:Field Sampling	280-103730-A-2		280-395824		11/15/2017 11:46	1	TAL DEN	CS

Lab ID: 280-103730-2 DU

Client ID: MW-32

Sample Date/Time: 11/15/2017 10:46 Received Date/Time: 11/17/2017 12:15

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:SM 2540C	280-103730-A-2 DU		280-395903		11/20/2017 11:56	1	TAL DEN	JAP

Lab ID: 280-103730-3

Client ID: TRIP BLANK

Sample Date/Time: 11/15/2017 00:00 Received Date/Time: 11/17/2017 12:15

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103730-C-3		280-396684		11/28/2017 17:33	1	TAL DEN	MRM
A:8260B SIM	280-103730-C-3		280-396684		11/28/2017 17:33	1	TAL DEN	MRM
P:5030C	280-103730-A-3		480-388459		11/20/2017 23:03	1	TAL BUF	RRS
A:8260C	280-103730-A-3		480-388459		11/20/2017 23:03	1	TAL BUF	RRS
P:5030C	280-103730-B-3		480-389245		11/27/2017 17:58	1	TAL BUF	RJF
A:8260C SIM	280-103730-B-3		480-389245		11/27/2017 17:58	1	TAL BUF	RJF

## Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

### Laboratory Chronicle

Lab ID: MB

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	MB 280-396651/8		280-396651		11/27/2017 18:39	1	TAL DEN	MRM
A:8260B SIM	MB 280-396651/8		280-396651		11/27/2017 18:39	1	TAL DEN	MRM
P:5030C	MB 480-388459/6		480-388459		11/20/2017 21:43	1	TAL BUF	RRS
A:8260C	MB 480-388459/6		480-388459		11/20/2017 21:43	1	TAL BUF	RRS
P:5030C	MB 480-389245/9		480-389245		11/27/2017 16:12	1	TAL BUF	RJF
A:8260C SIM	MB 480-389245/9		480-389245		11/27/2017 16:12	1	TAL BUF	RJF
P:3005A	MB 280-396510/1-A		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	MB 280-396510/1-A		280-396876	280-396510	11/28/2017 19:41	1	TAL DEN	CML
P:3005A	MB 280-396780/1-A		280-397056	280-396780	11/29/2017 14:23	1	TAL DEN	MLS
A:6010D	MB 280-396780/1-A		280-397056	280-396780	11/29/2017 21:46	1	TAL DEN	CML
P:3005A	MB 280-396780/1-A		280-397251	280-396780	11/29/2017 14:23	1	TAL DEN	MLS
A:6010D	MB 280-396780/1-A		280-397251	280-396780	11/30/2017 15:21	1	TAL DEN	CML
P:3005A	MB 280-396509/1-A		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	MB 280-396509/1-A		280-396711	280-396509	11/27/2017 23:33	1	TAL DEN	LMT
P:3005A	MB 280-396777/1-A		280-397048	280-396777	11/29/2017 14:23	1	TAL DEN	MLS
A:6020B	MB 280-396777/1-A		280-397048	280-396777	11/29/2017 23:11	1	TAL DEN	LMT
A:300.0	MB 280-398268/6		280-398268		12/11/2017 11:31	1	TAL DEN	JML
A:350.1	MB 280-397284/61		280-397284		11/30/2017 20:14	1	TAL DEN	KAM
A:353.2	MB 280-398326/1		280-398326		12/11/2017 17:44	1	TAL DEN	AJA
A:SM 2320B	MB 280-396376/57		280-396376		11/22/2017 17:44	1	TAL DEN	A1D
A:SM 2540C	MB 280-395903/1		280-395903		11/20/2017 11:56	1	TAL DEN	JAP
A:SM 2540D	MB 280-395948/3		280-395948		11/20/2017 16:38	1	TAL DEN	SVC
A:SM 5310B	MB 280-398382/4		280-398382		12/11/2017 14:28	1	TAL DEN	CCJ



# Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

## Laboratory Chronicle

Lab ID: LCS

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	LCS 280-396651/6		280-396651		11/27/2017 18:21	1	TAL DEN	MRM
A:8260B SIM	LCS 280-396651/6		280-396651		11/27/2017 18:21	1	TAL DEN	MRM
P:5030B	LCS 280-396684/4		280-396684		11/28/2017 08:30	1	TAL DEN	MRM
A:8260B SIM	LCS 280-396684/4		280-396684		11/28/2017 08:30	1	TAL DEN	MRM
P:5030B	LCS 280-396684/6		280-396684		11/28/2017 16:03	1	TAL DEN	MRM
A:8260B SIM	LCS 280-396684/6		280-396684		11/28/2017 16:03	1	TAL DEN	MRM
P:5030C	LCS 480-388459/4		480-388459		11/20/2017 20:55	1	TAL BUF	RRS
A:8260C	LCS 480-388459/4		480-388459		11/20/2017 20:55	1	TAL BUF	RRS
P:5030C	LCS 480-389245/6		480-389245		11/27/2017 14:59	1	TAL BUF	RJF
A:8260C SIM	LCS 480-389245/6		480-389245		11/27/2017 14:59	1	TAL BUF	RJF
P:3005A	LCS 280-396510/2-A		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	LCS 280-396510/2-A		280-396876	280-396510	11/28/2017 19:44	1	TAL DEN	CML
P:3005A	LCS 280-396780/2-A		280-397056	280-396780	11/29/2017 14:23	1	TAL DEN	MLS
A:6010D	LCS 280-396780/2-A		280-397056	280-396780	11/29/2017 21:49	1	TAL DEN	CML
P:3005A	LCS 280-396780/2-A		280-397251	280-396780	11/29/2017 14:23	1	TAL DEN	MLS
A:6010D	LCS 280-396780/2-A		280-397251	280-396780	11/30/2017 15:24	1	TAL DEN	CML
P:3005A	LCS 280-396509/2-A		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	LCS 280-396509/2-A		280-396711	280-396509	11/27/2017 23:36	1	TAL DEN	LMT
P:3005A	LCS 280-396777/2-A		280-397048	280-396777	11/29/2017 14:23	1	TAL DEN	MLS
A:6020B	LCS 280-396777/2-A		280-397048	280-396777	11/29/2017 23:14	1	TAL DEN	LMT
A:300.0	LCS 280-398268/4		280-398268		12/11/2017 10:55	1	TAL DEN	JML
A:350.1	LCS 280-397284/59		280-397284		11/30/2017 20:10	1	TAL DEN	KAM
A:SM 2320B	LCS 280-396376/56		280-396376		11/22/2017 17:40	1	TAL DEN	A1D
A:SM 2540C	LCS 280-395903/2		280-395903		11/20/2017 11:56	1	TAL DEN	JAP
A:SM 2540D	LCS 280-395948/1		280-395948		11/20/2017 16:38	1	TAL DEN	SVC
A:SM 5310B	LCS 280-398382/3		280-398382		12/11/2017 14:14	1	TAL DEN	CCJ

Lab ID: LCSD

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030C	LCSD 480-389245/7		480-389245		11/27/2017 15:23	1	TAL BUF	RJF
A:8260C SIM	LCSD 480-389245/7		480-389245		11/27/2017 15:23	1	TAL BUF	RJF
A:300.0	LCSD 280-398268/5		280-398268		12/11/2017 11:13	1	TAL DEN	JML
A:350.1	LCSD 280-397284/60		280-397284		11/30/2017 20:12	1	TAL DEN	KAM
A:SM 2540D	LCSD 280-395948/2		280-395948		11/20/2017 16:38	1	TAL DEN	SVC

Lab ID: MRL

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:300.0	MRL 280-398268/3		280-398268		12/11/2017 10:37	1	TAL DEN	JML

## Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

### Laboratory Chronicle

Lab ID: MS

Client ID: N/A

Sample Date/Time: 11/13/2017 11:21      Received Date/Time: 11/14/2017 08:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103543-J-1 MS		280-396651		11/27/2017 21:21	1	TAL DEN	MRM
A:8260B SIM	280-103543-J-1 MS		280-396651		11/27/2017 21:21	1	TAL DEN	MRM
P:5030B	280-103795-A-7 MS		280-396684		11/28/2017 11:15	1	TAL DEN	MRM
A:8260B SIM	280-103795-A-7 MS		280-396684		11/28/2017 11:15	1	TAL DEN	MRM
P:5030C	480-127657-D-1 MS		480-388459		11/21/2017 05:26	40	TAL BUF	RRS
A:8260C	480-127657-D-1 MS		480-388459		11/21/2017 05:26	40	TAL BUF	RRS
P:3005A	280-103614-E-2-C MS		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	280-103614-E-2-C MS		280-396876	280-396510	11/28/2017 19:56	1	TAL DEN	CML
P:3005A	280-103491-A-7-E MS		280-397056	280-396780	11/29/2017 14:23	1	TAL DEN	MLS
A:6010D	280-103491-A-7-E MS		280-397056	280-396780	11/29/2017 21:58	1	TAL DEN	CML
P:3005A	280-103491-A-7-E MS		280-397251	280-396780	11/29/2017 14:23	1	TAL DEN	MLS
A:6010D	280-103491-A-7-E MS		280-397251	280-396780	11/30/2017 15:33	1	TAL DEN	CML
P:3005A	280-103614-E-1-B MS		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103614-E-1-B MS		280-396711	280-396509	11/27/2017 23:46	1	TAL DEN	LMT
A:300.0	280-103815-D-1 MS		280-398268		12/11/2017 21:29	100	TAL DEN	JML
A:350.1	280-103724-D-6 MS		280-397284		11/30/2017 20:18	1	TAL DEN	KAM
A:SM 5310B	280-103785-B-4 MS		280-398382		12/11/2017 19:12	1	TAL DEN	CCJ

## Quality Control Results

Client: Waste Management

Job Number: 280-103730-1

### Laboratory Chronicle

Lab ID: MSD

Client ID: N/A

Sample Date/Time: 11/13/2017 11:21      Received Date/Time: 11/14/2017 08:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103543-J-1 MSD		280-396651		11/27/2017 21:39	1	TAL DEN	MRM
A:8260B SIM	280-103543-J-1 MSD		280-396651		11/27/2017 21:39	1	TAL DEN	MRM
P:5030B	280-103795-A-7 MSD		280-396684		11/28/2017 11:33	1	TAL DEN	MRM
A:8260B SIM	280-103795-A-7 MSD		280-396684		11/28/2017 11:33	1	TAL DEN	MRM
P:5030C	480-127657-D-1 MSD		480-388459		11/21/2017 05:49	40	TAL BUF	RRS
A:8260C	480-127657-D-1 MSD		480-388459		11/21/2017 05:49	40	TAL BUF	RRS
P:3005A	280-103614-E-2-D MSD		280-396876	280-396510	11/28/2017 08:06	1	TAL DEN	CDH
A:6010D	280-103614-E-2-D MSD		280-396876	280-396510	11/28/2017 19:59	1	TAL DEN	CML
P:3005A	280-103491-A-7-F MSD		280-397056	280-396780	11/29/2017 14:23	1	TAL DEN	MLS
A:6010D	280-103491-A-7-F MSD		280-397056	280-396780	11/29/2017 22:01	1	TAL DEN	CML
P:3005A	280-103491-A-7-F MSD		280-397251	280-396780	11/29/2017 14:23	1	TAL DEN	MLS
A:6010D	280-103491-A-7-F MSD		280-397251	280-396780	11/30/2017 15:36	1	TAL DEN	CML
P:3005A	280-103614-E-1-C MSD		280-396711	280-396509	11/27/2017 16:10	1	TAL DEN	MLS
A:6020B	280-103614-E-1-C MSD		280-396711	280-396509	11/27/2017 23:50	1	TAL DEN	LMT
A:300.0	280-103815-D-1 MSD		280-398268		12/11/2017 21:47	100	TAL DEN	JML
A:350.1	280-103724-D-6 MSD		280-397284		11/30/2017 20:20	1	TAL DEN	KAM
A:SM 5310B	280-103785-B-4 MSD		280-398382		12/11/2017 19:27	1	TAL DEN	CCJ

Lab ID: DU

Client ID: N/A

Sample Date/Time: 11/15/2017 11:52      Received Date/Time: 11/18/2017 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:300.0	280-103815-D-1 DU		280-398268		12/11/2017 21:11	100	TAL DEN	JML
A:SM 2320B	280-103791-A-7 DU		280-396376		11/22/2017 17:53	1	TAL DEN	A1D
A:SM 2540D	280-103733-A-2 DU		280-395948		11/20/2017 16:38	1	TAL DEN	SVC

**Lab References:**

TAL BUF = TestAmerica Buffalo

TAL DEN = TestAmerica Denver

Chain of Custody Record

Client Information: 4955 Yarrow Street, Arvada, CO 80002  
 Phone: (303) 736-0100 Fax: (303) 431-7171  
 Client Contact: Mr. Patrick Madej  
 Waste Management: 2615 Davis Street, San Leandro, CA, 94577  
 Address: 2615 Davis Street, San Leandro, CA, 94577  
 City: San Leandro, State: CA, Zip: 94577  
 Phone: 612 940 2980  
 Email: slarabov@sssonjncvs.com  
 Project Name: WAO2/Olympic View Sanitary LF  
 Event Desc: Quarterly GW App/II - Mar Jun Sep Dec  
 Site: Washington

Sampler: Sam 6. Phone: 612 940 2980  
 Lab PM: Sara, Betsy A  
 E-Mail: betsy.sara@testamericainc.com  
 Carrier Tracking No(s): 4150 9259 2536  
 COC No: 280-17318-3224.1  
 Page: 1 of 1  
 Job #: 04204027.20

Due Date Requested: Standard  
 TAT Requested (days):  
 PO #: 612 940 2980  
 WO #: 612 940 2980  
 Project #: 28002692  
 SSONJ#:

Sample Identification	Sample Date	Sample Time	Sample Type (C-comp, G-grab)	Matrix (W-water, S-solid, O-organic, BT-Tissue, A-Air)	Field ID: SAMP ID (9 of 10)	Form ID: MSDR (9 of 10)	TSP Alk/C/SO4/NO3 (cad)	Dissolved Metals	Ammonia/TOC	826B - long list (TA Buffalo)	826B SIM (TA Buffalo)	Total Metals	TSS	Total Arsenic (direct sub to ARI)
MW-35	11/15/17	925	G	W	YN	XX	XX	XX	XX	XX	XX	XX	XX	XX
MW-32	↓	1046	G	↓	YN	XX	XX	XX	XX	XX	XX	XX	XX	XX
Trip blank	↓	-	-	↓	NN									

Special Instructions/Note: Arsenic - Direct sub to ARI  
 Short Hold: NO3(cad)  
 Preservation Codes: M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Analysis Requested: 826B - long list (TA Buffalo), 826B SIM (TA Buffalo), Total Metals, TSS, Total Arsenic (direct sub to ARI)

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

Deliverable Requested: 1, II, III, IV, Other (specify)

Sample Disposal:  Return To Client,  Disposal By Lab,  Archive For Months

Empty Kit Relinquished by: Date: 11/15/17, Time: 1600  
 Relinquished by: Date: 11/17/17, Time: 0900  
 Relinquished by: Date: 11/17/17, Time: 0900

Custody Seal No.: 402701  
 Custody Seals Intact:  Yes  No  
 Relinquished by: Date: 11/17/17, Time: 0900, Company: SCS  
 Relinquished by: Date: 11/17/17, Time: 0900, Company: SCS  
 Relinquished by: Date: 11/17/17, Time: 0900, Company: SCS

Other Remarks: U.S. to U.S. transferred by ALG 11/17/17

# FIELD INFORMATION FORM



Site Name: 052C  
 Site No.:       
 Sample Point: MW-35  
 Sample ID:     

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample container (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:  
    

**PURGE INFO**  
 PURGE DATE (MM DD YY): 11 15 17  
 PURGE TIME (2400 Hr Clock): 9:05  
 ELAPSED HRS (hrs:min): 20  
 WATER VOL IN CASING (Gallons):       
 ACTUAL VOL PURGED (Gallons):       
 WELL VOL PURGED:     

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**  
 Purging and Sampling Equipment... Dedicated:  or  N  
 Purging Device: C A-Submersible Pump D-Bailer  
 B-Peristaltic Pump E-Piston Pump  
 Sampling Device: C C-QED Bladder Pump F-Dipper/Bottle  
 X-Other:       
 Filter Device:  or  N 0.45 μ or      μ (circle or fill in)  
 Filter Type: A A-In-line Disposable C-Vacuum  
 B-Pressure X-Other       
 Sample Tube Type: D A-Teflon C-PVC X-Other:       
 B-Stainless Steel D-Polypropylene

**WELL DATA**  
 Well Elevation (at TOC):      (ft/msl) Depth to Water (DTW) (from TOC): 72.09 (ft) Groundwater Elevation (site datum, from TOC):      (ft/msl)  
 Total Well Depth (from TOC):      (ft) Stick Up (from ground elevation):      (ft) Casing ID: 04 (in) Casing Material: PVC  
*Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate (Unit)	pH (std)	Conductance (SC/EC) (umhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L-ppm)	eH/ORP (mV)	DTW (ft)
191015	300	6.18	1161	10.87		15.66	210.713	
191110		6.69	11610	19.87		15.66	118.915	
191113		6.75	11611	19.89		15.63	115.712	
191116		6.82	11611	19.89		15.60	118.617	
191119		6.91	11610	19.84		15.59	118.417	
191212		6.93	11611	19.84		15.59	118.312	
14:215		6.95	11611	19.83	2.81	15.56	118.117	72.15

Suggested range for 3 consec. readings or note Permit/State requirements:  
 pH: +/- 0.2      Conductance: +/- 3%      Temp: --      Turbidity: --      D.O.: +/- 10%      eH/ORP: +/- 25 mV      DTW: Stabilize

**Stabilization Data Fields are Optional** (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

**FIELD DATA**  
 SAMPLE DATE (MM DD YY): 11 15 17 pH (std): 6.94 CONDUCTANCE (umhos/cm @ 25°C): 1161 TEMP. (°C): 9.83 TURBIDITY (ntu): 2.81 DO (mg/L-ppm): 5.56 eH/ORP (mV): 118.17 Other: DTW  
 Units: ET  
 Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

Sample Appearance: Clear Odor: None Color:      Other:       
 Weather Conditions (required daily, or as conditions change):      Direction/Speed:      Outlook: cloudy Precipitation: Y or  N

Specific Comments (including purge/well volume calculations if required):  
      
      
      
    

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):  
11/15/17 Sam Graber [Signature] SCS  
 Date Name Signature Company

# FIELD INFORMATION FORM



Site Name: 052L

Site No.: 111517      Sample Point: MW-32      Sample ID: 1026      20

This Waste Management Field Information Form is Required. This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers. (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID: \_\_\_\_\_

**PURGE INFO**

PURGE DATE: 111517      PURGE TIME: 1026      ELAPSED HRS: 20

WATER VOL IN CASING: \_\_\_\_\_      ACTUAL VOL PURGED: \_\_\_\_\_      WELL VOL. PURGED: \_\_\_\_\_

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ "Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged". Mark changes, record field data, below.

**PURGE/SAMPLE EQUIPMENT**

Purging and Sampling Equipment... Dedicated:  Y or  N      Filter Device:  Y or  N      0.45 μ or \_\_\_\_\_ μ (circle or fill in)

Purging Device: C      A-Submersible Pump      D-Bailer      Filter Type: A      A-In-line Disposable      C-Vacuum

Sampling Device: C      B-Peristaltic Pump      E-Piston Pump      B-Pressure      X-Other \_\_\_\_\_

X-Other: \_\_\_\_\_      Sample Tube Type: D      A-Teflon      C-PVC      X-Other: \_\_\_\_\_

B-Stainless Steel      D-Polypropylene

**WELL DATA**

Well Elevation (at TOC): \_\_\_\_\_ (ft/msl)      Depth to Water (DTW) (from TOC): 097 (ft)      Groundwater Elevation (site datum, from TOC): \_\_\_\_\_ (ft/msl)

Total Well Depth (from TOC): \_\_\_\_\_ (ft)      Stick Up (from ground elevation): \_\_\_\_\_ (ft)      Casing ID: 02 (in)      Casing Material: PVC

Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by State/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate/Cmd	pH (std)	Conductance (SC/EC) (μmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
110216	400	6.5	263	11.7		10	1055	
110311		6.9	262	11.85		10.4	-117	
110314		7.0	262	11.86		10.3	-122	
110317		7.0	262	11.88		10.19	-128	
110410		6.9	262	11.83		10.18	-128	
110413		7.0	262	11.89	1190	10.16	-133	
110416		7.0	263	11.90	1185	10.15	-136	121

Suggested range for 3 consec. readings or note Permit/State requirements:      pH: +/- 0.2      Conductance: +/- 3%      Temp: -      Turbidity: -      D.O.: +/- 10%      eH/ORP: +/- 25 mV      DTW: Stabilize

**FIELD DATA**

Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site).

SAMPLE DATE (MM DD YY): 111517      pH (std): 7.0      CONDUCTANCE (μmhos/cm @ 25°C): 263      TEMP. (°C): 11.94      TURBIDITY (ntu): 1.85      DO (mg/L-ppm): 0.15      eH/ORP (mV): -366      Other: 122      Units: FT

Sample Appearance: clear      Odor: None      Color: -      Other: -

Weather Conditions (required daily, or as conditions change): \_\_\_\_\_      Direction/Speed: -      Outlook: cloudy      Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required): \_\_\_\_\_

**FIELD COMMENTS**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

I certify that sampling procedures were in accordance with applicable EPA, State, and WMS protocols (if more than one sampler, all should sign):

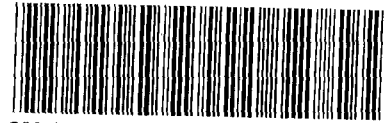
11/15/17      Sam Graber      \_\_\_\_\_      SCS

Date      Name      Signature      Company

# Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>		Sampler: Sara, Betsy A	Lab PM: Sara, Betsy A	Carrier Tracking No(s): 280-419919-1	COC No: 280-419919-1																																								
Client Contact: Shipping/Receiving		Phone: betsy.sara@testamericainc.com	E-Mail: betsy.sara@testamericainc.com	State of Origin: Washington	Page: Page 1 of 1																																								
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - Oregon		Job #: 280-103730-1	Preservation Codes:																																								
Address: 10 Hazelwood Drive, Amherst, NY, 14228-2298		Due Date Requested: 12/6/2017	TAT Requested (days):	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 Other:																																									
PO #: 716-691-2600(Tel) 716-691-7991(Fax)	WO #: Project #: 28002692	SSOW#:	Analysis Requested																																										
Project Name: WAO2 Olympic View Sanitary LF	Site: WAO2 Olympic View Sanitary LF	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Sample Identification - Client ID (Lab ID)</th> <th>Sample Date</th> <th>Sample Time</th> <th>Sample Type (C=Comp, G=grab)</th> <th>Matrix (W=water, S=solid, O=wash, oil)</th> <th>Field Filtered Sample (Yes or No)</th> <th>Perform MS/MSD (Yes or No)</th> <th>8260C/503C (MOD) Appendix II Volatiles</th> <th>Total Number of Containers</th> <th>Special Instructions/Note:</th> </tr> </thead> <tbody> <tr> <td>MW-35 (280-103730-1)</td> <td>11/15/17</td> <td>09:25 Pacific</td> <td>Water</td> <td>Water</td> <td>X</td> <td>X</td> <td>X</td> <td>3</td> <td></td> </tr> <tr> <td>MW-32 (280-103730-2)</td> <td>11/15/17</td> <td>10:46 Pacific</td> <td>Water</td> <td>Water</td> <td>X</td> <td>X</td> <td>X</td> <td>3</td> <td></td> </tr> <tr> <td>TRIP BLANK (280-103730-3)</td> <td>11/15/17</td> <td>Pacific</td> <td>Water</td> <td>Water</td> <td>X</td> <td></td> <td></td> <td>2</td> <td></td> </tr> </tbody> </table>				Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wash, oil)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C/503C (MOD) Appendix II Volatiles	Total Number of Containers	Special Instructions/Note:	MW-35 (280-103730-1)	11/15/17	09:25 Pacific	Water	Water	X	X	X	3		MW-32 (280-103730-2)	11/15/17	10:46 Pacific	Water	Water	X	X	X	3		TRIP BLANK (280-103730-3)	11/15/17	Pacific	Water	Water	X			2	
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wash, oil)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C/503C (MOD) Appendix II Volatiles	Total Number of Containers	Special Instructions/Note:																																				
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TRIP BLANK (280-103730-3)	11/15/17	Pacific	Water	Water	X			2																																					
Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.																																													
<b>Possible Hazard Identification</b>					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months																																								
Unconfirmed					Special Instructions/QC Requirements:																																								
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2																																													
Empty Kit Relinquished by: _____ Date: _____ Time: _____ Method of Shipment:																																													
Relinquished by: _____			Date: 11/17/17			15:20			Received by: _____																																				
Relinquished by: _____			Date/Time: _____			Company: _____			Date/Time: 11/18/17 09:30																																				
Relinquished by: _____			Date/Time: _____			Company: _____			Date/Time: _____																																				
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No			Custody Seal No.:			Cooler Temperature(s) °C and Other Remarks: #1 3.3°C			Company: TA BWS, Company																																				



## COOLER RECEIPT FORM

Cooler Received/Opened On 11/20/2017 @ 830

Time Samples Removed From Cooler \_\_\_\_\_ Time Samples Placed In Storage \_\_\_\_\_ (2 Hour Window)

1. Tracking # 4170 29329452 (last 4 digits, FedEx) Courier: FedEx  
IR Gun ID 31470366 pH Strip Lot \_\_\_\_\_ Chlorine Strip Lot \_\_\_\_\_

2. Temperature of rep. sample or temp blank when opened: 13.6 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO  NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1 front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial) EJA

7. Were custody seals on containers: YES  NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None water only

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA



Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # NA

I certify that I unloaded the cooler and answered questions 7-14 (initial) EJA

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used? YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) EJA

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) EJA

I certify that I attached a label with the unique LIMS number to each container (initial) EMJ

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#



# Chain of Custody Record

Loc: 280  
103730

<b>Client Information (Sub Contract Lab)</b> Client Contact: Sara, Betsy A Shipping/Receiving: betsy.sara@testamericainc.com Company: TestAmerica Laboratories, Inc Address: 2960 Foster Creighton Drive, Nashville, TN, 37204 Phone: 615-726-0177(Tel) 615-726-3404(Fax) Email: Project Name: WA02(Olympic View Sanitary LF) Site: WA02(Olympic View Sanitary LF)			Lab Pkt: Sara, Betsy A E-Mail: betsy.sara@testamericainc.com Accreditations Required (See note): NELAP - Oregon		
Due Date Requested: 12/6/2017 TAT Requested (days): PO #: WO #: Project #: 28002692 SOW#:			State of Origin: Washington Job #: 280-103730-1 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 Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)		
Sample Identification - Client ID (Lab ID)			Analysis Requested		
Sample Date Sample Time Sample Type (C=Comp, G=grab) Matrix (Water, Sewer, Solid, Onwast, A=Air) Preservation Code:			Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) 826C_SIM/503C (MOD) Local Method Total Number of Containers		
MW-35 (280-103730-1) MW-32 (280-103730-2) TRIP BLANK (280-103730-3)			X X X 3 3 1		
Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State or Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.					
<b>Possible Hazard Identification</b> Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2					
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months					
Special Instructions/QC Requirements:					
Empty Kit Relinquished by: <i>Mar-Job</i> Date: 11/17/17 Relinquished by: Date/Time: 12/14/17 14:45 Company Relinquished by: Date/Time: Company Relinquished by: Date/Time: Company			Method of Shipment: Date/Time: Company Date/Time: Company Date/Time: Company Cooler Temperature(s) / Other Remarks: 11-20-17 8:50 13.6		
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.:			Ver: 09/20/2016		

# Login Sample Receipt Checklist

Client: Waste Management

Job Number: 280-103730-1

**Login Number: 103730**  
**List Number: 1**  
**Creator: Gomez, Alyssa I**

**List Source: TestAmerica Denver**

<b>Question</b>	<b>Answer</b>	<b>Comment</b>
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

# Login Sample Receipt Checklist

Client: Waste Management

Job Number: 280-103730-1

**Login Number: 103730**  
**List Number: 3**  
**Creator: Hulbert, Michael J**

**List Source: TestAmerica Buffalo**  
**List Creation: 11/20/17 01:40 PM**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.3 #1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	False	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	



## ANALYTICAL REPORT

Job Number: 280-104250-1

Job Description: WA02|Olympic View Sanitary LF

For:

Waste Management

2615 Davis Street

San Leandro, CA 94577

Attention: Mr. Patrick Madej



Approved for release.  
Betsy A Sara  
Project Manager II  
12/5/2017 10:18 AM

---

Betsy A Sara, Project Manager II  
4955 Yarrow Street, Arvada, CO, 80002  
(303)736-0189  
betsy.sara@testamericainc.com  
12/05/2017

cc: Mr. Dan Venchiarutti

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

**TestAmerica Laboratories, Inc.**

TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002  
Tel (303) 736-0100 Fax (303) 431-7171 [www.testamericainc.com](http://www.testamericainc.com)



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01 December 2017

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

RE: OVSL

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

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

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

<u>Associated Work Order(s)</u>	<u>Associated SDG ID(s)</u>
17K0304	N/A

----

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

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

Analytical Resources, Inc.

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



# Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: **Standard**  
 Turn-around Requested: **Standard**  
 ARI Client Company: **SCS Engineers**  
 Phone: **425-289-5455**  
 Client Contact: **Dan Venchiarutti**  
 Client Project Name: **OVS**  
 Client Project #: **04204027.20**  
 Samplers: **Sam G. and Alexa D.**

Date: **11/16/17**  
 Page: **1** of **2**  
 No. of Coolers: **1**  
 Cooler Temps: **2**

Analytical Resources, Incorporated  
 Analytical Chemists and Consultants  
 4611 South 134th Place, Suite 100  
 Tukwila, WA 98168  
 206-695-6200 206-695-6201 (fax)



Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested				Notes/Comments			
					Low level	Total Arsenic						
MW-13A	11/13/17	1121	GW	2								
MW-13B		1120			X							
MW-16		1255										
MW-39		1420										
MW-29A		1400										
MW-42		1500										
MW-43		1618										
MW-19C		1700										
MW-36A	11/14/17	943										
MW-33A		1150										
Comments/Special Instructions	Relinquished by: <i>Sam G. and Alexa D.</i> Printed Name: <b>Sam G. and Alexa D.</b> Company: <b>SCS Engineers</b> Date & Time: <b>11/16/17 1300</b>				Received by: <i>Jacob Walter</i> (Signature) Printed Name: <b>Jacob Walter</b> Company: <b>ARI</b> Date & Time: <b>11/16/2017 1300</b>				Relinquished by: <i>Sam G. and Alexa D.</i> (Signature) Printed Name: <b>Sam G. and Alexa D.</b> Company: <b>SCS Engineers</b> Date & Time: <b>11/16/17 1300</b>		Received by: <i>Jacob Walter</i> (Signature) Printed Name: <b>Jacob Walter</b> Company: <b>ARI</b> Date & Time: <b>11/16/2017 1300</b>	

**Limits of Liability:** ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

**Sample Retention Policy:** Unless specified by workorder or contract, all water/soil samples submitted to ARI will be discarded or returned, no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer. Sediment samples submitted under PSDDA/PSEP/SMS protocol will be stored frozen for up to one year and then discarded.



# Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:   
 Turn-around Requested: **Standard**   
 Date: **11/16/17**   
 ARI Client Company: **SCS Engineers**   
 Phone: **425-289-5455**   
 Page: **2** of **2**   
 Client Contact: **Dan Venchiarutti**   
 Client Project Name: **OVSL**   
 Client Project #: **04204027.20**   
 Samplers: **Sam G. and Alexa D.**   
 No. of Coolers:   
 Cooler Temps:

**Analytical Resources, Incorporated**  
 Analytical Chemists and Consultants  
 4611 South 134th Place, Suite 100  
 Tukwila, WA 98168  
 206-695-6200 206-695-6201 (fax)



Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested				Notes/Comments
MW-33 C	11/14/17	1248	GW	1					
MW-15R		1418							
Dup 2		1445							
MW-34 C		925							
MW-34 A		1015							
Dup 1		1025							
MW-35	11/15/17	925							
MW-32		1046							
Comments/Special Instructions	Relinquished by: (Signature) <i>Sam Gator</i>	Received by: (Signature) <i>Jacob Walke</i>	Relinquished by: (Signature)		Received by: (Signature)		Relinquished by: (Signature)		Received by: (Signature)
	Printed Name: <i>Sam Gator</i>	Printed Name: <i>Jacob Walke</i>	Printed Name:		Printed Name:		Printed Name:		Printed Name:
	Company: <i>SCS Engineers</i>	Company: <i>ARI</i>	Company:		Company:		Company:		Company:
	Date & Time: <i>11/16/17 1300</i>	Date & Time: <i>11/16/2017 1300</i>	Date & Time:		Date & Time:		Date & Time:		Date & Time:

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**Sample Retention Policy:** Unless specified by workorder or contract, all water/soil samples submitted to ARI will be discarded or returned, no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer. Sediment samples submitted under PSDDA/PSEP/SMS protocol will be stored frozen for up to one year and then discarded.



WORK ORDER

17K0304

Client: Test America - Denver	Project Manager: Amanda Volgardsen
Project: OVSL	Project Number: 04204027.20

Analysis	Due	TAT	Expires	Comments
17K0304-18 MW-32 [Water] Sampled 15-Nov-2017 10:46 (GMT-08:00) Pacific Time (US & Canada)				preserved with HNO3
Met 200.8 - As	01-Dec-2017 15:00	10	14-May-2018 10:46	

Preservation Confirmation

Container ID	Container Type	pH
17K0304-01 A	Miscellaneous Container	HNO3 <2 pass
17K0304-02 A	Miscellaneous Container	HNO3 <2 pass
17K0304-03 A	Miscellaneous Container	HNO3 <2 pass
17K0304-04 A	Miscellaneous Container	HNO3 <2 pass
17K0304-05 A	Miscellaneous Container	HNO3 <2 pass
17K0304-06 A	Miscellaneous Container	HNO3 <2 pass
17K0304-07 A	Miscellaneous Container	HNO3 <2 pass
17K0304-08 A	Miscellaneous Container	HNO3 <2 pass
17K0304-09 A	Miscellaneous Container	HNO3 <2 pass
17K0304-10 A	Miscellaneous Container	HNO3 <2 pass
17K0304-11 A	Miscellaneous Container	HNO3 <2 pass
17K0304-12 A	Miscellaneous Container	HNO3 <2 pass
17K0304-13 A	Miscellaneous Container	HNO3 <2 pass
17K0304-14 A	Miscellaneous Container	HNO3 <2 pass
17K0304-15 A	Miscellaneous Container	HNO3 <2 pass
17K0304-16 A	Miscellaneous Container	HNO3 <2 pass
17K0304-17 A	Miscellaneous Container	HNO3 <2 pass
17K0304-18 A	Miscellaneous Container	HNO3 <2 pass

SF

11/17/17

Preservation Confirmed By

Date





# Cooler Receipt Form

ARI Client: SCS Engineers

Project Name: OVSL

COC No(s): \_\_\_\_\_ NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: \_\_\_\_\_

Assigned ARI Job No: \_\_\_\_\_

Tracking No: \_\_\_\_\_ NA

**Preliminary Examination Phase:**

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES  NO

Were custody papers included with the cooler? ..... YES  NO

Were custody papers properly filled out (ink, signed, etc.) ..... YES  NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) Time: 1600 4:30

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 0005206

Cooler Accepted by: SBW Date: 11/16/2017 Time: 1300

*Complete custody forms and attach all shipping documents*

**Log-In Phase:**

Was a temperature blank included in the cooler? ..... YES  NO

What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: \_\_\_\_\_

Was sufficient ice used (if appropriate)? ..... NA  YES  NO

Were all bottles sealed in individual plastic bags? ..... YES  NO

Did all bottles arrive in good condition (unbroken)? ..... YES  NO

Were all bottle labels complete and legible? ..... YES  NO

Did the number of containers listed on COC match with the number of containers received? ..... YES  NO

Did all bottle labels and tags agree with custody papers? ..... YES  NO

Were all bottles used correct for the requested analyses? ..... YES  NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)... NA  YES  NO

Were all VOC vials free of air bubbles? ..... NA  YES  NO

Was sufficient amount of sample sent in each bottle? ..... YES  NO

Date VOC Trip Blank was made at ARI: ..... NA

Was Sample Split by ARI :  NA YES Date/Time: \_\_\_\_\_ Equipment: \_\_\_\_\_ Split by: \_\_\_\_\_

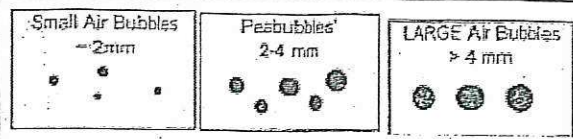
Samples Logged by: SF Date: 11/17/17 Time: 1027

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

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

**Additional Notes, Discrepancies, & Resolutions:**

By: \_\_\_\_\_ Date: \_\_\_\_\_



- Small → "sm" (< 2 mm)
- Peabubbles → "pb" (2 to < 4 mm)
- Large → "lg" (4 to < 6 mm)
- Headspace → "hs" (> 6 mm)



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Project: OVSL  
Project Number: 04204027.20  
Project Manager: Betsy Sara

Reported:  
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**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-13A	17K0304-01	Water	13-Nov-2017 11:21	16-Nov-2017 13:00
MW-13B	17K0304-02	Water	13-Nov-2017 11:20	16-Nov-2017 13:00
MW-16	17K0304-03	Water	13-Nov-2017 12:55	16-Nov-2017 13:00
MW-39	17K0304-04	Water	13-Nov-2017 14:20	16-Nov-2017 13:00
MW-29A	17K0304-05	Water	13-Nov-2017 14:00	16-Nov-2017 13:00
MW-42	17K0304-06	Water	13-Nov-2017 15:00	16-Nov-2017 13:00
MW-43	17K0304-07	Water	13-Nov-2017 16:18	16-Nov-2017 13:00
MW-19C	17K0304-08	Water	13-Nov-2017 17:00	16-Nov-2017 13:00
MW-36A	17K0304-09	Water	14-Nov-2017 09:43	16-Nov-2017 13:00
MW-33A	17K0304-10	Water	14-Nov-2017 11:50	16-Nov-2017 13:00
MW-33C	17K0304-11	Water	14-Nov-2017 12:48	16-Nov-2017 13:00
MW-15R	17K0304-12	Water	14-Nov-2017 14:18	16-Nov-2017 13:00
DUP2	17K0304-13	Water	14-Nov-2017 14:45	16-Nov-2017 13:00
MW-34C	17K0304-14	Water	14-Nov-2017 09:25	16-Nov-2017 13:00
MW-34A	17K0304-15	Water	14-Nov-2017 10:15	16-Nov-2017 13:00
DUP1	17K0304-16	Water	14-Nov-2017 10:25	16-Nov-2017 13:00
MW-35	17K0304-17	Water	15-Nov-2017 09:25	16-Nov-2017 13:00
MW-32	17K0304-18	Water	15-Nov-2017 10:46	16-Nov-2017 13:00



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Project Manager: Betsy Sara

Reported:  
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## Case Narrative

### Sample receipt

Samples as listed on the preceding page were received November 16, 2017 under ARI workorder 17K0304. For details regarding sample receipt, please refer to the Cooler Receipt Form.

### Total Metals - EPA Method 200.8

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

Initial and continuing calibrations were within method requirements.

The method blank was clean at the reporting limits.

The LCS percent recoveries were within control limits.



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Project Number: 04204027.20  
Project Manager: Betsy Sara

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**MW-13A**  
**17K0304-01 (Water)**

**Metals and Metallic Compounds**

Method: EPA 200.8  
Instrument: ICPMS2

Sampled: 11/13/2017 11:21  
Analyzed: 30-Nov-2017 17:25

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x  
Preparation Batch: BFK0730 Sample Size: 100 mL  
Prepared: 29-Nov-2017 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0000400	<b>0.000193</b>	mg/L	



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**MW-13B**  
**17K0304-02 (Water)**

**Metals and Metallic Compounds**

Method: EPA 200.8  
Instrument: ICPMS2

Sampled: 11/13/2017 11:20  
Analyzed: 30-Nov-2017 16:56

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x  
Preparation Batch: BFK0730 Sample Size: 100 mL  
Prepared: 29-Nov-2017 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0000400	<b>0.000311</b>	mg/L	



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Reported:  
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**MW-16**  
**17K0304-03 (Water)**

**Metals and Metallic Compounds**

Method: EPA 200.8  
Instrument: ICPMS2

Sampled: 11/13/2017 12:55  
Analyzed: 30-Nov-2017 17:00

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x  
Preparation Batch: BFK0730 Sample Size: 100 mL  
Prepared: 29-Nov-2017 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0000400	<b>0.000364</b>	mg/L	





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**MW-39**  
**17K0304-04 (Water)**

**Metals and Metallic Compounds**

Method: EPA 200.8 Sampled: 11/13/2017 14:20  
Instrument: ICPMS2 Analyzed: 30-Nov-2017 17:05

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x  
Preparation Batch: BFK0730 Sample Size: 100 mL  
Prepared: 29-Nov-2017 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0000400	<b>0.00178</b>	mg/L	



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**MW-29A**  
**17K0304-05 (Water)**

**Metals and Metallic Compounds**

Method: EPA 200.8 Sampled: 11/13/2017 14:00  
Instrument: ICPMS2 Analyzed: 30-Nov-2017 17:10

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x  
Preparation Batch: BFK0730 Sample Size: 100 mL  
Prepared: 29-Nov-2017 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0000400	<b>0.00213</b>	mg/L	



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Project: OVSL  
Project Number: 04204027.20  
Project Manager: Betsy Sara

Reported:  
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**MW-42**  
**17K0304-06 (Water)**

**Metals and Metallic Compounds**

Method: EPA 200.8  
Instrument: ICPMS2

Sampled: 11/13/2017 15:00  
Analyzed: 30-Nov-2017 17:15

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x  
Preparation Batch: BFK0730 Sample Size: 100 mL  
Prepared: 29-Nov-2017 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0000400	<b>0.00180</b>	mg/L	



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**MW-43**  
**17K0304-07 (Water)**

**Metals and Metallic Compounds**

Method: EPA 200.8 Sampled: 11/13/2017 16:18  
Instrument: ICPMS2 Analyzed: 30-Nov-2017 15:51

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x  
Preparation Batch: BFK0730 Sample Size: 100 mL  
Prepared: 29-Nov-2017 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0000400	<b>0.0000466</b>	mg/L	



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Project: OVSL  
Project Number: 04204027.20  
Project Manager: Betsy Sara

Reported:  
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**MW-19C**  
**17K0304-08 (Water)**

**Metals and Metallic Compounds**

Method: EPA 200.8  
Instrument: ICPMS2

Sampled: 11/13/2017 17:00  
Analyzed: 30-Nov-2017 15:56

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x  
Preparation Batch: BFK0730 Sample Size: 100 mL  
Prepared: 29-Nov-2017 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0000400	<b>0.00294</b>	mg/L	



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Reported:  
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**MW-36A**  
**17K0304-09 (Water)**

**Metals and Metallic Compounds**

Method: EPA 200.8  
Instrument: ICPMS2

Sampled: 11/14/2017 09:43  
Analyzed: 30-Nov-2017 16:01

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x  
Preparation Batch: BFK0730 Sample Size: 100 mL  
Prepared: 29-Nov-2017 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0000400	<b>0.000563</b>	mg/L	



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Project Number: 04204027.20  
Project Manager: Betsy Sara

Reported:  
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**MW-33A**  
**17K0304-10 (Water)**

**Metals and Metallic Compounds**

Method: EPA 200.8  
Instrument: ICPMS2

Sampled: 11/14/2017 11:50  
Analyzed: 30-Nov-2017 16:06

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO<sub>3</sub> matrix 5x  
Preparation Batch: BFK0730 Sample Size: 100 mL  
Prepared: 29-Nov-2017 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0000400	<b>0.000610</b>	mg/L	



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**MW-33C**  
**17K0304-11 (Water)**

**Metals and Metallic Compounds**

Method: EPA 200.8 Sampled: 11/14/2017 12:48  
Instrument: ICPMS2 Analyzed: 30-Nov-2017 16:11

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x  
Preparation Batch: BFK0730 Sample Size: 100 mL  
Prepared: 29-Nov-2017 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0000400	<b>0.00267</b>	mg/L	





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Reported:  
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**MW-15R**  
**17K0304-12 (Water)**

**Metals and Metallic Compounds**

Method: EPA 200.8  
Instrument: ICPMS2

Sampled: 11/14/2017 14:18  
Analyzed: 30-Nov-2017 16:16

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x  
Preparation Batch: BFK0730 Sample Size: 100 mL  
Prepared: 29-Nov-2017 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0000400	<b>0.000240</b>	mg/L	



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Project Number: 04204027.20  
Project Manager: Betsy Sara

Reported:  
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**DUP2**  
**17K0304-13 (Water)**

**Metals and Metallic Compounds**

Method: EPA 200.8  
Instrument: ICPMS2

Sampled: 11/14/2017 14:45  
Analyzed: 30-Nov-2017 16:21

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x  
Preparation Batch: BFK0730 Sample Size: 100 mL  
Prepared: 29-Nov-2017 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0000400	<b>0.000232</b>	mg/L	



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Project Manager: Betsy Sara

Reported:  
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**MW-34C**  
**17K0304-14 (Water)**

**Metals and Metallic Compounds**

Method: EPA 200.8  
Instrument: ICPMS2

Sampled: 11/14/2017 09:25  
Analyzed: 30-Nov-2017 16:26

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x  
Preparation Batch: BFK0730 Sample Size: 100 mL  
Prepared: 29-Nov-2017 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0000400	<b>0.0133</b>	mg/L	



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Project Manager: Betsy Sara

Reported:  
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**MW-34A**  
**17K0304-15 (Water)**

**Metals and Metallic Compounds**

Method: EPA 200.8  
Instrument: ICPMS2

Sampled: 11/14/2017 10:15  
Analyzed: 30-Nov-2017 18:21

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO<sub>3</sub> matrix 5x  
Preparation Batch: BFK0730 Sample Size: 100 mL  
Prepared: 29-Nov-2017 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0000400	<b>0.000442</b>	mg/L	



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Project Number: 04204027.20  
Project Manager: Betsy Sara

Reported:  
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**DUPI**  
**17K0304-16 (Water)**

**Metals and Metallic Compounds**

Method: EPA 200.8  
Instrument: ICPMS2

Sampled: 11/14/2017 10:25  
Analyzed: 30-Nov-2017 18:26

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x  
Preparation Batch: BFK0730 Sample Size: 100 mL  
Prepared: 29-Nov-2017 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0000400	<b>0.000458</b>	mg/L	



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**MW-35**  
**17K0304-17 (Water)**

**Metals and Metallic Compounds**

Method: EPA 200.8  
Instrument: ICPMS2

Sampled: 11/15/2017 09:25  
Analyzed: 30-Nov-2017 18:31

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x  
Preparation Batch: BFK0730 Sample Size: 100 mL  
Prepared: 29-Nov-2017 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0000400	<b>0.000107</b>	mg/L	



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Project Manager: Betsy Sara

Reported:  
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**MW-32**  
**17K0304-18 (Water)**

**Metals and Metallic Compounds**

Method: EPA 200.8  
Instrument: ICPMS2

Sampled: 11/15/2017 10:46  
Analyzed: 30-Nov-2017 18:35

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x  
Preparation Batch: BFK0730 Sample Size: 100 mL  
Prepared: 29-Nov-2017 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0000400	<b>0.00974</b>	mg/L	



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Reported:  
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**Metals and Metallic Compounds - Quality Control**

**Batch BFK0730 - RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x**

Instrument: ICPMS2 Analyst: CC

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Blank (BFK0730-BLK1)</b>						Prepared: 29-Nov-2017 Analyzed: 30-Nov-2017 16:51					
Arsenic	75a	ND	0.0000400	mg/L							U
<b>LCS (BFK0730-BS1)</b>						Prepared: 29-Nov-2017 Analyzed: 30-Nov-2017 17:37					
Arsenic	75a	0.00503	0.0000400	mg/L	0.00500		101	80-120			





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**Certified Analyses included in this Report**

Analyte	Certifications
<b>EPA 200.8 in Water</b>	
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Arsenic-75b	NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	UST-033	05/11/2018
CALAP	California Department of Public Health CAELAP	2748	02/28/2018
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/07/2019
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006	05/11/2018
WADOE	WA Dept of Ecology	C558	06/30/2018
WA-DW	Ecology - Drinking Water	C558	06/30/2018



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Project: OVSL  
Project Number: 04204027.20  
Project Manager: Betsy Sara

Reported:  
01-Dec-2017 15:01

### Notes and Definitions

- U This analyte is not detected above the applicable reporting or detection limit.
- J Estimated concentration value detected below the reporting limit.
- D The reported value is from a dilution
- B This analyte was detected in the method blank.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- [2C] Indicates this result was quantified on the second column on a dual column analysis.

## ANALYTICAL REPORT

Job Number: 280-103734-1

Job Description: WA02|Olympic View Sanitary LF

For:  
Waste Management  
2615 Davis Street  
San Leandro, CA 94577  
Attention: Mr. Patrick Madej



Approved for release.  
Betsy A Sara  
Project Manager II  
12/14/2017 4:41 PM

---

Betsy A Sara, Project Manager II  
4955 Yarrow Street, Arvada, CO, 80002  
(303)736-0189  
betsy.sara@testamericainc.com  
12/14/2017

cc: Mr. Dan Venchiarutti

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

**TestAmerica Laboratories, Inc.**

TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002  
Tel (303) 736-0100 Fax (303) 431-7171 [www.testamericainc.com](http://www.testamericainc.com)



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## CASE NARRATIVE

Client: Waste Management

Project: WA02|Olympic View Sanitary LF

Report Number: 280-103734-1

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

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

### Sample Receiving

The samples were received on 11/17/2017 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.9° C.

### Holding Times

All holding times were within established control limits.

### Trip Blank

N-Butyl alcohol was detected in the trip blank sample at levels below the requested reporting limits. N-Butyl alcohol was not detected in any other samples, and therefore, no corrective action was performed.

### Method Blanks

Hexachlorobutadiene method 8260C was detected in the Method Blank below the project established reporting limits. No corrective action is taken for any values in Method Blanks that are below the requested reporting limits.

All other Method Blank recoveries were within established control limits.

### Laboratory Control Samples (LCS)

The Method 8260C LCS recovery for Methylene Chloride was below the lower control limits. All other spike recoveries and quality control indicators, including sample specific surrogate recoveries, were acceptable. Reanalysis was not performed due to holding time limitations.

All other Laboratory Control Samples were within established control limits.

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

The Matrix Spikes and Matrix Spike Duplicates performed on samples from another job exhibited MS/MSD surrogate recoveries of Dibromofluoromethane outside control limits. Because the corresponding Matrix Spike and Matrix Spike Duplicate target compound recoveries, Laboratory Control Sample, and Method Blank sample were within control limits, this anomaly is considered to be due to matrix interference and no corrective action was taken.

The Matrix Spikes and Matrix Spike Duplicates performed on samples from other clients exhibited recoveries outside control limits for multiple Method 8260C spike compounds. Because the corresponding Laboratory Control Samples and the Method Blank samples were within control limits, these anomalies may be due to matrix interference and no corrective action was taken.

The Matrix Spikes and Matrix Spike Duplicates performed on samples from other clients exhibited recoveries outside control limits for Chemical Oxygen Demand (COD) Method 410.4. Because the corresponding Laboratory Control Samples and the Method Blank samples were within control limits, these anomalies may be due to matrix interference and no corrective action was taken.

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

### Sample Duplicate

All duplicate samples were within established control limits.

## Organics

The analytes Acrolein, Acrylonitrile and 2-chloroethyl vinyl ether cannot be reliably quantitated in acid preserved samples, therefore, the reporting limits for the analytes Acrolein, Acrylonitrile and 2-chloroethyl vinyl ether is not reliable or defensible.

The samples OBWL-TD and L-INF were analyzed at dilutions for Method 8260C SIM due to foaming at the time of purge and/or matrix issues. The reporting limits have been adjusted accordingly.

The samples OBWL-TD and L-INF were analyzed at dilutions for Method 8260C due to foaming at the time of purge and/or matrix issues. The reporting limits have been adjusted accordingly.

The method 8260C results reported for the following sample do not concur with results previously reported for this site: L-INF. Reanalysis was performed, and the results confirmed.

The Method 8260C Continuing Calibration Verification (CCV) standard was above the percent difference values for several analytes. Because the data are considered to be biased high and no target compounds were detected in the associated samples, corrective action was deemed unnecessary. Hexachlorobutadiene was outside criteria, low biased; 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.

## General Comments

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

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

## EXECUTIVE SUMMARY - Detections

Client: Waste Management

Job Number: 280-103734-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-103734-1</b>	<b>OBWL-TD</b>					
2-Butanone (MEK)		100		40	ug/L	8260C
Acetone		270		40	ug/L	8260C
Butyl alcohol, tert-		380		40	ug/L	8260C
Tetrahydrofuran		120		20	ug/L	8260C
Toluene		2.1	J	4.0	ug/L	8260C
Vinyl chloride		0.013	J	0.040	ug/L	8260C SIM
Specific Conductivity		4818			umhos/cm	Field Sampling
Dissolved Oxygen		5.47			mg/L	Field Sampling
eH		490.9			millivolts	Field Sampling
Turbidity		6.02			NTU	Field Sampling
Temperature		10.40			Degrees C	Field Sampling
pH		1.97			SU	Field Sampling
Chloride		1.8		1.0	mg/L	300.0
Sulfate		860		10	mg/L	300.0
Ammonia (as N)		8.2		0.030	mg/L	350.1
Nitrate/Nitrite		1.6		0.050	mg/L	353.2
Chemical Oxygen Demand (COD)		40		10	mg/L	410.4
Total Dissolved Solids (TDS)		540		20	mg/L	SM 2540C
Total Organic Carbon - Average		13		1.0	mg/L	SM 5310B
<b><i>Dissolved</i></b>						
Calcium, Dissolved		32		0.040	mg/L	6010D
Cobalt, Dissolved		0.0089		0.0030	mg/L	6010D
Iron, Dissolved		2.6		0.060	mg/L	6010D
Magnesium, Dissolved		11		0.050	mg/L	6010D
Potassium, Dissolved		0.88	J	1.0	mg/L	6010D
Sodium, Dissolved		2.7		1.0	mg/L	6010D
Antimony, Dissolved		0.033		0.0010	mg/L	6020B
Barium, Dissolved		0.037		0.0010	mg/L	6020B
Cadmium, Dissolved		0.00047		0.00020	mg/L	6020B
Chromium, Dissolved		0.14		0.0030	mg/L	6020B
Copper, Dissolved		0.20		0.0020	mg/L	6020B
Lead, Dissolved		0.0018		0.0010	mg/L	6020B
Manganese, Dissolved		0.35		0.0010	mg/L	6020B
Nickel, Dissolved		0.39		0.0040	mg/L	6020B
Vanadium, Dissolved		0.013		0.0020	mg/L	6020B
Zinc, Dissolved		0.63		0.0050	mg/L	6020B

## EXECUTIVE SUMMARY - Detections

Client: Waste Management

Job Number: 280-103734-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-103734-2</b>	<b>L-INF</b>					
Vinyl chloride		0.022		0.020	ug/L	8260B SIM
Butyl alcohol, tert-		240		50	ug/L	8260C
Tetrahydrofuran		75		25	ug/L	8260C
Vinyl chloride		0.037	J	0.10	ug/L	8260C SIM
Specific Conductivity		4588			umhos/cm	Field Sampling
Dissolved Oxygen		1.56			mg/L	Field Sampling
eH		93.0			millivolts	Field Sampling
Turbidity		28.02			NTU	Field Sampling
Temperature		11.45			Degrees C	Field Sampling
pH		7.28			SU	Field Sampling
Chloride		620		10	mg/L	300.0
Sulfate		240		2.0	mg/L	300.0
Ammonia (as N)		2.7		0.030	mg/L	350.1
Chemical Oxygen Demand (COD)		260		20	mg/L	410.4
Alkalinity, Total (As CaCO3)		1400		5.0	mg/L	SM 2320B
Alkalinity, Bicarbonate (As CaCO3)		1400		5.0	mg/L	SM 2320B
Total Dissolved Solids (TDS)		2200		20	mg/L	SM 2540C
Total Organic Carbon - Average		90		2.5	mg/L	SM 5310B
<b><i>Dissolved</i></b>						
Calcium, Dissolved		130		0.040	mg/L	6010D
Cobalt, Dissolved		0.0060		0.0030	mg/L	6010D
Iron, Dissolved		1.1		0.060	mg/L	6010D
Magnesium, Dissolved		72		0.050	mg/L	6010D
Potassium, Dissolved		74		1.0	mg/L	6010D
Sodium, Dissolved		570		1.0	mg/L	6010D
Antimony, Dissolved		0.00045	J	0.0010	mg/L	6020B
Barium, Dissolved		0.16		0.0010	mg/L	6020B
Chromium, Dissolved		0.0049		0.0030	mg/L	6020B
Manganese, Dissolved		1.9		0.0010	mg/L	6020B
Nickel, Dissolved		0.050		0.0040	mg/L	6020B
Vanadium, Dissolved		0.0050		0.0020	mg/L	6020B
Zinc, Dissolved		0.0029	J	0.0050	mg/L	6020B
<b>280-103734-3TB</b>	<b>TRIP BLANK</b>					
Butyl alcohol, n-		26	J	40	ug/L	8260C



## METHOD SUMMARY

Client: Waste Management

Job Number: 280-103734-1

Description	Lab Location	Method	Preparation Method
<b>Matrix: Water</b>			
Volatile Organic Compounds (GC/MS)	TAL DEN	SW846 8260B SIM	
Purge and Trap	TAL DEN		SW846 5030B
Metals (ICP)	TAL DEN	SW846 6010D	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Metals (ICP/MS)	TAL DEN	SW846 6020B	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Anions, Ion Chromatography	TAL DEN	MCAWW 300.0	
Nitrogen, Ammonia	TAL DEN	MCAWW 350.1	
Nitrogen, Nitrate-Nitrite	TAL DEN	MCAWW 353.2	
COD	TAL DEN	MCAWW 410.4	
Alkalinity	TAL DEN	SM SM 2320B	
Solids, Total Dissolved (TDS)	TAL DEN	SM SM 2540C	
Organic Carbon, Total (TOC)	TAL DEN	SM SM 5310B	
Field Sampling	TAL DEN	EPA Field Sampling	
Volatile Organic Compounds by GC/MS	TAL BUF	SW846 8260C	
Purge and Trap	TAL BUF		SW846 5030C
Volatile Organic Compounds (GC/MS)	TAL BUF	SW846 8260C SIM	
Purge and Trap	TAL BUF		SW846 5030C

### Lab References:

TAL BUF = TestAmerica Buffalo

TAL DEN = TestAmerica Denver

### Method 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.

## METHOD / ANALYST SUMMARY

Client: Waste Management

Job Number: 280-103734-1

<b>Method</b>	<b>Analyst</b>	<b>Analyst ID</b>
SW846 8260B SIM	Moan, Matthew R	MRM
SW846 8260C	Nowak, Kate-Lynn M	KMN
SW846 8260C SIM	Farrell, Ryan J	RJF
SW846 6010D	Lackey, Cara M	CML
SW846 6020B	Trudell, Lynn-Anne M	LMT
EPA Field Sampling	Sabsin, Chanchai	CS
MCAWW 300.0	Lehman, Jeffrey M	JML
MCAWW 350.1	Moore, Kevin A	KAM
MCAWW 353.2	Cherry, Scott V	SVC
MCAWW 410.4	Jewell, Connie C	CCJ
SM SM 2320B	Duplin, Alysha 1	A1D
SM SM 2540C	Pedrick, Joshua A	JAP
SM SM 5310B	Jewell, Connie C	CCJ

# SAMPLE SUMMARY

Client: Waste Management

Job Number: 280-103734-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
280-103734-1	OBWL-TD	Water	11/15/2017 1140	11/17/2017 0900
280-103734-2	L-INF	Water	11/15/2017 1245	11/17/2017 0900
280-103734-3TB	TRIP BLANK	Water	11/15/2017 0000	11/17/2017 0900

# **SAMPLE RESULTS**

# Analytical Data

Client: Waste Management

Job Number: 280-103734-1

**Client Sample ID: OBWL-TD**

Lab Sample ID: 280-103734-1

Date Sampled: 11/15/2017 1140

Client Matrix: Water

Date Received: 11/17/2017 0900

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## 8260B SIM Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B SIM	Analysis Batch: 280-396831	Instrument ID: VMS_E
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: E5861.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 11/28/2017 2152		Final Weight/Volume: 20 mL
Prep Date: 11/28/2017 2152		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.018	0.020

Surrogate	%Rec	Qualifier	Acceptance Limits
Dibromofluoromethane (Surr)	91		77 - 120

# Analytical Data

Client: Waste Management

Job Number: 280-103734-1

**Client Sample ID: L-INF**

Lab Sample ID: 280-103734-2

Date Sampled: 11/15/2017 1245

Client Matrix: Water

Date Received: 11/17/2017 0900

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## 8260B SIM Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B SIM	Analysis Batch: 280-396831	Instrument ID: VMS_E
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: E5862.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 11/28/2017 2210		Final Weight/Volume: 20 mL
Prep Date: 11/28/2017 2210		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.022		0.018	0.020
Surrogate	%Rec	Qualifier	Acceptance Limits	
Dibromofluoromethane (Surr)	93		77 - 120	

# Analytical Data

Client: Waste Management

Job Number: 280-103734-1

**Client Sample ID: TRIP BLANK**

Lab Sample ID: 280-103734-3TB

Date Sampled: 11/15/2017 0000

Client Matrix: Water

Date Received: 11/17/2017 0900

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## 8260B SIM Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B SIM	Analysis Batch: 280-396651	Instrument ID: VMS_E
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: E5806.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 11/28/2017 0210		Final Weight/Volume: 20 mL
Prep Date: 11/28/2017 0210		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.018	0.020
Surrogate	%Rec	Qualifier	Acceptance Limits	
Dibromofluoromethane (Surr)	93		77 - 120	

# Analytical Data

Client: Waste Management

Job Number: 280-103734-1

**Client Sample ID: OBWL-TD**

Lab Sample ID: 280-103734-1

Date Sampled: 11/15/2017 1140

Client Matrix: Water

Date Received: 11/17/2017 0900

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388512	Instrument ID: HP5973P
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: 94349P.D
Dilution: 4.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/21/2017 1217		Final Weight/Volume: 5 mL
Prep Date: 11/21/2017 1217		

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		1.4	4.0
1,1,1-Trichloroethane	ND		3.3	4.0
1,1,2,2-Tetrachloroethane	ND		0.84	4.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.2	4.0
1,1,2-Trichloroethane	ND		0.92	4.0
1,1-Dichloroethane	ND		1.5	4.0
1,1-Dichloroethene	ND		1.2	4.0
1,1-Dichloropropene	ND		2.9	4.0
1,2,3-Trichlorobenzene	ND		1.6	4.0
1,2,3-Trichloropropane	ND		3.6	4.0
1,2,4-Trichlorobenzene	ND		1.6	4.0
1,2,4-Trimethylbenzene	ND		3.0	4.0
1,2-Dibromo-3-Chloropropane	ND		1.6	4.0
1,2-Dibromoethane (EDB)	ND		2.9	4.0
1,2-Dichlorobenzene	ND		3.2	4.0
1,2-Dichloroethane	ND		0.84	4.0
1,2-Dichloroethene, Total	ND		3.2	8.0
1,2-Dichloropropane	ND		2.9	4.0
1,3,5-Trichlorobenzene	ND		0.92	4.0
1,3,5-Trimethylbenzene	ND		3.1	4.0
1,3-Dichlorobenzene	ND		3.1	4.0
1,3-Dichloropropane	ND		3.0	4.0
1,4-Dichlorobenzene	ND		3.4	4.0
1,4-Dioxane	ND		37	160
2,2-Dichloropropane	ND		1.6	4.0
2-Butanone (MEK)	100		5.3	40
2-Chloroethyl vinyl ether	ND		3.8	20
2-Hexanone	ND		5.0	20
4-Methyl-2-pentanone (MIBK)	ND		8.4	20
Acetone	270		12	40
Acetonitrile	ND		20	60
Acrolein	ND		3.6	80
Acrylonitrile	ND		3.3	20
Benzene	ND		1.6	4.0
Bromobenzene	ND		3.2	4.0
Bromochloromethane	ND		3.5	4.0
Bromodichloromethane	ND		1.6	4.0
Bromoform	ND		1.0	4.0
Bromomethane	ND		2.8	4.0
Butyl alcohol, n-	ND		35	160
Butyl alcohol, tert-	380		13	40
Carbon disulfide	ND		0.76	4.0
Carbon tetrachloride	ND		1.1	4.0
Chlorobenzene	ND		3.0	4.0
Chlorodifluoromethane	ND		1.0	4.0
Chloroethane	ND		1.3	4.0



# Analytical Data

Client: Waste Management

Job Number: 280-103734-1

**Client Sample ID: OBWL-TD**

Lab Sample ID: 280-103734-1

Date Sampled: 11/15/2017 1140

Client Matrix: Water

Date Received: 11/17/2017 0900

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-388512	Instrument ID:	HP5973P
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	94349P.D
Dilution:	4.0			Initial Weight/Volume:	5 mL
Analysis Date:	11/21/2017 1217			Final Weight/Volume:	5 mL
Prep Date:	11/21/2017 1217				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloroform	ND		1.4	4.0
Chloromethane	ND		1.4	4.0
cis-1,2-Dichloroethene	ND		3.2	4.0
cis-1,3-Dichloropropene	ND		1.4	4.0
Cyclohexane	ND		0.72	4.0
Dibromochloromethane	ND		1.3	4.0
Dibromomethane	ND		1.6	4.0
Dichlorodifluoromethane	ND		2.7	4.0
Dichlorofluoromethane	ND		1.4	4.0
Ethyl acetate	ND		2.6	4.0
Ethyl ether	ND		2.9	4.0
Ethyl tert-butyl ether	ND		1.2	4.0
Ethylbenzene	ND		3.0	4.0
Hexachlorobutadiene	ND		1.1	4.0
Hexane	ND		1.6	40
Iodomethane	ND		1.2	4.0
Isobutanol	ND		19	100
Isopropyl ether	ND		2.4	4.0
Isopropylbenzene	ND		3.2	4.0
Methacrylonitrile	ND		2.8	20
Methyl acetate	ND		5.2	10
Methyl tert-butyl ether	ND		0.64	4.0
Methylcyclohexane	ND		0.64	4.0
Methylene Chloride	ND	*	1.8	4.0
m-Xylene & p-Xylene	ND		2.6	8.0
Naphthalene	ND		1.7	4.0
n-Butylbenzene	ND		2.6	4.0
N-Propylbenzene	ND		2.8	4.0
o-Chlorotoluene	ND		3.4	4.0
o-Xylene	ND		3.0	4.0
p-Chlorotoluene	ND		3.4	4.0
p-Cymene	ND		1.2	4.0
sec-Butylbenzene	ND		3.0	4.0
Styrene	ND		2.9	4.0
Tert-amyl methyl ether	ND		1.1	4.0
tert-Butylbenzene	ND		3.2	4.0
Tetrachloroethene	ND		1.4	4.0
Tetrahydrofuran	120		5.0	20
Toluene	2.1	J	2.0	4.0
trans-1,2-Dichloroethene	ND		3.6	4.0
trans-1,3-Dichloropropene	ND		1.5	4.0
trans-1,4-Dichloro-2-butene	ND		0.88	4.0
Trichloroethene	ND		1.8	4.0
Trichlorofluoromethane	ND		3.5	4.0
Vinyl acetate	ND		3.4	20
Vinyl chloride	ND		3.6	4.0

# Analytical Data

Client: Waste Management

Job Number: 280-103734-1

**Client Sample ID: OBWL-TD**

Lab Sample ID: 280-103734-1

Date Sampled: 11/15/2017 1140

Client Matrix: Water

Date Received: 11/17/2017 0900

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## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388512	Instrument ID: HP5973P
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: 94349P.D
Dilution: 4.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/21/2017 1217		Final Weight/Volume: 5 mL
Prep Date: 11/21/2017 1217		

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	95		77 - 120
4-Bromofluorobenzene (Surr)	105		73 - 120
Toluene-d8 (Surr)	107		80 - 120

## Analytical Data

Client: Waste Management

Job Number: 280-103734-1

**Client Sample ID: OBWL-TD**

Lab Sample ID: 280-103734-1

Date Sampled: 11/15/2017 1140

Client Matrix: Water

Date Received: 11/17/2017 0900

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### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 480-388512

Instrument ID: HP5973P

Prep Method: 5030C

Prep Batch: N/A

Lab File ID: 94349P.D

Dilution: 4.0

Initial Weight/Volume: 5 mL

Analysis Date: 11/21/2017 1217

Final Weight/Volume: 5 mL

Prep Date: 11/21/2017 1217

### Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
67-72-1	Hexachloroethane TIC	ND	

# Analytical Data

Client: Waste Management

Job Number: 280-103734-1

**Client Sample ID: L-INF**

Lab Sample ID: 280-103734-2

Date Sampled: 11/15/2017 1245

Client Matrix: Water

Date Received: 11/17/2017 0900

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388512	Instrument ID: HP5973P
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: 94350P.D
Dilution: 5.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/21/2017 1245		Final Weight/Volume: 5 mL
Prep Date: 11/21/2017 1245		

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		1.8	5.0
1,1,1-Trichloroethane	ND		4.1	5.0
1,1,2,2-Tetrachloroethane	ND		1.1	5.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.6	5.0
1,1,2-Trichloroethane	ND		1.2	5.0
1,1-Dichloroethane	ND		1.9	5.0
1,1-Dichloroethene	ND		1.5	5.0
1,1-Dichloropropene	ND		3.6	5.0
1,2,3-Trichlorobenzene	ND		2.1	5.0
1,2,3-Trichloropropane	ND		4.5	5.0
1,2,4-Trichlorobenzene	ND		2.1	5.0
1,2,4-Trimethylbenzene	ND		3.8	5.0
1,2-Dibromo-3-Chloropropane	ND		2.0	5.0
1,2-Dibromoethane (EDB)	ND		3.7	5.0
1,2-Dichlorobenzene	ND		4.0	5.0
1,2-Dichloroethane	ND		1.1	5.0
1,2-Dichloroethene, Total	ND		4.1	10
1,2-Dichloropropane	ND		3.6	5.0
1,3,5-Trichlorobenzene	ND		1.2	5.0
1,3,5-Trimethylbenzene	ND		3.9	5.0
1,3-Dichlorobenzene	ND		3.9	5.0
1,3-Dichloropropane	ND		3.8	5.0
1,4-Dichlorobenzene	ND		4.2	5.0
1,4-Dioxane	ND		47	200
2,2-Dichloropropane	ND		2.0	5.0
2-Butanone (MEK)	ND		6.6	50
2-Chloroethyl vinyl ether	ND		4.8	25
2-Hexanone	ND		6.2	25
4-Methyl-2-pentanone (MIBK)	ND		11	25
Acetone	ND		15	50
Acetonitrile	ND		25	75
Acrolein	ND		4.6	100
Acrylonitrile	ND		4.2	25
Benzene	ND		2.1	5.0
Bromobenzene	ND		4.0	5.0
Bromochloromethane	ND		4.4	5.0
Bromodichloromethane	ND		2.0	5.0
Bromoform	ND		1.3	5.0
Bromomethane	ND		3.5	5.0
Butyl alcohol, n-	ND		44	200
Butyl alcohol, tert-	240		17	50
Carbon disulfide	ND		0.95	5.0
Carbon tetrachloride	ND		1.4	5.0
Chlorobenzene	ND		3.8	5.0
Chlorodifluoromethane	ND		1.3	5.0
Chloroethane	ND		1.6	5.0

## Analytical Data

Client: Waste Management

Job Number: 280-103734-1

**Client Sample ID: L-INF**

Lab Sample ID: 280-103734-2

Date Sampled: 11/15/2017 1245

Client Matrix: Water

Date Received: 11/17/2017 0900

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388512	Instrument ID: HP5973P
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: 94350P.D
Dilution: 5.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/21/2017 1245		Final Weight/Volume: 5 mL
Prep Date: 11/21/2017 1245		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloroform	ND		1.7	5.0
Chloromethane	ND		1.8	5.0
cis-1,2-Dichloroethene	ND		4.1	5.0
cis-1,3-Dichloropropene	ND		1.8	5.0
Cyclohexane	ND		0.90	5.0
Dibromochloromethane	ND		1.6	5.0
Dibromomethane	ND		2.1	5.0
Dichlorodifluoromethane	ND		3.4	5.0
Dichlorofluoromethane	ND		1.7	5.0
Ethyl acetate	ND		3.3	5.0
Ethyl ether	ND		3.6	5.0
Ethyl tert-butyl ether	ND		1.5	5.0
Ethylbenzene	ND		3.7	5.0
Hexachlorobutadiene	ND		1.4	5.0
Hexane	ND		2.0	50
Iodomethane	ND		1.5	5.0
Isobutanol	ND		24	130
Isopropyl ether	ND		3.0	5.0
Isopropylbenzene	ND		4.0	5.0
Methacrylonitrile	ND		3.5	25
Methyl acetate	ND		6.5	13
Methyl tert-butyl ether	ND		0.80	5.0
Methylcyclohexane	ND		0.80	5.0
Methylene Chloride	ND	*	2.2	5.0
m-Xylene & p-Xylene	ND		3.3	10
Naphthalene	ND		2.2	5.0
n-Butylbenzene	ND		3.2	5.0
N-Propylbenzene	ND		3.5	5.0
o-Chlorotoluene	ND		4.3	5.0
o-Xylene	ND		3.8	5.0
p-Chlorotoluene	ND		4.2	5.0
p-Cymene	ND		1.6	5.0
sec-Butylbenzene	ND		3.8	5.0
Styrene	ND		3.7	5.0
Tert-amyl methyl ether	ND		1.4	5.0
tert-Butylbenzene	ND		4.1	5.0
Tetrachloroethene	ND		1.8	5.0
Tetrahydrofuran	75		6.3	25
Toluene	ND		2.6	5.0
trans-1,2-Dichloroethene	ND		4.5	5.0
trans-1,3-Dichloropropene	ND		1.9	5.0
trans-1,4-Dichloro-2-butene	ND		1.1	5.0
Trichloroethene	ND		2.3	5.0
Trichlorofluoromethane	ND		4.4	5.0
Vinyl acetate	ND		4.3	25
Vinyl chloride	ND		4.5	5.0

# Analytical Data

Client: Waste Management

Job Number: 280-103734-1

**Client Sample ID: L-INF**

Lab Sample ID: 280-103734-2

Date Sampled: 11/15/2017 1245

Client Matrix: Water

Date Received: 11/17/2017 0900

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## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388512	Instrument ID: HP5973P
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: 94350P.D
Dilution: 5.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/21/2017 1245		Final Weight/Volume: 5 mL
Prep Date: 11/21/2017 1245		

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	89		77 - 120
4-Bromofluorobenzene (Surr)	102		73 - 120
Toluene-d8 (Surr)	103		80 - 120

## Analytical Data

Client: Waste Management

Job Number: 280-103734-1

**Client Sample ID: L-INF**

Lab Sample ID: 280-103734-2

Date Sampled: 11/15/2017 1245

Client Matrix: Water

Date Received: 11/17/2017 0900

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### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 480-388512

Instrument ID: HP5973P

Prep Method: 5030C

Prep Batch: N/A

Lab File ID: 94350P.D

Dilution: 5.0

Initial Weight/Volume: 5 mL

Analysis Date: 11/21/2017 1245

Final Weight/Volume: 5 mL

Prep Date: 11/21/2017 1245

### Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
67-72-1	Hexachloroethane TIC	ND	

# Analytical Data

Client: Waste Management

Job Number: 280-103734-1

**Client Sample ID: TRIP BLANK**

Lab Sample ID: 280-103734-3TB

Date Sampled: 11/15/2017 0000

Client Matrix: Water

Date Received: 11/17/2017 0900

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388512	Instrument ID: HP5973P
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: 94351P.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/21/2017 1312		Final Weight/Volume: 5 mL
Prep Date: 11/21/2017 1312		

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.35	1.0
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,1-Dichloropropene	ND		0.72	1.0
1,2,3-Trichlorobenzene	ND		0.41	1.0
1,2,3-Trichloropropane	ND		0.89	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2,4-Trimethylbenzene	ND		0.75	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane (EDB)	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloroethene, Total	ND		0.81	2.0
1,2-Dichloropropane	ND		0.72	1.0
1,3,5-Trichlorobenzene	ND		0.23	1.0
1,3,5-Trimethylbenzene	ND		0.77	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,3-Dichloropropane	ND		0.75	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
1,4-Dioxane	ND		9.3	40
2,2-Dichloropropane	ND		0.40	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chloroethyl vinyl ether	ND		0.96	5.0
2-Hexanone	ND		1.2	5.0
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Acetonitrile	ND		4.9	15
Acrolein	ND		0.91	20
Acrylonitrile	ND		0.83	5.0
Benzene	ND		0.41	1.0
Bromobenzene	ND		0.80	1.0
Bromochloromethane	ND		0.87	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Butyl alcohol, n-	26	J	8.9	40
Butyl alcohol, tert-	ND		3.3	10
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Chlorodifluoromethane	ND		0.26	1.0
Chloroethane	ND		0.32	1.0



# Analytical Data

Client: Waste Management

Job Number: 280-103734-1

**Client Sample ID: TRIP BLANK**

Lab Sample ID: 280-103734-3TB

Date Sampled: 11/15/2017 0000

Client Matrix: Water

Date Received: 11/17/2017 0900

## 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-388512	Instrument ID:	HP5973P
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	94351P.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	11/21/2017 1312			Final Weight/Volume:	5 mL
Prep Date:	11/21/2017 1312				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dibromochloromethane	ND		0.32	1.0
Dibromomethane	ND		0.41	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Dichlorofluoromethane	ND		0.34	1.0
Ethyl acetate	ND		0.66	1.0
Ethyl ether	ND		0.72	1.0
Ethyl tert-butyl ether	ND		0.29	1.0
Ethylbenzene	ND		0.74	1.0
Hexachlorobutadiene	ND		0.28	1.0
Hexane	ND		0.40	10
Iodomethane	ND		0.30	1.0
Isobutanol	ND		4.8	25
Isopropyl ether	ND		0.59	1.0
Isopropylbenzene	ND		0.79	1.0
Methacrylonitrile	ND		0.69	5.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND	*	0.44	1.0
m-Xylene & p-Xylene	ND		0.66	2.0
Naphthalene	ND		0.43	1.0
n-Butylbenzene	ND		0.64	1.0
N-Propylbenzene	ND		0.69	1.0
o-Chlorotoluene	ND		0.86	1.0
o-Xylene	ND		0.76	1.0
p-Chlorotoluene	ND		0.84	1.0
p-Cymene	ND		0.31	1.0
sec-Butylbenzene	ND		0.75	1.0
Styrene	ND		0.73	1.0
Tert-amyl methyl ether	ND		0.27	1.0
tert-Butylbenzene	ND		0.81	1.0
Tetrachloroethene	ND		0.36	1.0
Tetrahydrofuran	ND		1.3	5.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
trans-1,4-Dichloro-2-butene	ND		0.22	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0
Vinyl acetate	ND		0.85	5.0
Vinyl chloride	ND		0.90	1.0

# Analytical Data

Client: Waste Management

Job Number: 280-103734-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 280-103734-3TB

Date Sampled: 11/15/2017 0000

Client Matrix: Water

Date Received: 11/17/2017 0900

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## 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 480-388512	Instrument ID: HP5973P
Prep Method: 5030C	Prep Batch: N/A	Lab File ID: 94351P.D
Dilution: 1.0		Initial Weight/Volume: 5 mL
Analysis Date: 11/21/2017 1312		Final Weight/Volume: 5 mL
Prep Date: 11/21/2017 1312		

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	90		77 - 120
4-Bromofluorobenzene (Surr)	103		73 - 120
Toluene-d8 (Surr)	105		80 - 120

## Analytical Data

Client: Waste Management

Job Number: 280-103734-1

**Client Sample ID: TRIP BLANK**

Lab Sample ID: 280-103734-3TB

Date Sampled: 11/15/2017 0000

Client Matrix: Water

Date Received: 11/17/2017 0900

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### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 480-388512

Instrument ID: HP5973P

Prep Method: 5030C

Prep Batch: N/A

Lab File ID: 94351P.D

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 11/21/2017 1312

Final Weight/Volume: 5 mL

Prep Date: 11/21/2017 1312

### Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
67-72-1	Hexachloroethane TIC	ND	

# Analytical Data

Client: Waste Management

Job Number: 280-103734-1

**Client Sample ID: OBWL-TD**

Lab Sample ID: 280-103734-1

Date Sampled: 11/15/2017 1140

Client Matrix: Water

Date Received: 11/17/2017 0900

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## 8260C SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C SIM	Analysis Batch:	480-389245	Instrument ID:	HP5973J
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	J5001.D
Dilution:	2.0			Initial Weight/Volume:	25 mL
Analysis Date:	11/27/2017 1822			Final Weight/Volume:	25 mL
Prep Date:	11/27/2017 1822				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.013	J	0.0080	0.040

Surrogate	%Rec	Qualifier	Acceptance Limits
Dibromofluoromethane (Surr)	105		50 - 150
TBA-d9 (Surr)	101		50 - 150

# Analytical Data

Client: Waste Management

Job Number: 280-103734-1

**Client Sample ID: L-INF**

Lab Sample ID: 280-103734-2

Date Sampled: 11/15/2017 1245

Client Matrix: Water

Date Received: 11/17/2017 0900

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## 8260C SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C SIM	Analysis Batch:	480-389245	Instrument ID:	HP5973J
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	J5002.D
Dilution:	5.0			Initial Weight/Volume:	25 mL
Analysis Date:	11/27/2017 1847			Final Weight/Volume:	25 mL
Prep Date:	11/27/2017 1847				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.037	J	0.020	0.10
Surrogate	%Rec	Qualifier	Acceptance Limits	
Dibromofluoromethane (Surr)	109		50 - 150	
TBA-d9 (Surr)	114		50 - 150	

# Analytical Data

Client: Waste Management

Job Number: 280-103734-1

**Client Sample ID: OBWL-TD**

Lab Sample ID: 280-103734-1

Date Sampled: 11/15/2017 1140

Client Matrix: Water

Date Received: 11/17/2017 0900

## 6010D Metals (ICP)-Dissolved

Analysis Method: 6010D      Analysis Batch: 280-397056      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-396780      Lab File ID: 51A112917C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/29/2017 2228      Final Weight/Volume: 50 mL  
Prep Date: 11/29/2017 1423

Analyte	Result (mg/L)	Qualifier	MDL	RL
Cobalt, Dissolved	0.0089		0.0012	0.0030
Iron, Dissolved	2.6		0.022	0.060
Potassium, Dissolved	0.88	J	0.24	1.0

Analysis Method: 6010D      Analysis Batch: 280-397251      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-396780      Lab File ID: 51A113017A.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/30/2017 1606      Final Weight/Volume: 50 mL  
Prep Date: 11/29/2017 1423

Analyte	Result (mg/L)	Qualifier	MDL	RL
Calcium, Dissolved	32		0.035	0.040
Magnesium, Dissolved	11		0.011	0.050
Sodium, Dissolved	2.7		0.12	1.0

## 6020B Metals (ICP/MS)-Dissolved

Analysis Method: 6020B      Analysis Batch: 280-397048      Instrument ID: MT\_077  
Prep Method: 3005A      Prep Batch: 280-396777      Lab File ID: 201SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/29/2017 2341      Final Weight/Volume: 50 mL  
Prep Date: 11/29/2017 1423

Analyte	Result (mg/L)	Qualifier	MDL	RL
Antimony, Dissolved	0.033		0.00040	0.0010
Barium, Dissolved	0.037		0.00029	0.0010
Beryllium, Dissolved	ND		0.000080	0.0010
Cadmium, Dissolved	0.00047		0.00027	0.00020
Chromium, Dissolved	0.14		0.00050	0.0030
Copper, Dissolved	0.20		0.00056	0.0020
Lead, Dissolved	0.0018		0.00018	0.0010
Manganese, Dissolved	0.35		0.00031	0.0010
Nickel, Dissolved	0.39		0.00030	0.0040
Selenium, Dissolved	ND		0.00070	0.0010
Silver, Dissolved	ND		0.000033	0.0020
Thallium, Dissolved	ND		0.000050	0.0010
Vanadium, Dissolved	0.013		0.00050	0.0020
Zinc, Dissolved	0.63		0.0020	0.0050

# Analytical Data

Client: Waste Management

Job Number: 280-103734-1

**Client Sample ID: L-INF**

Lab Sample ID: 280-103734-2

Date Sampled: 11/15/2017 1245

Client Matrix: Water

Date Received: 11/17/2017 0900

## 6010D Metals (ICP)-Dissolved

Analysis Method: 6010D      Analysis Batch: 280-397056      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-396780      Lab File ID: 51A112917C.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/29/2017 2231      Final Weight/Volume: 50 mL  
Prep Date: 11/29/2017 1423

Analyte	Result (mg/L)	Qualifier	MDL	RL
Cobalt, Dissolved	0.0060		0.0012	0.0030
Iron, Dissolved	1.1		0.022	0.060
Potassium, Dissolved	74		0.24	1.0

Analysis Method: 6010D      Analysis Batch: 280-397251      Instrument ID: MT\_051  
Prep Method: 3005A      Prep Batch: 280-396780      Lab File ID: 51A113017A.csv  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/30/2017 1609      Final Weight/Volume: 50 mL  
Prep Date: 11/29/2017 1423

Analyte	Result (mg/L)	Qualifier	MDL	RL
Calcium, Dissolved	130		0.035	0.040
Magnesium, Dissolved	72		0.011	0.050
Sodium, Dissolved	570		0.12	1.0

## 6020B Metals (ICP/MS)-Dissolved

Analysis Method: 6020B      Analysis Batch: 280-397048      Instrument ID: MT\_077  
Prep Method: 3005A      Prep Batch: 280-396777      Lab File ID: 202SMPL.d  
Dilution: 1.0      Initial Weight/Volume: 50 mL  
Analysis Date: 11/29/2017 2345      Final Weight/Volume: 50 mL  
Prep Date: 11/29/2017 1423

Analyte	Result (mg/L)	Qualifier	MDL	RL
Antimony, Dissolved	0.00045	J	0.00040	0.0010
Barium, Dissolved	0.16		0.00029	0.0010
Beryllium, Dissolved	ND		0.000080	0.0010
Cadmium, Dissolved	ND		0.00027	0.00020
Chromium, Dissolved	0.0049		0.00050	0.0030
Copper, Dissolved	ND		0.00056	0.0020
Lead, Dissolved	ND		0.00018	0.0010
Manganese, Dissolved	1.9		0.00031	0.0010
Nickel, Dissolved	0.050		0.00030	0.0040
Selenium, Dissolved	ND		0.00070	0.0010
Silver, Dissolved	ND		0.000033	0.0020
Thallium, Dissolved	ND		0.000050	0.0010
Vanadium, Dissolved	0.0050		0.00050	0.0020
Zinc, Dissolved	0.0029	J	0.0020	0.0050

Client: Waste Management

Job Number: 280-103734-1

General Chemistry

Client Sample ID: OBWL-TD

Lab Sample ID: 280-103734-1

Date Sampled: 11/15/2017 1140

Client Matrix: Water

Date Received: 11/17/2017 0900

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Chloride	1.8		mg/L	1.0	1.0	1.0	300.0
	Analysis Batch: 280-398208		Analysis Date: 12/10/2017 1424				
Sulfate	860		mg/L	10	10	10	300.0
	Analysis Batch: 280-398345		Analysis Date: 12/12/2017 1317				
Ammonia (as N)	8.2		mg/L	0.030	0.030	1.0	350.1
	Analysis Batch: 280-397335		Analysis Date: 12/01/2017 1401				
Nitrate/Nitrite	1.6		mg/L	0.050	0.050	1.0	353.2
	Analysis Batch: 280-396846		Analysis Date: 11/28/2017 2004				
Chemical Oxygen Demand (COD)	40		mg/L	10	10	1.0	410.4
	Analysis Batch: 280-397430		Analysis Date: 12/04/2017 1034				
Alkalinity, Total (As CaCO3)	ND		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396376		Analysis Date: 11/22/2017 1323				
Alkalinity, Bicarbonate (As CaCO3)	ND		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396376		Analysis Date: 11/22/2017 1323				
Total Dissolved Solids (TDS)	540		mg/L	20	20	1.0	SM 2540C
	Analysis Batch: 280-395903		Analysis Date: 11/20/2017 1156				
Total Organic Carbon - Average	13		mg/L	1.0	1.0	1.0	SM 5310B
	Analysis Batch: 280-398382		Analysis Date: 12/11/2017 1801				



Client: Waste Management

Job Number: 280-103734-1

General Chemistry

Client Sample ID: L-INF

Lab Sample ID: 280-103734-2

Date Sampled: 11/15/2017 1245

Client Matrix: Water

Date Received: 11/17/2017 0900

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Chloride	620		mg/L	10	10	10	300.0
	Analysis Batch: 280-398268		Analysis Date: 12/11/2017 2334				
Sulfate	240		mg/L	2.0	2.0	2.0	300.0
	Analysis Batch: 280-398208		Analysis Date: 12/10/2017 1442				
Ammonia (as N)	2.7		mg/L	0.030	0.030	1.0	350.1
	Analysis Batch: 280-397335		Analysis Date: 12/01/2017 1403				
Nitrate/Nitrite	ND		mg/L	0.050	0.050	1.0	353.2
	Analysis Batch: 280-396846		Analysis Date: 11/28/2017 2010				
Chemical Oxygen Demand (COD)	260		mg/L	20	20	2.0	410.4
	Analysis Batch: 280-397430		Analysis Date: 12/04/2017 1034				
Alkalinity, Total (As CaCO3)	1400		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396376		Analysis Date: 11/22/2017 1314				
Alkalinity, Bicarbonate (As CaCO3)	1400		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-396376		Analysis Date: 11/22/2017 1314				
Total Dissolved Solids (TDS)	2200		mg/L	20	20	1.0	SM 2540C
	Analysis Batch: 280-395903		Analysis Date: 11/20/2017 1156				
Total Organic Carbon - Average	90		mg/L	2.5	2.5	2.5	SM 5310B
	Analysis Batch: 280-398382		Analysis Date: 12/11/2017 1820				

# Analytical Data

Client: Waste Management

Job Number: 280-103734-1

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## Field Service / Mobile Lab

**Client Sample ID:** OBWL-TD

Lab Sample ID: 280-103734-1

Client Matrix: Water

Date Sampled: 11/15/2017 1140

Date Received: 11/17/2017 0900

Analyte	Result	Qual	Units	Dil	Method	Analysis Batch	Date Analyzed	Date Prepared
Specific Conductivity	4818		umhos/cm	1.0	Field Sampling	280-395824	11/15/2017	1240
Dissolved Oxygen	5.47		mg/L	1.0	Field Sampling	280-395824	11/15/2017	1240
eH	490.9		millivolts	1.0	Field Sampling	280-395824	11/15/2017	1240
Turbidity	6.02		NTU	1.0	Field Sampling	280-395824	11/15/2017	1240
Temperature	10.40		Degrees C	1.0	Field Sampling	280-395824	11/15/2017	1240
pH	1.97		SU	1.0	Field Sampling	280-395824	11/15/2017	1240

# Analytical Data

Client: Waste Management

Job Number: 280-103734-1

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## Field Service / Mobile Lab

**Client Sample ID:** L-INF

Lab Sample ID: 280-103734-2

Client Matrix: Water

Date Sampled: 11/15/2017 1245

Date Received: 11/17/2017 0900

Analyte	Result	Qual	Units	Dil	Method	Analysis Batch	Date Analyzed	Date Prepared
Specific Conductivity	4588		umhos/cm	1.0	Field Sampling	280-395824	11/15/2017	1345
Dissolved Oxygen	1.56		mg/L	1.0	Field Sampling	280-395824	11/15/2017	1345
eH	93.0		millivolts	1.0	Field Sampling	280-395824	11/15/2017	1345
Turbidity	28.02		NTU	1.0	Field Sampling	280-395824	11/15/2017	1345
Temperature	11.45		Degrees C	1.0	Field Sampling	280-395824	11/15/2017	1345
pH	7.28		SU	1.0	Field Sampling	280-395824	11/15/2017	1345

## DATA REPORTING QUALIFIERS

Client: Waste Management

Job Number: 280-103734-1

Lab Section	Qualifier	Description
GC/MS VOA		
	*	LCS or LCSD is outside acceptance limits.
	F1	MS and/or MSD Recovery is outside acceptance limits.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
	X	Surrogate is outside control limits
Metals		
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
General Chemistry		
	F1	MS and/or MSD Recovery is outside acceptance limits.
	4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
	E	Result exceeded calibration range.

# QUALITY CONTROL RESULTS

## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>GC/MS VOA</b>					
<b>Analysis Batch:480-388512</b>					
LCS 480-388512/7	Lab Control Sample	T	Water	8260C	
MB 480-388512/9	Method Blank	T	Water	8260C	
280-103734-1	OBWL-TD	T	Water	8260C	
280-103734-2	L-INF	T	Water	8260C	
280-103734-3TB	TRIP BLANK	T	Water	8260C	
480-127654-D-9 MS	Matrix Spike	T	Water	8260C	
480-127654-D-9 MSD	Matrix Spike Duplicate	T	Water	8260C	
<b>Analysis Batch:480-389245</b>					
LCS 480-389245/6	Lab Control Sample	T	Water	8260C SIM	
LCSD 480-389245/7	Lab Control Sample Duplicate	T	Water	8260C SIM	
MB 480-389245/9	Method Blank	T	Water	8260C SIM	
280-103734-1	OBWL-TD	T	Water	8260C SIM	
280-103734-2	L-INF	T	Water	8260C SIM	
<b>Analysis Batch:280-396651</b>					
LCS 280-396651/6	Lab Control Sample	T	Water	8260B SIM	
MB 280-396651/8	Method Blank	T	Water	8260B SIM	
280-103543-J-1 MS	Matrix Spike	T	Water	8260B SIM	
280-103543-J-1 MSD	Matrix Spike Duplicate	T	Water	8260B SIM	
280-103734-3TB	TRIP BLANK	T	Water	8260B SIM	
<b>Analysis Batch:280-396831</b>					
280-103734-1	OBWL-TD	T	Water	8260B SIM	
280-103734-2	L-INF	T	Water	8260B SIM	

**Report Basis**

T = Total

## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Prep Batch: 280-396777</b>					
LCS 280-396777/2-A	Lab Control Sample	R	Water	3005A	
MB 280-396777/1-A	Method Blank	R	Water	3005A	
280-103730-F-1-B MS	Matrix Spike	D	Water	3005A	
280-103730-F-1-C MSD	Matrix Spike Duplicate	D	Water	3005A	
280-103734-1	OBWL-TD	D	Water	3005A	
280-103734-2	L-INF	D	Water	3005A	
<b>Prep Batch: 280-396780</b>					
LCS 280-396780/2-A	Lab Control Sample	R	Water	3005A	
MB 280-396780/1-A	Method Blank	R	Water	3005A	
280-103491-A-7-E MS	Matrix Spike	D	Water	3005A	
280-103491-A-7-F MSD	Matrix Spike Duplicate	D	Water	3005A	
280-103734-1	OBWL-TD	D	Water	3005A	
280-103734-2	L-INF	D	Water	3005A	
<b>Analysis Batch:280-397048</b>					
LCS 280-396777/2-A	Lab Control Sample	R	Water	6020B	280-396777
MB 280-396777/1-A	Method Blank	R	Water	6020B	280-396777
280-103730-F-1-B MS	Matrix Spike	D	Water	6020B	280-396777
280-103730-F-1-C MSD	Matrix Spike Duplicate	D	Water	6020B	280-396777
280-103734-1	OBWL-TD	D	Water	6020B	280-396777
280-103734-2	L-INF	D	Water	6020B	280-396777
<b>Analysis Batch:280-397056</b>					
LCS 280-396780/2-A	Lab Control Sample	R	Water	6010D	280-396780
MB 280-396780/1-A	Method Blank	R	Water	6010D	280-396780
280-103491-A-7-E MS	Matrix Spike	D	Water	6010D	280-396780
280-103491-A-7-F MSD	Matrix Spike Duplicate	D	Water	6010D	280-396780
280-103734-1	OBWL-TD	D	Water	6010D	280-396780
280-103734-2	L-INF	D	Water	6010D	280-396780
<b>Analysis Batch:280-397251</b>					
LCS 280-396780/2-A	Lab Control Sample	R	Water	6010D	280-396780
MB 280-396780/1-A	Method Blank	R	Water	6010D	280-396780
280-103491-A-7-E MS	Matrix Spike	D	Water	6010D	280-396780
280-103491-A-7-F MSD	Matrix Spike Duplicate	D	Water	6010D	280-396780
280-103734-1	OBWL-TD	D	Water	6010D	280-396780
280-103734-2	L-INF	D	Water	6010D	280-396780

**Report Basis**

D = Dissolved

R = Total Recoverable

## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Field Service / Mobile Lab</b>					
<b>Analysis Batch:280-395824</b>					
280-103734-1	OBWL-TD	T	Water	Field Sampling	
280-103734-2	L-INF	T	Water	Field Sampling	

#### Report Basis

T = Total



## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-395903</b>					
LCS 280-395903/2	Lab Control Sample	T	Water	SM 2540C	
MB 280-395903/1	Method Blank	T	Water	SM 2540C	
280-103730-A-2 DU	Duplicate	T	Water	SM 2540C	
280-103734-1	OBWL-TD	T	Water	SM 2540C	
280-103734-2	L-INF	T	Water	SM 2540C	
<b>Analysis Batch:280-396376</b>					
LCS 280-396376/4	Lab Control Sample	T	Water	SM 2320B	
MB 280-396376/5	Method Blank	T	Water	SM 2320B	
280-103734-1	OBWL-TD	T	Water	SM 2320B	
280-103734-2	L-INF	T	Water	SM 2320B	
280-103734-2DU	Duplicate	T	Water	SM 2320B	
<b>Analysis Batch:280-396846</b>					
LCS 280-396846/65	Lab Control Sample	T	Water	353.2	
MB 280-396846/66	Method Blank	T	Water	353.2	
280-103734-1	OBWL-TD	T	Water	353.2	
280-103734-1MS	Matrix Spike	T	Water	353.2	
280-103734-1MSD	Matrix Spike Duplicate	T	Water	353.2	
280-103734-2	L-INF	T	Water	353.2	
<b>Analysis Batch:280-397335</b>					
LCS 280-397335/18	Lab Control Sample	T	Water	350.1	
LCSD 280-397335/19	Lab Control Sample Duplicate	T	Water	350.1	
MB 280-397335/20	Method Blank	T	Water	350.1	
280-103543-C-1 MS	Matrix Spike	T	Water	350.1	
280-103543-C-1 MSD	Matrix Spike Duplicate	T	Water	350.1	
280-103734-1	OBWL-TD	T	Water	350.1	
280-103734-2	L-INF	T	Water	350.1	
<b>Analysis Batch:280-397430</b>					
LCS 280-397430/3	Lab Control Sample	T	Water	410.4	
LCSD 280-397430/4	Lab Control Sample Duplicate	T	Water	410.4	
MB 280-397430/5	Method Blank	T	Water	410.4	
280-103734-1	OBWL-TD	T	Water	410.4	
280-103734-2	L-INF	T	Water	410.4	
280-103786-B-1 MS	Matrix Spike	T	Water	410.4	
280-103786-B-1 MSD	Matrix Spike Duplicate	T	Water	410.4	

## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-398208</b>					
LCS 280-398208/4	Lab Control Sample	T	Water	300.0	
LCSD 280-398208/5	Lab Control Sample Duplicate	T	Water	300.0	
MB 280-398208/6	Method Blank	T	Water	300.0	
280-103666-A-1 DU	Duplicate	T	Water	300.0	
280-103666-A-1 MS	Matrix Spike	T	Water	300.0	
280-103666-A-1 MSD	Matrix Spike Duplicate	T	Water	300.0	
280-103734-1	OBWL-TD	T	Water	300.0	
280-103734-2	L-INF	T	Water	300.0	
280-103781-B-1 DU	Duplicate	T	Water	300.0	
280-103781-B-1 MS	Matrix Spike	T	Water	300.0	
280-103781-B-1 MSD	Matrix Spike Duplicate	T	Water	300.0	
<b>Analysis Batch:280-398268</b>					
LCS 280-398268/4	Lab Control Sample	T	Water	300.0	
LCSD 280-398268/5	Lab Control Sample Duplicate	T	Water	300.0	
MB 280-398268/6	Method Blank	T	Water	300.0	
280-103639-Q-1 DU	Duplicate	T	Water	300.0	
280-103639-Q-1 MS	Matrix Spike	T	Water	300.0	
280-103639-Q-1 MSD	Matrix Spike Duplicate	T	Water	300.0	
280-103734-2	L-INF	T	Water	300.0	
<b>Analysis Batch:280-398345</b>					
LCS 280-398345/4	Lab Control Sample	T	Water	300.0	
LCSD 280-398345/5	Lab Control Sample Duplicate	T	Water	300.0	
MB 280-398345/6	Method Blank	T	Water	300.0	
280-103734-1	OBWL-TD	T	Water	300.0	
280-103734-1DU	Duplicate	T	Water	300.0	
280-103734-1MS	Matrix Spike	T	Water	300.0	
280-103734-1MSD	Matrix Spike Duplicate	T	Water	300.0	
<b>Analysis Batch:280-398382</b>					
LCS 280-398382/3	Lab Control Sample	T	Water	SM 5310B	
MB 280-398382/4	Method Blank	T	Water	SM 5310B	
280-103653-B-1 MS	Matrix Spike	T	Water	SM 5310B	
280-103653-B-1 MSD	Matrix Spike Duplicate	T	Water	SM 5310B	
280-103734-1	OBWL-TD	T	Water	SM 5310B	
280-103734-2	L-INF	T	Water	SM 5310B	

**Report Basis**

T = Total

Client: Waste Management

Job Number: 280-103734-1

**Surrogate Recovery Report**

**8260B SIM Volatile Organic Compounds (GC/MS)**

**Client Matrix: Water**

Lab Sample ID	Client Sample ID	DBFM %Rec
280-103734-1	OBWL-TD	91
280-103734-2	L-INF	93
280-103734-3	TRIP BLANK	93
MB 280-396651/8		87
LCS 280-396651/6		82
280-103543-J-1 MS		75X
280-103543-J-1 MSD		81

Surrogate	Acceptance Limits
DBFM = Dibromofluoromethane (Surr)	77-120

Client: Waste Management

Job Number: 280-103734-1

**Surrogate Recovery Report**

**8260C Volatile Organic Compounds by GC/MS**

**Client Matrix: Water**

Lab Sample ID	Client Sample ID	DCA %Rec	BFB %Rec	TOL %Rec
280-103734-1	OBWL-TD	95	105	107
280-103734-2	L-INF	89	102	103
280-103734-3	TRIP BLANK	90	103	105
MB 480-388512/9		92	104	105
LCS 480-388512/7		88	105	105
480-127654-D-9 MS		96	107	106
480-127654-D-9 MSD		92	107	106

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	77-120
BFB = 4-Bromofluorobenzene (Surr)	73-120
TOL = Toluene-d8 (Surr)	80-120

Client: Waste Management

Job Number: 280-103734-1

**Surrogate Recovery Report**

**8260C SIM Volatile Organic Compounds (GC/MS)**

**Client Matrix: Water**

Lab Sample ID	Client Sample ID	DBFM %Rec	TBA %Rec
280-103734-1	OBWL-TD	105	101
280-103734-2	L-INF	109	114
MB 480-389245/9		108	103
LCS 480-389245/6		107	132
LCSD 480-389245/7		104	119

Surrogate	Acceptance Limits
DBFM = Dibromofluoromethane (Surr)	50-150
TBA = TBA-d9 (Surr)	50-150

## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Method Blank - Batch: 280-396651**

**Method: 8260B SIM**

**Preparation: 5030B**

Lab Sample ID: MB 280-396651/8	Analysis Batch: 280-396651	Instrument ID: VMS_E
Client Matrix: Water	Prep Batch: N/A	Lab File ID: E5781.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 11/27/2017 1839	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 11/27/2017 1839		
Leach Date: N/A		

Analyte	Result	Qual	MDL	RL
Vinyl chloride	ND		0.018	0.020
Surrogate	% Rec		Acceptance Limits	
Dibromofluoromethane (Surr)	87		77 - 120	

**Lab Control Sample - Batch: 280-396651**

**Method: 8260B SIM**

**Preparation: 5030B**

Lab Sample ID: LCS 280-396651/6	Analysis Batch: 280-396651	Instrument ID: VMS_E
Client Matrix: Water	Prep Batch: N/A	Lab File ID: E5780.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 11/27/2017 1821	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 11/27/2017 1821		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Vinyl chloride	2.00	2.31	116	40 - 144	
Surrogate		% Rec		Acceptance Limits	
Dibromofluoromethane (Surr)		82		77 - 120	

## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396651**

**Method: 8260B SIM  
Preparation: 5030B**

MS Lab Sample ID: 280-103543-J-1 MS	Analysis Batch: 280-396651	Instrument ID: VMS_E
Client Matrix: Water	Prep Batch: N/A	Lab File ID: E5790.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 11/27/2017 2121		Final Weight/Volume: 20 mL
Prep Date: 11/27/2017 2121		20 mL
Leach Date: N/A		

MSD Lab Sample ID: 280-103543-J-1 MSD	Analysis Batch: 280-396651	Instrument ID: VMS_E
Client Matrix: Water	Prep Batch: N/A	Lab File ID: E5791.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 11/27/2017 2139		Final Weight/Volume: 20 mL
Prep Date: 11/27/2017 2139		20 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Vinyl chloride	96	102	40 - 144	6	24		
Surrogate		MS % Rec	MSD % Rec			Acceptance Limits	
Dibromofluoromethane (Surr)		75	X	81		77 - 120	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396651**

**Method: 8260B SIM  
Preparation: 5030B**

MS Lab Sample ID: 280-103543-J-1 MS	Units: ug/L
Client Matrix: Water	
Dilution: 1.0	
Analysis Date: 11/27/2017 2121	
Prep Date: 11/27/2017 2121	
Leach Date: N/A	

MSD Lab Sample ID: 280-103543-J-1 MSD
Client Matrix: Water
Dilution: 1.0
Analysis Date: 11/27/2017 2139
Prep Date: 11/27/2017 2139
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Vinyl chloride	ND	2.00	2.00	1.93	2.04

# Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Method Blank - Batch: 480-388512**

**Method: 8260C  
Preparation: 5030C**

Lab Sample ID: MB 480-388512/9  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/21/2017 1126  
 Prep Date: 11/21/2017 1126  
 Leach Date: N/A

Analysis Batch: 480-388512  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: ug/L

Instrument ID: HP5973P  
 Lab File ID: 94348P.D  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
1,1,1,2-Tetrachloroethane	ND		0.35	1.0
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.31	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,1-Dichloropropene	ND		0.72	1.0
1,2,3-Trichlorobenzene	ND		0.41	1.0
1,2,3-Trichloropropane	ND		0.89	1.0
1,2,4-Trichlorobenzene	ND		0.41	1.0
1,2,4-Trimethylbenzene	ND		0.75	1.0
1,2-Dibromo-3-Chloropropane	ND		0.39	1.0
1,2-Dibromoethane (EDB)	ND		0.73	1.0
1,2-Dichlorobenzene	ND		0.79	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloroethene, Total	ND		0.81	2.0
1,2-Dichloropropane	ND		0.72	1.0
1,3,5-Trichlorobenzene	ND		0.23	1.0
1,3,5-Trimethylbenzene	ND		0.77	1.0
1,3-Dichlorobenzene	ND		0.78	1.0
1,3-Dichloropropane	ND		0.75	1.0
1,4-Dichlorobenzene	ND		0.84	1.0
1,4-Dioxane	ND		9.3	40
2,2-Dichloropropane	ND		0.40	1.0
2-Butanone (MEK)	ND		1.3	10
2-Chloroethyl vinyl ether	ND		0.96	5.0
2-Hexanone	ND		1.2	5.0
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Acetonitrile	ND		4.9	15
Acrolein	ND		0.91	20
Acrylonitrile	ND		0.83	5.0
Benzene	ND		0.41	1.0
Bromobenzene	ND		0.80	1.0
Bromochloromethane	ND		0.87	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Butyl alcohol, n-	ND		8.9	40
Butyl alcohol, tert-	ND		3.3	10
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Chlorodifluoromethane	ND		0.26	1.0



# Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Method Blank - Batch: 480-388512**

**Method: 8260C  
Preparation: 5030C**

Lab Sample ID: MB 480-388512/9  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/21/2017 1126  
Prep Date: 11/21/2017 1126  
Leach Date: N/A

Analysis Batch: 480-388512  
Prep Batch: N/A  
Leach Batch: N/A  
Units: ug/L

Instrument ID: HP5973P  
Lab File ID: 94348P.D  
Initial Weight/Volume: 5 mL  
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Cyclohexane	ND		0.18	1.0
Dibromochloromethane	ND		0.32	1.0
Dibromomethane	ND		0.41	1.0
Dichlorodifluoromethane	ND		0.68	1.0
Dichlorofluoromethane	ND		0.34	1.0
Ethyl acetate	ND		0.66	1.0
Ethyl ether	ND		0.72	1.0
Ethyl tert-butyl ether	ND		0.29	1.0
Ethylbenzene	ND		0.74	1.0
Hexachlorobutadiene	0.461	J	0.28	1.0
Hexane	ND		0.40	10
Iodomethane	ND		0.30	1.0
Isobutanol	ND		4.8	25
Isopropyl ether	ND		0.59	1.0
Isopropylbenzene	ND		0.79	1.0
Methacrylonitrile	ND		0.69	5.0
Methyl acetate	ND		1.3	2.5
Methyl tert-butyl ether	ND		0.16	1.0
Methylcyclohexane	ND		0.16	1.0
Methylene Chloride	ND		0.44	1.0
m-Xylene & p-Xylene	ND		0.66	2.0
Naphthalene	ND		0.43	1.0
n-Butylbenzene	ND		0.64	1.0
N-Propylbenzene	ND		0.69	1.0
o-Chlorotoluene	ND		0.86	1.0
o-Xylene	ND		0.76	1.0
p-Chlorotoluene	ND		0.84	1.0
p-Cymene	ND		0.31	1.0
sec-Butylbenzene	ND		0.75	1.0
Styrene	ND		0.73	1.0
Tert-amyl methyl ether	ND		0.27	1.0
tert-Butylbenzene	ND		0.81	1.0
Tetrachloroethene	ND		0.36	1.0
Tetrahydrofuran	ND		1.3	5.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
trans-1,4-Dichloro-2-butene	ND		0.22	1.0
Trichloroethene	ND		0.46	1.0
Trichlorofluoromethane	ND		0.88	1.0

## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Method Blank - Batch: 480-388512**

**Method: 8260C**  
**Preparation: 5030C**

Lab Sample ID: MB 480-388512/9	Analysis Batch: 480-388512	Instrument ID: HP5973P
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 94348P.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/21/2017 1126	Units: ug/L	Final Weight/Volume: 5 mL
Prep Date: 11/21/2017 1126		
Leach Date: N/A		

Analyte	Result	Qual	MDL	RL
Vinyl acetate	ND		0.85	5.0
Vinyl chloride	ND		0.90	1.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	92	77 - 120
4-Bromofluorobenzene (Surr)	104	73 - 120
Toluene-d8 (Surr)	105	80 - 120

**Method Blank TICs- Batch: 480-388512**

Cas Number	Analyte	RT	Est. Result (ug)	Qual
67-72-1	Hexachloroethane TIC	0.00	ND	

# Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Lab Control Sample - Batch: 480-388512**

**Method: 8260C  
Preparation: 5030C**

Lab Sample ID:	LCS 480-388512/7	Analysis Batch:	480-388512	Instrument ID:	HP5973P
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	94346P.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	11/21/2017 1031	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	11/21/2017 1031				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1,1,2-Tetrachloroethane	25.0	27.1	108	80 - 120	
1,1,1-Trichloroethane	25.0	23.3	93	73 - 126	
1,1,2,2-Tetrachloroethane	25.0	20.4	81	76 - 120	
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	22.2	89	61 - 148	
1,1,2-Trichloroethane	25.0	23.2	93	76 - 122	
1,1-Dichloroethane	25.0	23.0	92	77 - 120	
1,1-Dichloroethene	25.0	21.2	85	66 - 127	
1,1-Dichloropropene	25.0	21.6	86	72 - 122	
1,2,3-Trichlorobenzene	25.0	20.0	80	75 - 123	
1,2,3-Trichloropropane	25.0	20.9	84	68 - 122	
1,2,4-Trichlorobenzene	25.0	20.9	84	79 - 122	
1,2,4-Trimethylbenzene	25.0	23.2	93	76 - 121	
1,2-Dibromo-3-Chloropropane	25.0	17.4	70	56 - 134	
1,2-Dibromoethane (EDB)	25.0	24.0	96	77 - 120	
1,2-Dichlorobenzene	25.0	22.4	89	80 - 124	
1,2-Dichloroethane	25.0	20.2	81	75 - 120	
1,2-Dichloropropane	25.0	23.3	93	76 - 120	
1,3,5-Trimethylbenzene	25.0	22.8	91	77 - 121	
1,3-Dichlorobenzene	25.0	21.5	86	77 - 120	
1,3-Dichloropropane	25.0	23.6	94	75 - 120	
1,4-Dichlorobenzene	25.0	21.6	86	80 - 120	
1,4-Dioxane	500	449	90	50 - 150	
2,2-Dichloropropane	25.0	30.2	121	63 - 136	
2-Butanone (MEK)	125	149	119	57 - 140	
2-Chloroethyl vinyl ether	25.0	22.3	89	70 - 129	
2-Hexanone	125	155	124	65 - 127	
4-Methyl-2-pentanone (MIBK)	125	144	115	71 - 125	
Acetone	125	173	138	56 - 142	
Acrolein	125	152	121	52 - 143	
Acrylonitrile	250	256	102	63 - 125	
Benzene	25.0	23.6	94	71 - 124	
Bromobenzene	25.0	22.6	91	78 - 120	
Bromochloromethane	25.0	23.7	95	72 - 130	
Bromodichloromethane	25.0	22.0	88	80 - 122	
Bromoform	25.0	25.1	100	61 - 132	
Bromomethane	25.0	20.0	80	55 - 144	
Butyl alcohol, tert-	250	219	87	75 - 125	
Carbon disulfide	25.0	22.3	89	59 - 134	
Carbon tetrachloride	25.0	29.7	119	72 - 134	
Chlorobenzene	25.0	25.0	100	80 - 120	
Chloroethane	25.0	19.6	78	69 - 136	
Chloroform	25.0	21.5	86	73 - 127	
Chloromethane	25.0	24.4	98	68 - 124	
cis-1,2-Dichloroethene	25.0	22.7	91	74 - 124	
cis-1,3-Dichloropropene	25.0	21.8	87	74 - 124	
Cyclohexane	25.0	24.3	97	59 - 135	

# Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Lab Control Sample - Batch: 480-388512**

**Method: 8260C  
Preparation: 5030C**

Lab Sample ID: LCS 480-388512/7	Analysis Batch: 480-388512	Instrument ID: HP5973P
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 94346P.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/21/2017 1031	Units: ug/L	Final Weight/Volume: 5 mL
Prep Date: 11/21/2017 1031		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Dibromochloromethane	25.0	26.4	106	75 - 125	
Dibromomethane	25.0	21.5	86	76 - 127	
Dichlorodifluoromethane	25.0	22.6	90	59 - 135	
Dichlorofluoromethane	25.0	21.3	85	76 - 127	
Ethyl ether	25.0	23.7	95	76 - 123	
Ethylbenzene	25.0	24.2	97	77 - 123	
Hexachlorobutadiene	25.0	17.6	70	68 - 131	
Hexane	25.0	22.9	92	54 - 146	
Iodomethane	25.0	23.2	93	78 - 123	
Isobutanol	625	674	108	51 - 150	
Isopropylbenzene	25.0	23.5	94	77 - 122	
Methyl acetate	50.0	51.7	103	74 - 133	
Methyl tert-butyl ether	25.0	21.3	85	77 - 120	
Methylcyclohexane	25.0	20.4	82	68 - 134	
Methylene Chloride	25.0	18.5	74	75 - 124	*
m-Xylene & p-Xylene	25.0	26.0	104	76 - 122	
Naphthalene	25.0	21.8	87	66 - 125	
n-Butylbenzene	25.0	19.6	78	71 - 128	
N-Propylbenzene	25.0	21.3	85	75 - 127	
o-Chlorotoluene	25.0	24.0	96	76 - 121	
o-Xylene	25.0	25.2	101	76 - 122	
p-Chlorotoluene	25.0	23.5	94	77 - 121	
p-Cymene	25.0	21.0	84	73 - 120	
sec-Butylbenzene	25.0	21.9	88	74 - 127	
Styrene	25.0	24.8	99	80 - 120	
tert-Butylbenzene	25.0	22.4	89	75 - 123	
Tetrachloroethene	25.0	23.8	95	74 - 122	
Tetrahydrofuran	50.0	55.0	110	62 - 132	
Toluene	25.0	25.1	100	80 - 122	
trans-1,2-Dichloroethene	25.0	21.6	86	73 - 127	
trans-1,3-Dichloropropene	25.0	23.1	92	80 - 120	
trans-1,4-Dichloro-2-butene	25.0	20.0	80	41 - 131	
Trichloroethene	25.0	20.8	83	74 - 123	
Trichlorofluoromethane	25.0	23.6	95	62 - 150	
Vinyl acetate	50.0	58.3	117	50 - 144	
Vinyl chloride	25.0	19.0	76	65 - 133	
Surrogate		% Rec		Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)		88		77 - 120	
4-Bromofluorobenzene (Surr)		105		73 - 120	
Toluene-d8 (Surr)		105		80 - 120	

## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 480-388512**

**Method: 8260C  
Preparation: 5030C**

MS Lab Sample ID: 480-127654-D-9 MS	Analysis Batch: 480-388512	Instrument ID: HP5973P
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 94365P.D
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/21/2017 1938		Final Weight/Volume: 5 mL
Prep Date: 11/21/2017 1938		5 mL
Leach Date: N/A		

MSD Lab Sample ID: 480-127654-D-9 MSD	Analysis Batch: 480-388512	Instrument ID: HP5973P
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 94366P.D
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/21/2017 2006		Final Weight/Volume: 5 mL
Prep Date: 11/21/2017 2006		5 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
1,1,1,2-Tetrachloroethane	114	114	80 - 120	0	20		
1,1,1-Trichloroethane	101	97	73 - 126	5	15		
1,1,2,2-Tetrachloroethane	89	86	76 - 120	4	15		
1,1,2-Trichloroethane	94	97	76 - 122	3	15		
1,1-Dichloroethane	99	94	77 - 120	6	20		
1,1-Dichloroethene	92	88	66 - 127	5	16		
1,1-Dichloropropene	98	91	72 - 122	8	20		
1,2,3-Trichlorobenzene	83	81	75 - 123	2	20		
1,2,3-Trichloropropane	93	90	68 - 122	4	14		
1,2,4-Trichlorobenzene	84	82	79 - 122	2	20		
1,2,4-Trimethylbenzene	95	92	76 - 121	4	20		
1,2-Dichlorobenzene	91	87	80 - 124	5	20		
1,2-Dichloroethane	92	87	75 - 120	5	20		
1,2-Dichloropropane	101	98	76 - 120	3	20		
1,3,5-Trimethylbenzene	93	89	77 - 121	4	20		
1,3-Dichlorobenzene	89	86	77 - 120	4	20		
1,4-Dichlorobenzene	89	87	78 - 124	3	20		
2,2-Dichloropropane	115	103	63 - 136	11	20		
2-Butanone (MEK)	124	120	57 - 140	4	20		
2-Hexanone	133	132	65 - 127	0	15	F1	F1
4-Methyl-2-pentanone (MIBK)	128	129	71 - 125	1	35	F1	F1
Acetone	114	106	56 - 142	8	15		
Benzene	104	99	71 - 124	5	13		
Bromobenzene	94	90	78 - 120	4	15		
Bromochloromethane	106	102	72 - 130	4	15		
Bromodichloromethane	97	92	80 - 122	5	15		
Bromoform	107	106	61 - 132	1	15		
Bromomethane	92	83	55 - 144	10	15		
Butyl alcohol, tert-	107	103	75 - 125	4	15		
Carbon disulfide	98	92	59 - 134	6	15		
Carbon tetrachloride	130	124	72 - 134	5	15		
Chlorobenzene	103	104	80 - 120	0	25		
Chloroethane	84	79	69 - 136	6	15		

# Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 480-388512**

**Method: 8260C  
Preparation: 5030C**

MS Lab Sample ID: 480-127654-D-9 MS	Analysis Batch: 480-388512	Instrument ID: HP5973P
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 94365P.D
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/21/2017 1938		Final Weight/Volume: 5 mL
Prep Date: 11/21/2017 1938		5 mL
Leach Date: N/A		

MSD Lab Sample ID: 480-127654-D-9 MSD	Analysis Batch: 480-388512	Instrument ID: HP5973P
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 94366P.D
Dilution: 50	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/21/2017 2006		Final Weight/Volume: 5 mL
Prep Date: 11/21/2017 2006		5 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Chloroform	94	88	73 - 127	6	20		
Chloromethane	104	98	68 - 124	6	15		
cis-1,2-Dichloroethene	99	93	74 - 124	6	15		
cis-1,3-Dichloropropene	90	89	74 - 124	1	15		
Dibromochloromethane	112	109	75 - 125	2	15		
Dibromomethane	95	91	76 - 127	5	15		
Dichlorodifluoromethane	94	87	59 - 135	7	20		
Ethyl ether	105	102	76 - 123	3	20		
Ethylbenzene	103	100	77 - 123	2	15		
Hexachlorobutadiene	71	67	68 - 131	6	20		F1
Isopropylbenzene	96	92	77 - 122	4	20		
Methyl tert-butyl ether	94	91	77 - 120	3	37		
Methylene Chloride	84	80	75 - 124	5	15		
m-Xylene & p-Xylene	111	109	76 - 122	1	16		
Naphthalene	94	92	66 - 125	2	20		
n-Butylbenzene	78	75	71 - 128	3	15		
N-Propylbenzene	88	84	75 - 127	4	15		
o-Chlorotoluene	99	94	76 - 121	5	20		
o-Xylene	108	106	76 - 122	2	16		
p-Chlorotoluene	94	92	77 - 121	2	15		
p-Cymene	86	82	73 - 120	4	20		
sec-Butylbenzene	90	86	74 - 127	4	15		
Styrene	103	102	80 - 120	0	20		
tert-Butylbenzene	90	86	75 - 123	5	15		
Tetrachloroethene	100	97	74 - 122	3	20		
Tetrahydrofuran	144	136	62 - 132	3	25	F1	F1
Toluene	107	103	80 - 122	3	15		
trans-1,2-Dichloroethene	95	86	73 - 127	10	20		
trans-1,3-Dichloropropene	93	95	80 - 120	3	15		
Trichloroethene	91	87	74 - 123	5	16		
Trichlorofluoromethane	104	97	62 - 150	7	20		
Vinyl chloride	82	80	65 - 133	3	15		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
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## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	96	92	77 - 120
4-Bromofluorobenzene (Surr)	107	107	73 - 120
Toluene-d8 (Surr)	106	106	80 - 120

# Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 480-388512**

**Method: 8260C  
Preparation: 5030C**

MS Lab Sample ID: 480-127654-D-9 MS      Units: ug/L  
 Client Matrix: Water  
 Dilution: 50  
 Analysis Date: 11/21/2017 1938  
 Prep Date: 11/21/2017 1938  
 Leach Date: N/A

MSD Lab Sample ID: 480-127654-D-9 MSD  
 Client Matrix: Water  
 Dilution: 50  
 Analysis Date: 11/21/2017 2006  
 Prep Date: 11/21/2017 2006  
 Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
1,1,1,2-Tetrachloroethane	ND	1250	1250	1430	1420
1,1,1-Trichloroethane	ND	1250	1250	1260	1210
1,1,2,2-Tetrachloroethane	ND	1250	1250	1120	1070
1,1,2-Trichloroethane	ND	1250	1250	1180	1220
1,1-Dichloroethane	ND	1250	1250	1240	1170
1,1-Dichloroethene	ND	1250	1250	1150	1100
1,1-Dichloropropene	ND	1250	1250	1220	1130
1,2,3-Trichlorobenzene	ND	1250	1250	1030	1010
1,2,3-Trichloropropane	ND	1250	1250	1160	1120
1,2,4-Trichlorobenzene	ND	1250	1250	1050	1030
1,2,4-Trimethylbenzene	ND	1250	1250	1190	1150
1,2-Dichlorobenzene	ND	1250	1250	1140	1090
1,2-Dichloroethane	ND	1250	1250	1150	1090
1,2-Dichloropropane	ND	1250	1250	1260	1220
1,3,5-Trimethylbenzene	ND	1250	1250	1160	1110
1,3-Dichlorobenzene	ND	1250	1250	1110	1080
1,4-Dichlorobenzene	ND	1250	1250	1120	1090
2,2-Dichloropropane	ND	1250	1250	1440	1290
2-Butanone (MEK)	ND	6250	6250	7780	7470
2-Hexanone	ND	6250	6250	8290	F1 8270
4-Methyl-2-pentanone (MIBK)	ND	6250	6250	8000	F1 8070
Acetone	ND	6250	6250	7140	6620
Benzene	ND	1250	1250	1290	1240
Bromobenzene	ND	1250	1250	1170	1130
Bromochloromethane	ND	1250	1250	1320	1270
Bromodichloromethane	ND	1250	1250	1210	1150
Bromoform	ND	1250	1250	1340	1330
Bromomethane	ND	1250	1250	1150	1040
Butyl alcohol, tert-	2200	12500	12500	15600	15100
Carbon disulfide	14 J	1250	1250	1240	1160
Carbon tetrachloride	ND	1250	1250	1630	1550
Chlorobenzene	ND	1250	1250	1290	1290
Chloroethane	ND	1250	1250	1050	991
Chloroform	ND	1250	1250	1170	1100
Chloromethane	ND	1250	1250	1300	1220
cis-1,2-Dichloroethene	ND	1250	1250	1240	1170
cis-1,3-Dichloropropene	ND	1250	1250	1130	1110
Dibromochloromethane	ND	1250	1250	1400	1370
Dibromomethane	ND	1250	1250	1190	1130
Dichlorodifluoromethane	ND	1250	1250	1170	1090
Ethyl ether	ND	1250	1250	1310	1270
Ethylbenzene	ND	1250	1250	1280	1260
Hexachlorobutadiene	ND	1250	1250	887	839 F1



## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 480-388512**

**Method: 8260C  
Preparation: 5030C**

MS Lab Sample ID: 480-127654-D-9 MS      Units: ug/L  
 Client Matrix: Water  
 Dilution: 50  
 Analysis Date: 11/21/2017 1938  
 Prep Date: 11/21/2017 1938  
 Leach Date: N/A

MSD Lab Sample ID: 480-127654-D-9 MSD  
 Client Matrix: Water  
 Dilution: 50  
 Analysis Date: 11/21/2017 2006  
 Prep Date: 11/21/2017 2006  
 Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual	
Isopropylbenzene	ND	1250	1250	1200	1150	
Methyl tert-butyl ether	ND	1250	1250	1170	1130	
Methylene Chloride	ND	1250	1250	1060	1000	
m-Xylene & p-Xylene	ND	1250	1250	1380	1370	
Naphthalene	ND	1250	1250	1180	1150	
n-Butylbenzene	ND	1250	1250	973	942	
N-Propylbenzene	ND	1250	1250	1090	1050	
o-Chlorotoluene	ND	1250	1250	1240	1180	
o-Xylene	ND	1250	1250	1350	1320	
p-Chlorotoluene	ND	1250	1250	1170	1160	
p-Cymene	ND	1250	1250	1070	1030	
sec-Butylbenzene	ND	1250	1250	1120	1070	
Styrene	ND	1250	1250	1280	1280	
tert-Butylbenzene	ND	1250	1250	1120	1070	
Tetrachloroethene	ND	1250	1250	1260	1210	
Tetrahydrofuran	2200	2500	2500	5840	F1 5650	F1
Toluene	90	1250	1250	1430	1380	
trans-1,2-Dichloroethene	ND	1250	1250	1190	1080	
trans-1,3-Dichloropropene	ND	1250	1250	1160	1190	
Trichloroethene	ND	1250	1250	1140	1080	
Trichlorofluoromethane	ND	1250	1250	1300	1210	
Vinyl chloride	ND	1250	1250	1030	1000	

# Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Method Blank - Batch: 480-389245**

**Method: 8260C SIM  
Preparation: 5030C**

Lab Sample ID: MB 480-389245/9	Analysis Batch: 480-389245	Instrument ID: HP5973J
Client Matrix: Water	Prep Batch: N/A	Lab File ID: J4996.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 25 mL
Analysis Date: 11/27/2017 1612	Units: ug/L	Final Weight/Volume: 25 mL
Prep Date: 11/27/2017 1612		
Leach Date: N/A		

Analyte	Result	Qual	MDL	RL
Vinyl chloride	ND		0.0040	0.020

Surrogate	% Rec	Acceptance Limits
Dibromofluoromethane (Surr)	108	50 - 150
TBA-d9 (Surr)	103	50 - 150

**Lab Control Sample/**

**Method: 8260C SIM  
Preparation: 5030C**

**Lab Control Sample Duplicate Recovery Report - Batch: 480-389245**

LCS Lab Sample ID: LCS 480-389245/6	Analysis Batch: 480-389245	Instrument ID: HP5973J
Client Matrix: Water	Prep Batch: N/A	Lab File ID: J4993.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 25 mL
Analysis Date: 11/27/2017 1459	Units: ug/L	Final Weight/Volume: 25 mL
Prep Date: 11/27/2017 1459		25 mL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 480-389245/7	Analysis Batch: 480-389245	Instrument ID: HP5973J
Client Matrix: Water	Prep Batch: N/A	Lab File ID: J4994.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 25 mL
Analysis Date: 11/27/2017 1523	Units: ug/L	Final Weight/Volume: 25 mL
Prep Date: 11/27/2017 1523		25 mL
Leach Date: N/A		

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Vinyl chloride	121	107	50 - 150	13	20		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
Dibromofluoromethane (Surr)	107		104		50 - 150		
TBA-d9 (Surr)	132		119		50 - 150		

# Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Laboratory Control/  
Laboratory Duplicate Data Report - Batch: 480-389245**

**Method: 8260C SIM  
Preparation: 5030C**

LCS Lab Sample ID: LCS 480-389245/6      Units: ug/L  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/27/2017 1459  
Prep Date: 11/27/2017 1459  
Leach Date: N/A

LCSD Lab Sample ID: LCSD 480-389245/7  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/27/2017 1523  
Prep Date: 11/27/2017 1523  
Leach Date: N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Vinyl chloride	0.200	0.200	0.242	0.213

# Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

## Method Blank - Batch: 280-396780

Lab Sample ID: MB 280-396780/1-A  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/29/2017 2146  
Prep Date: 11/29/2017 1423  
Leach Date: N/A

Analysis Batch: 280-397056  
Prep Batch: 280-396780  
Leach Batch: N/A  
Units: mg/L

## Method: 6010D Preparation: 3005A Total Recoverable

Instrument ID: MT\_051  
Lab File ID: 51A112917C.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Cobalt, Dissolved	ND		0.0012	0.0030
Iron, Dissolved	ND		0.022	0.060
Potassium, Dissolved	ND		0.24	1.0

## Method Blank - Batch: 280-396780

Lab Sample ID: MB 280-396780/1-A  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/30/2017 1521  
Prep Date: 11/29/2017 1423  
Leach Date: N/A

Analysis Batch: 280-397251  
Prep Batch: 280-396780  
Leach Batch: N/A  
Units: mg/L

## Method: 6010D Preparation: 3005A Total Recoverable

Instrument ID: MT\_051  
Lab File ID: 51A113017A.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Calcium, Dissolved	ND		0.035	0.040
Magnesium, Dissolved	ND		0.011	0.050
Sodium, Dissolved	ND		0.12	1.0

# Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

## Lab Control Sample - Batch: 280-396780

**Method: 6010D**  
**Preparation: 3005A**  
**Total Recoverable**

Lab Sample ID:	LCS 280-396780/2-A	Analysis Batch:	280-397056	Instrument ID:	MT_051
Client Matrix:	Water	Prep Batch:	280-396780	Lab File ID:	51A112917C.csv
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	11/29/2017 2149	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	11/29/2017 1423				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Cobalt, Dissolved	0.500	0.456	91	89 - 111	
Iron, Dissolved	1.00	1.01	101	89 - 115	
Potassium, Dissolved	50.0	50.7	101	89 - 114	

## Lab Control Sample - Batch: 280-396780

**Method: 6010D**  
**Preparation: 3005A**  
**Total Recoverable**

Lab Sample ID:	LCS 280-396780/2-A	Analysis Batch:	280-397251	Instrument ID:	MT_051
Client Matrix:	Water	Prep Batch:	280-396780	Lab File ID:	51A113017A.csv
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	11/30/2017 1524	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	11/29/2017 1423				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Calcium, Dissolved	50.0	49.4	99	90 - 111	
Magnesium, Dissolved	50.0	47.6	95	90 - 113	
Sodium, Dissolved	50.0	51.2	102	90 - 115	

## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396780**

**Method: 6010D  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-103491-A-7-E MS	Analysis Batch: 280-397056	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-396780	Lab File ID: 51A112917C.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 11/29/2017 2158		Final Weight/Volume: 50 mL
Prep Date: 11/29/2017 1423		
Leach Date: N/A		

MSD Lab Sample ID: 280-103491-A-7-F MSD	Analysis Batch: 280-397056	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-396780	Lab File ID: 51A112917C.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 11/29/2017 2201		Final Weight/Volume: 50 mL
Prep Date: 11/29/2017 1423		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Cobalt, Dissolved	97	97	82 - 119	1	20		
Iron, Dissolved	93	99	52 - 155	6	20		
Potassium, Dissolved	97	102	76 - 132	5	20		

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396780**

**Method: 6010D  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-103491-A-7-E MS	Analysis Batch: 280-397251	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-396780	Lab File ID: 51A113017A.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 11/30/2017 1533		Final Weight/Volume: 50 mL
Prep Date: 11/29/2017 1423		
Leach Date: N/A		

MSD Lab Sample ID: 280-103491-A-7-F MSD	Analysis Batch: 280-397251	Instrument ID: MT_051
Client Matrix: Water	Prep Batch: 280-396780	Lab File ID: 51A113017A.csv
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 11/30/2017 1536		Final Weight/Volume: 50 mL
Prep Date: 11/29/2017 1423		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Calcium, Dissolved	101	97	48 - 153	4	20		
Magnesium, Dissolved	96	94	62 - 146	2	20		
Sodium, Dissolved	104	100	70 - 203	4	20		

**Quality Control Results**

Client: Waste Management

Job Number: 280-103734-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396780**

**Method: 6010D  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-103491-A-7-E MS      Units: mg/L  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/29/2017 2158  
Prep Date: 11/29/2017 1423  
Leach Date: N/A

MSD Lab Sample ID: 280-103491-A-7-F MSD  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/29/2017 2201  
Prep Date: 11/29/2017 1423  
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Cobalt, Dissolved	ND	0.500	0.500	0.483	0.487
Iron, Dissolved	ND	1.00	1.00	0.933	0.991
Potassium, Dissolved	ND	50.0	50.0	48.3	50.8

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396780**

**Method: 6010D  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-103491-A-7-E MS      Units: mg/L  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/30/2017 1533  
Prep Date: 11/29/2017 1423  
Leach Date: N/A

MSD Lab Sample ID: 280-103491-A-7-F MSD  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/30/2017 1536  
Prep Date: 11/29/2017 1423  
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Calcium, Dissolved	ND	50.0	50.0	50.7	48.5
Magnesium, Dissolved	ND	50.0	50.0	48.2	47.2
Sodium, Dissolved	ND	50.0	50.0	51.9	49.8

## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Method Blank - Batch: 280-396777**

Lab Sample ID: MB 280-396777/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/29/2017 2311  
 Prep Date: 11/29/2017 1423  
 Leach Date: N/A

Analysis Batch: 280-397048  
 Prep Batch: 280-396777  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_077  
 Lab File ID: 193\_BLK.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Antimony, Dissolved	ND		0.00040	0.0010
Barium, Dissolved	ND		0.00029	0.0010
Beryllium, Dissolved	ND		0.000080	0.0010
Cadmium, Dissolved	ND		0.00027	0.00020
Chromium, Dissolved	ND		0.00050	0.0030
Copper, Dissolved	ND		0.00056	0.0020
Lead, Dissolved	ND		0.00018	0.0010
Manganese, Dissolved	ND		0.00031	0.0010
Nickel, Dissolved	ND		0.00030	0.0040
Selenium, Dissolved	ND		0.00070	0.0010
Silver, Dissolved	ND		0.000033	0.0020
Thallium, Dissolved	ND		0.000050	0.0010
Vanadium, Dissolved	ND		0.00050	0.0020
Zinc, Dissolved	ND		0.0020	0.0050

**Lab Control Sample - Batch: 280-396777**

Lab Sample ID: LCS 280-396777/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 11/29/2017 2314  
 Prep Date: 11/29/2017 1423  
 Leach Date: N/A

Analysis Batch: 280-397048  
 Prep Batch: 280-396777  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6020B  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_077  
 Lab File ID: 194\_LCS.d  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony, Dissolved	0.0400	0.0365	91	79 - 111	
Barium, Dissolved	0.0400	0.0398	100	92 - 117	
Beryllium, Dissolved	0.0400	0.0386	96	87 - 118	
Cadmium, Dissolved	0.0400	0.0414	104	91 - 114	
Chromium, Dissolved	0.0400	0.0390	98	91 - 114	
Copper, Dissolved	0.0400	0.0417	104	89 - 116	
Lead, Dissolved	0.0400	0.0406	101	95 - 116	
Manganese, Dissolved	0.0400	0.0397	99	89 - 119	
Nickel, Dissolved	0.0400	0.0398	99	92 - 116	
Selenium, Dissolved	0.0400	0.0398	100	90 - 115	
Silver, Dissolved	0.0400	0.0389	97	93 - 118	
Thallium, Dissolved	0.0400	0.0394	98	94 - 115	
Vanadium, Dissolved	0.0400	0.0379	95	91 - 114	
Zinc, Dissolved	0.0400	0.0371	93	86 - 123	



## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396777**

**Method: 6020B  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-103730-F-1-B MS	Analysis Batch: 280-397048	Instrument ID: MT_077
Client Matrix: Water	Prep Batch: 280-396777	Lab File ID: 197SMPL.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 11/29/2017 2326		Final Weight/Volume: 50 mL
Prep Date: 11/29/2017 1423		
Leach Date: N/A		

MSD Lab Sample ID: 280-103730-F-1-C MSD	Analysis Batch: 280-397048	Instrument ID: MT_077
Client Matrix: Water	Prep Batch: 280-396777	Lab File ID: 198SMPL.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 50 mL
Analysis Date: 11/29/2017 2330		Final Weight/Volume: 50 mL
Prep Date: 11/29/2017 1423		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Antimony, Dissolved	93	95	85 - 115	1	20		
Barium, Dissolved	100	96	85 - 118	4	20		
Beryllium, Dissolved	93	95	80 - 125	1	20		
Cadmium, Dissolved	104	101	85 - 115	2	20		
Chromium, Dissolved	96	94	84 - 121	2	20		
Copper, Dissolved	101	100	85 - 119	1	20		
Lead, Dissolved	100	98	85 - 118	2	20		
Manganese, Dissolved	95	97	85 - 117	2	20		
Nickel, Dissolved	101	99	85 - 119	2	20		
Selenium, Dissolved	97	94	77 - 122	3	20		
Silver, Dissolved	96	96	85 - 115	0	20		
Thallium, Dissolved	98	97	85 - 118	1	20		
Vanadium, Dissolved	94	93	85 - 120	1	20		
Zinc, Dissolved	100	100	83 - 122	1	20		

## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396777**

**Method: 6020B  
Preparation: 3005A  
Dissolved**

MS Lab Sample ID: 280-103730-F-1-B MS      Units: mg/L  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/29/2017 2326  
Prep Date: 11/29/2017 1423  
Leach Date: N/A

MSD Lab Sample ID: 280-103730-F-1-C MSD  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/29/2017 2330  
Prep Date: 11/29/2017 1423  
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Antimony, Dissolved	ND	0.0400	0.0400	0.0374	0.0379
Barium, Dissolved	0.0034	0.0400	0.0400	0.0435	0.0419
Beryllium, Dissolved	ND	0.0400	0.0400	0.0373	0.0379
Cadmium, Dissolved	ND	0.0400	0.0400	0.0415	0.0405
Chromium, Dissolved	0.0026 J	0.0400	0.0400	0.0412	0.0403
Copper, Dissolved	ND	0.0400	0.0400	0.0404	0.0399
Lead, Dissolved	ND	0.0400	0.0400	0.0400	0.0393
Manganese, Dissolved	ND	0.0400	0.0400	0.0381	0.0389
Nickel, Dissolved	ND	0.0400	0.0400	0.0405	0.0396
Selenium, Dissolved	ND	0.0400	0.0400	0.0388	0.0376
Silver, Dissolved	ND	0.0400	0.0400	0.0384	0.0384
Thallium, Dissolved	ND	0.0400	0.0400	0.0393	0.0389
Vanadium, Dissolved	0.0046	0.0400	0.0400	0.0422	0.0419
Zinc, Dissolved	ND	0.0400	0.0400	0.0401	0.0398

# Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Method Blank - Batch: 280-398208**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 280-398208/6	Analysis Batch: 280-398208	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 06.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/10/2017 0903	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Chloride	ND		1.0	1.0
Sulfate	ND		1.0	1.0

**Method Reporting Limit Check - Batch: 280-398208**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MRL 280-398208/3	Analysis Batch: 280-398208	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 03.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/10/2017 0810	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	2.50	ND	101	50 - 150	
Sulfate	2.50	ND	99	50 - 150	

**Lab Control Sample/  
Lab Control Sample Duplicate Recovery Report - Batch: 280-398208**

**Method: 300.0**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-398208/4	Analysis Batch: 280-398208	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 04.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/10/2017 0828	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-398208/5	Analysis Batch: 280-398208	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 05.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/10/2017 0846	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Chloride	99	100	90 - 110	1	10		
Sulfate	99	100	90 - 110	1	10		

# Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Laboratory Control/  
Laboratory Duplicate Data Report - Batch: 280-398208**

**Method: 300.0  
Preparation: N/A**

LCS Lab Sample ID: LCS 280-398208/4      Units: mg/L  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 12/10/2017 0828  
Prep Date: N/A  
Leach Date: N/A

LCSD Lab Sample ID: LCSD 280-398208/5  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 12/10/2017 0846  
Prep Date: N/A  
Leach Date: N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Chloride	100	100	98.8	99.7
Sulfate	100	100	99.2	100

## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-398208**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-103666-A-1 MS	Analysis Batch: 280-398208	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 16.0000.d
Dilution: 10	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/10/2017 1202		Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

MSD Lab Sample ID: 280-103666-A-1 MSD	Analysis Batch: 280-398208	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 19.0000.d
Dilution: 10	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/10/2017 1255		Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Chloride	106	110	80 - 120	1	20	4	4
Sulfate	106	110	80 - 120	3	20		

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-398208**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-103781-B-1 MS	Analysis Batch: 280-398208	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 28.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/10/2017 1535		Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

MSD Lab Sample ID: 280-103781-B-1 MSD	Analysis Batch: 280-398208	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 31.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/10/2017 1629		Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Chloride	97	90	80 - 120	1	20	E 4	E 4
Sulfate	105	101	80 - 120	1	20		

## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-398208**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-103666-A-1 MS      Units: mg/L  
 Client Matrix: Water  
 Dilution: 10  
 Analysis Date: 12/10/2017 1202  
 Prep Date: N/A  
 Leach Date: N/A

MSD Lab Sample ID: 280-103666-A-1 MSD  
 Client Matrix: Water  
 Dilution: 10  
 Analysis Date: 12/10/2017 1255  
 Prep Date: N/A  
 Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Chloride	1500	250	250	1740    4	1750    4
Sulfate	49	250	250	314	325

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-398208**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-103781-B-1 MS      Units: mg/L  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/10/2017 1535  
 Prep Date: N/A  
 Leach Date: N/A

MSD Lab Sample ID: 280-103781-B-1 MSD  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/10/2017 1629  
 Prep Date: N/A  
 Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Chloride	250	25.0	25.0	277    E 4	276    E 4
Sulfate	68	25.0	25.0	93.8	92.7

## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Duplicate - Batch: 280-398208**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-103666-A-1 DU	Analysis Batch: 280-398208	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 15.0000.d
Dilution: 10	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/10/2017 1144	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Chloride	1500	1480	0.09	15	
Sulfate	49	46.8	4	15	

**Duplicate - Batch: 280-398208**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: 280-103781-B-1 DU	Analysis Batch: 280-398208	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 27.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/10/2017 1517	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Chloride	250	253	0	15	E
Sulfate	68	68.0	0.6	15	

## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Method Blank - Batch: 280-398268**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 280-398268/6	Analysis Batch: 280-398268	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 06.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/11/2017 1131	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Chloride	ND		1.0	1.0
Sulfate	ND		1.0	1.0

**Method Reporting Limit Check - Batch: 280-398268**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MRL 280-398268/3	Analysis Batch: 280-398268	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 03.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/11/2017 1037	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	2.50	ND	117	50 - 150	
Sulfate	2.50	ND	117	50 - 150	

**Lab Control Sample/**

**Lab Control Sample Duplicate Recovery Report - Batch: 280-398268**

**Method: 300.0**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-398268/4	Analysis Batch: 280-398268	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 04.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/11/2017 1055	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-398268/5	Analysis Batch: 280-398268	Instrument ID: WC_IonChrom7
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 05.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/11/2017 1113	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Chloride	100	100	90 - 110	0	10		
Sulfate	100	100	90 - 110	0	10		



## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Laboratory Control/  
Laboratory Duplicate Data Report - Batch: 280-398268**

**Method: 300.0  
Preparation: N/A**

LCS Lab Sample ID: LCS 280-398268/4      Units: mg/L  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/11/2017 1055  
 Prep Date: N/A  
 Leach Date: N/A

LCSD Lab Sample ID: LCSD 280-398268/5  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/11/2017 1113  
 Prep Date: N/A  
 Leach Date: N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Chloride	100	100	99.6	99.6
Sulfate	100	100	100	100

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-398268**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-103639-Q-1 MS  
 Client Matrix: Water  
 Dilution: 10  
 Analysis Date: 12/12/2017 0232  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-398268  
 Prep Batch: N/A  
 Leach Batch: N/A

Instrument ID: WC\_IonChrom7  
 Lab File ID: 42.0000.d  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL  
 25 uL

MSD Lab Sample ID: 280-103639-Q-1 MSD  
 Client Matrix: Water  
 Dilution: 10  
 Analysis Date: 12/12/2017 0250  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-398268  
 Prep Batch: N/A  
 Leach Batch: N/A

Instrument ID: WC\_IonChrom7  
 Lab File ID: 43.0000.d  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL  
 25 uL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Chloride	117	118	80 - 120	0	20		
Sulfate	116	116	80 - 120	0	20		

## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-398268**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-103639-Q-1 MS      Units: mg/L  
 Client Matrix: Water  
 Dilution: 10  
 Analysis Date: 12/12/2017 0232  
 Prep Date: N/A  
 Leach Date: N/A

MSD Lab Sample ID: 280-103639-Q-1 MSD  
 Client Matrix: Water  
 Dilution: 10  
 Analysis Date: 12/12/2017 0250  
 Prep Date: N/A  
 Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Chloride	ND	250	250	293	294
Sulfate	23	250	250	312	313

**Duplicate - Batch: 280-398268**

**Method: 300.0  
Preparation: N/A**

Lab Sample ID: 280-103639-Q-1 DU  
 Client Matrix: Water  
 Dilution: 10  
 Analysis Date: 12/12/2017 0214  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-398268  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: mg/L

Instrument ID: WC\_IonChrom7  
 Lab File ID: 41.0000.d  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL  
 25 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Chloride	ND	ND	NC	15	
Sulfate	23	22.0	3	15	

## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Method Blank - Batch: 280-398345**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 280-398345/6	Analysis Batch: 280-398345	Instrument ID: WC_IonChrom12
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 06.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/12/2017 0747	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Chloride	ND		1.0	1.0
Sulfate	ND		1.0	1.0

**Method Reporting Limit Check - Batch: 280-398345**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MRL 280-398345/3	Analysis Batch: 280-398345	Instrument ID: WC_IonChrom12
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 03.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/12/2017 0656	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	2.50	ND	105	50 - 150	
Sulfate	2.50	ND	90	50 - 150	

**Lab Control Sample/**

**Lab Control Sample Duplicate Recovery Report - Batch: 280-398345**

**Method: 300.0**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-398345/4	Analysis Batch: 280-398345	Instrument ID: WC_IonChrom12
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 04.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/12/2017 0713	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-398345/5	Analysis Batch: 280-398345	Instrument ID: WC_IonChrom12
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 05.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/12/2017 0730	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Chloride	100	100	90 - 110	0	10		
Sulfate	100	101	90 - 110	0	10		

## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Laboratory Control/  
Laboratory Duplicate Data Report - Batch: 280-398345**

**Method: 300.0  
Preparation: N/A**

LCS Lab Sample ID: LCS 280-398345/4      Units: mg/L  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/12/2017 0713  
 Prep Date: N/A  
 Leach Date: N/A

LCSD Lab Sample ID: LCSD 280-398345/5  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/12/2017 0730  
 Prep Date: N/A  
 Leach Date: N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Chloride	100	100	99.9	99.8
Sulfate	100	100	100	101

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-398345**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-103734-1  
 Client Matrix: Water  
 Dilution: 10  
 Analysis Date: 12/12/2017 1351  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-398345  
 Prep Batch: N/A  
 Leach Batch: N/A

Instrument ID: WC\_IonChrom12  
 Lab File ID: 22.0000.d  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL  
 25 uL

MSD Lab Sample ID: 280-103734-1  
 Client Matrix: Water  
 Dilution: 10  
 Analysis Date: 12/12/2017 1408  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-398345  
 Prep Batch: N/A  
 Leach Batch: N/A

Instrument ID: WC\_IonChrom12  
 Lab File ID: 23.0000.d  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL  
 25 uL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Chloride	114	115	80 - 120	0	20		
Sulfate	107	101	80 - 120	1	20		

## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-398345**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-103734-1  
 Client Matrix: Water  
 Dilution: 10  
 Analysis Date: 12/12/2017 1351  
 Prep Date: N/A  
 Leach Date: N/A

Units: mg/L

MSD Lab Sample ID: 280-103734-1  
 Client Matrix: Water  
 Dilution: 10  
 Analysis Date: 12/12/2017 1408  
 Prep Date: N/A  
 Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Chloride	ND	250	250	286	288
Sulfate	860	250	250	1130	1110

**Duplicate - Batch: 280-398345**

**Method: 300.0  
Preparation: N/A**

Lab Sample ID: 280-103734-1  
 Client Matrix: Water  
 Dilution: 10  
 Analysis Date: 12/12/2017 1334  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-398345  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: mg/L

Instrument ID: WC\_IonChrom12  
 Lab File ID: 21.0000.d  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL  
 25 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Chloride	ND	ND	NC	15	
Sulfate	860	863	0.1	15	

## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Method Blank - Batch: 280-397335**

**Method: 350.1**  
**Preparation: N/A**

Lab Sample ID: MB 280-397335/20	Analysis Batch: 280-397335	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\120117.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 12/01/2017 1325	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Ammonia (as N)	ND		0.030	0.030

**Lab Control Sample/  
Lab Control Sample Duplicate Recovery Report - Batch: 280-397335**

**Method: 350.1**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-397335/18	Analysis Batch: 280-397335	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\120117.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 12/01/2017 1321	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-397335/19	Analysis Batch: 280-397335	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\120117.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 12/01/2017 1323	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Ammonia (as N)	101	100	90 - 110	0	10		

**Laboratory Control/  
Laboratory Duplicate Data Report - Batch: 280-397335**

**Method: 350.1**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-397335/18	Units: mg/L	LCSD Lab Sample ID: LCSD 280-397335/19
Client Matrix: Water		Client Matrix: Water
Dilution: 1.0		Dilution: 1.0
Analysis Date: 12/01/2017 1321		Analysis Date: 12/01/2017 1323
Prep Date: N/A		Prep Date: N/A
Leach Date: N/A		Leach Date: N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Ammonia (as N)	2.50	2.50	2.52	2.51

## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-397335**

**Method: 350.1  
Preparation: N/A**

MS Lab Sample ID: 280-103543-C-1 MS	Analysis Batch: 280-397335	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\120117.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 12/01/2017 1329		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-103543-C-1 MSD	Analysis Batch: 280-397335	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\120117.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 12/01/2017 1331		Final Weight/Volume: 10 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Ammonia (as N)	104	104	90 - 110	1	10		

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-397335**

**Method: 350.1  
Preparation: N/A**

MS Lab Sample ID: 280-103543-C-1 MS	Units: mg/L	MSD Lab Sample ID: 280-103543-C-1 MSD
Client Matrix: Water		Client Matrix: Water
Dilution: 1.0		Dilution: 1.0
Analysis Date: 12/01/2017 1329		Analysis Date: 12/01/2017 1331
Prep Date: N/A		Prep Date: N/A
Leach Date: N/A		Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Ammonia (as N)	ND	1.00	1.00	1.04	1.04

## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Method Blank - Batch: 280-396846**

**Method: 353.2**  
**Preparation: N/A**

Lab Sample ID: MB 280-396846/66	Analysis Batch: 280-396846	Instrument ID: WC_Alp 2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\112817.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 11/28/2017 1926	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Nitrate/Nitrite	ND		0.050	0.050

**Lab Control Sample - Batch: 280-396846**

**Method: 353.2**  
**Preparation: N/A**

Lab Sample ID: LCS 280-396846/65	Analysis Batch: 280-396846	Instrument ID: WC_Alp 2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\112817.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 11/28/2017 1924	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate/Nitrite	5.00	4.63	93	90 - 110	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396846**

**Method: 353.2**  
**Preparation: N/A**

MS Lab Sample ID: 280-103734-1	Analysis Batch: 280-396846	Instrument ID: WC_Alp 2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\112817.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/28/2017 2006		Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-103734-1	Analysis Batch: 280-396846	Instrument ID: WC_Alp 2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\112817.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 11/28/2017 2008		Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrate/Nitrite	99	98	90 - 110	1	10		



# Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-396846**

**Method: 353.2  
Preparation: N/A**

MS Lab Sample ID: 280-103734-1                      Units: mg/L  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/28/2017 2006  
Prep Date: N/A  
Leach Date: N/A

MSD Lab Sample ID: 280-103734-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 11/28/2017 2008  
Prep Date: N/A  
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Nitrate/Nitrite	1.6	4.00	4.00	5.53	5.50

## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Method Blank - Batch: 280-397430**

Lab Sample ID: MB 280-397430/5  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/04/2017 1034  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-397430  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: mg/L

**Method: 410.4  
 Preparation: N/A**

Instrument ID: WC\_Genesys20  
 Lab File ID: N/A  
 Initial Weight/Volume: 2 mL  
 Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL	RL
Chemical Oxygen Demand (COD)	ND		10	10

**Lab Control Sample/  
 Lab Control Sample Duplicate Recovery Report - Batch: 280-397430** **Method: 410.4  
 Preparation: N/A**

LCS Lab Sample ID: LCS 280-397430/3  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/04/2017 1034  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-397430  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: mg/L

Instrument ID: WC\_Genesys20  
 Lab File ID: N/A  
 Initial Weight/Volume: 100 mL  
 Final Weight/Volume: 100 mL

LCSD Lab Sample ID: LCSD 280-397430/4  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/04/2017 1034  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-397430  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: mg/L

Instrument ID: WC\_Genesys20  
 Lab File ID: N/A  
 Initial Weight/Volume: 100 mL  
 Final Weight/Volume: 100 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Chemical Oxygen Demand (COD)	97	95	90 - 110	2	11		

**Laboratory Control/  
 Laboratory Duplicate Data Report - Batch: 280-397430** **Method: 410.4  
 Preparation: N/A**

LCS Lab Sample ID: LCS 280-397430/3  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/04/2017 1034  
 Prep Date: N/A  
 Leach Date: N/A

Units: mg/L

LCSD Lab Sample ID: LCSD 280-397430/4  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/04/2017 1034  
 Prep Date: N/A  
 Leach Date: N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Chemical Oxygen Demand (COD)	100	100	97.1	95.4

## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-397430**

**Method: 410.4  
Preparation: N/A**

MS Lab Sample ID: 280-103786-B-1 MS	Analysis Batch: 280-397430	Instrument ID: WC_Genesys20
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 2.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 12/04/2017 1034		Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-103786-B-1 MSD	Analysis Batch: 280-397430	Instrument ID: WC_Genesys20
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 2.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 12/04/2017 1034		Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Chemical Oxygen Demand (COD)	78	85	90 - 110	5	11	F1	F1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-397430**

**Method: 410.4  
Preparation: N/A**

MS Lab Sample ID: 280-103786-B-1 MS	Units: mg/L
Client Matrix: Water	
Dilution: 2.0	
Analysis Date: 12/04/2017 1034	
Prep Date: N/A	
Leach Date: N/A	

MSD Lab Sample ID: 280-103786-B-1 MSD
Client Matrix: Water
Dilution: 2.0
Analysis Date: 12/04/2017 1034
Prep Date: N/A
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Chemical Oxygen Demand (COD)	55	100	100	133 F1	140 F1

## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Method Blank - Batch: 280-396376**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: MB 280-396376/5	Analysis Batch: 280-396376	Instrument ID: WC-AT3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 112417.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/22/2017 1307	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Alkalinity, Total (As CaCO3)	ND		5.0	5.0
Alkalinity, Bicarbonate (As CaCO3)	ND		5.0	5.0

**Lab Control Sample - Batch: 280-396376**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: LCS 280-396376/4	Analysis Batch: 280-396376	Instrument ID: WC-AT3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 112417.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/22/2017 1303	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity, Total (As CaCO3)	200	195	97	90 - 110	

**Duplicate - Batch: 280-396376**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: 280-103734-2	Analysis Batch: 280-396376	Instrument ID: WC-AT3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 112417.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/22/2017 1320	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Alkalinity, Total (As CaCO3)	1400	1360	0.8	10	

## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Method Blank - Batch: 280-395903**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: MB 280-395903/1	Analysis Batch: 280-395903	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 11/20/2017 1156	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Total Dissolved Solids (TDS)	ND		5.0	5.0

**Lab Control Sample - Batch: 280-395903**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: LCS 280-395903/2	Analysis Batch: 280-395903	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 11/20/2017 1156	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Dissolved Solids (TDS)	500	506	101	86 - 110	

**Duplicate - Batch: 280-395903**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: 280-103730-A-2 DU	Analysis Batch: 280-395903	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 11/20/2017 1156	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Dissolved Solids (TDS)	200	184	8	10	

# Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Method Blank - Batch: 280-398382**

**Method: SM 5310B**

**Preparation: N/A**

Lab Sample ID:	MB 280-398382/4	Analysis Batch:	280-398382	Instrument ID:	WC_SHI3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	121117.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	12/11/2017 1428	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	RL	RL
Total Organic Carbon - Average	ND		1.0	1.0

**Lab Control Sample - Batch: 280-398382**

**Method: SM 5310B**

**Preparation: N/A**

Lab Sample ID:	LCS 280-398382/3	Analysis Batch:	280-398382	Instrument ID:	WC_SHI3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	121117.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	12/11/2017 1414	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon - Average	25.0	25.4	102	88 - 112	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-398382**

**Method: SM 5310B**

**Preparation: N/A**

MS Lab Sample ID:	280-103653-B-1 MS	Analysis Batch:	280-398382	Instrument ID:	WC_SHI3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	121117.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	12/11/2017 1516			Final Weight/Volume:	50 mL
Prep Date:	N/A				
Leach Date:	N/A				

MSD Lab Sample ID:	280-103653-B-1 MSD	Analysis Batch:	280-398382	Instrument ID:	WC_SHI3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	121117.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	12/11/2017 1535			Final Weight/Volume:	50 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Total Organic Carbon - Average	100	99	88 - 112	1	15		

# Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-398382**

**Method: SM 5310B  
Preparation: N/A**

MS Lab Sample ID: 280-103653-B-1 MS      Units: mg/L  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 12/11/2017 1516  
Prep Date: N/A  
Leach Date: N/A

MSD Lab Sample ID: 280-103653-B-1 MSD  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 12/11/2017 1535  
Prep Date: N/A  
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Total Organic Carbon - Average	5.6	25.0	25.0	30.5	30.2

# Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

## Laboratory Chronicle

Lab ID: 280-103734-1

Client ID: OBWL-TD

Sample Date/Time: 11/15/2017 11:40 Received Date/Time: 11/17/2017 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103734-F-1		280-396831		11/28/2017 21:52	1	TAL DEN	MRM
A:8260B SIM	280-103734-F-1		280-396831		11/28/2017 21:52	1	TAL DEN	MRM
P:5030C	280-103734-H-1		480-388512		11/21/2017 12:17	4	TAL BUF	KMN
A:8260C	280-103734-H-1		480-388512		11/21/2017 12:17	4	TAL BUF	KMN
P:5030C	280-103734-J-1		480-389245		11/27/2017 18:22	2	TAL BUF	RJF
A:8260C SIM	280-103734-J-1		480-389245		11/27/2017 18:22	2	TAL BUF	RJF
P:3005A	280-103734-D-1-B		280-397056	280-396780	11/29/2017 14:23	1	TAL DEN	MLS
A:6010D	280-103734-D-1-B		280-397056	280-396780	11/29/2017 22:28	1	TAL DEN	CML
P:3005A	280-103734-D-1-B		280-397251	280-396780	11/29/2017 14:23	1	TAL DEN	MLS
A:6010D	280-103734-D-1-B		280-397251	280-396780	11/30/2017 16:06	1	TAL DEN	CML
P:3005A	280-103734-D-1-A		280-397048	280-396777	11/29/2017 14:23	1	TAL DEN	MLS
A:6020B	280-103734-D-1-A		280-397048	280-396777	11/29/2017 23:41	1	TAL DEN	LMT
A:300.0	280-103734-A-1		280-398208		12/10/2017 14:24	1	TAL DEN	JML
A:300.0	280-103734-A-1		280-398345		12/12/2017 13:17	10	TAL DEN	JML
A:350.1	280-103734-B-1		280-397335		12/01/2017 14:01	1	TAL DEN	KAM
A:353.2	280-103734-B-1		280-396846		11/28/2017 20:04	1	TAL DEN	SVC
A:410.4	280-103734-B-1		280-397430		12/04/2017 10:34	1	TAL DEN	CCJ
A:SM 2320B	280-103734-A-1		280-396376		11/22/2017 13:23	1	TAL DEN	A1D
A:SM 2540C	280-103734-A-1		280-395903		11/20/2017 11:56	1	TAL DEN	JAP
A:SM 5310B	280-103734-B-1		280-398382		12/11/2017 18:01	1	TAL DEN	CCJ
A:Field Sampling	280-103734-A-1		280-395824		11/15/2017 12:40	1	TAL DEN	CS

Lab ID: 280-103734-1 MS

Client ID: OBWL-TD

Sample Date/Time: 11/15/2017 11:40 Received Date/Time: 11/17/2017 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:300.0	280-103734-A-1 MS		280-398345		12/12/2017 13:51	10	TAL DEN	JML
A:353.2	280-103734-B-1 MS		280-396846		11/28/2017 20:06	1	TAL DEN	SVC

Lab ID: 280-103734-1 MSD

Client ID: OBWL-TD

Sample Date/Time: 11/15/2017 11:40 Received Date/Time: 11/17/2017 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:300.0	280-103734-A-1 MSD		280-398345		12/12/2017 14:08	10	TAL DEN	JML
A:353.2	280-103734-B-1 MSD		280-396846		11/28/2017 20:08	1	TAL DEN	SVC



# Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

## Laboratory Chronicle

Lab ID: 280-103734-1 DU

Client ID: OBWL-TD

Sample Date/Time: 11/15/2017 11:40 Received Date/Time: 11/17/2017 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:300.0	280-103734-A-1 DU		280-398345		12/12/2017 13:34	10	TAL DEN	JML

Lab ID: 280-103734-2

Client ID: L-INF

Sample Date/Time: 11/15/2017 12:45 Received Date/Time: 11/17/2017 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103734-G-2		280-396831		11/28/2017 22:10	1	TAL DEN	MRM
A:8260B SIM	280-103734-G-2		280-396831		11/28/2017 22:10	1	TAL DEN	MRM
P:5030C	280-103734-H-2		480-388512		11/21/2017 12:45	5	TAL BUF	KMN
A:8260C	280-103734-H-2		480-388512		11/21/2017 12:45	5	TAL BUF	KMN
P:5030C	280-103734-J-2		480-389245		11/27/2017 18:47	5	TAL BUF	RJF
A:8260C SIM	280-103734-J-2		480-389245		11/27/2017 18:47	5	TAL BUF	RJF
P:3005A	280-103734-D-2-B		280-397056	280-396780	11/29/2017 14:23	1	TAL DEN	MLS
A:6010D	280-103734-D-2-B		280-397056	280-396780	11/29/2017 22:31	1	TAL DEN	CML
P:3005A	280-103734-D-2-B		280-397251	280-396780	11/29/2017 14:23	1	TAL DEN	MLS
A:6010D	280-103734-D-2-B		280-397251	280-396780	11/30/2017 16:09	1	TAL DEN	CML
P:3005A	280-103734-D-2-A		280-397048	280-396777	11/29/2017 14:23	1	TAL DEN	MLS
A:6020B	280-103734-D-2-A		280-397048	280-396777	11/29/2017 23:45	1	TAL DEN	LMT
A:300.0	280-103734-A-2		280-398208		12/10/2017 14:42	2	TAL DEN	JML
A:300.0	280-103734-A-2		280-398268		12/11/2017 23:34	10	TAL DEN	JML
A:350.1	280-103734-C-2		280-397335		12/01/2017 14:03	1	TAL DEN	KAM
A:353.2	280-103734-B-2		280-396846		11/28/2017 20:10	1	TAL DEN	SVC
A:410.4	280-103734-B-2		280-397430		12/04/2017 10:34	2	TAL DEN	CCJ
A:SM 2320B	280-103734-A-2		280-396376		11/22/2017 13:14	1	TAL DEN	A1D
A:SM 2540C	280-103734-A-2		280-395903		11/20/2017 11:56	1	TAL DEN	JAP
A:SM 5310B	280-103734-C-2		280-398382		12/11/2017 18:20	2.5	TAL DEN	CCJ
A:Field Sampling	280-103734-A-2		280-395824		11/15/2017 13:45	1	TAL DEN	CS

Lab ID: 280-103734-2 DU

Client ID: L-INF

Sample Date/Time: 11/15/2017 12:45 Received Date/Time: 11/17/2017 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:SM 2320B	280-103734-A-2 DU		280-396376		11/22/2017 13:20	1	TAL DEN	A1D

# Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

## Laboratory Chronicle

Lab ID: 280-103734-3

Client ID: TRIP BLANK

Sample Date/Time: 11/15/2017 00:00 Received Date/Time: 11/17/2017 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103734-A-3		280-396651		11/28/2017 02:10	1	TAL DEN	MRM
A:8260B SIM	280-103734-A-3		280-396651		11/28/2017 02:10	1	TAL DEN	MRM
P:5030C	280-103734-B-3		480-388512		11/21/2017 13:12	1	TAL BUF	KMN
A:8260C	280-103734-B-3		480-388512		11/21/2017 13:12	1	TAL BUF	KMN

Lab ID: MB

Client ID: N/A

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	MB 280-396651/8		280-396651		11/27/2017 18:39	1	TAL DEN	MRM
A:8260B SIM	MB 280-396651/8		280-396651		11/27/2017 18:39	1	TAL DEN	MRM
P:5030C	MB 480-388512/9		480-388512		11/21/2017 11:26	1	TAL BUF	KMN
A:8260C	MB 480-388512/9		480-388512		11/21/2017 11:26	1	TAL BUF	KMN
P:5030C	MB 480-389245/9		480-389245		11/27/2017 16:12	1	TAL BUF	RJF
A:8260C SIM	MB 480-389245/9		480-389245		11/27/2017 16:12	1	TAL BUF	RJF
P:3005A	MB 280-396780/1-A		280-397056	280-396780	11/29/2017 14:23	1	TAL DEN	MLS
A:6010D	MB 280-396780/1-A		280-397056	280-396780	11/29/2017 21:46	1	TAL DEN	CML
P:3005A	MB 280-396780/1-A		280-397251	280-396780	11/29/2017 14:23	1	TAL DEN	MLS
A:6010D	MB 280-396780/1-A		280-397251	280-396780	11/30/2017 15:21	1	TAL DEN	CML
P:3005A	MB 280-396777/1-A		280-397048	280-396777	11/29/2017 14:23	1	TAL DEN	MLS
A:6020B	MB 280-396777/1-A		280-397048	280-396777	11/29/2017 23:11	1	TAL DEN	LMT
A:300.0	MB 280-398208/6		280-398208		12/10/2017 09:03	1	TAL DEN	JML
A:300.0	MB 280-398268/6		280-398268		12/11/2017 11:31	1	TAL DEN	JML
A:300.0	MB 280-398345/6		280-398345		12/12/2017 07:47	1	TAL DEN	JML
A:350.1	MB 280-397335/20		280-397335		12/01/2017 13:25	1	TAL DEN	KAM
A:353.2	MB 280-396846/66		280-396846		11/28/2017 19:26	1	TAL DEN	SVC
A:410.4	MB 280-397430/5		280-397430		12/04/2017 10:34	1	TAL DEN	CCJ
A:SM 2320B	MB 280-396376/5		280-396376		11/22/2017 13:07	1	TAL DEN	A1D
A:SM 2540C	MB 280-395903/1		280-395903		11/20/2017 11:56	1	TAL DEN	JAP
A:SM 5310B	MB 280-398382/4		280-398382		12/11/2017 14:28	1	TAL DEN	CCJ

# Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

## Laboratory Chronicle

Lab ID: LCS

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	LCS 280-396651/6		280-396651		11/27/2017 18:21	1	TAL DEN	MRM
A:8260B SIM	LCS 280-396651/6		280-396651		11/27/2017 18:21	1	TAL DEN	MRM
P:5030C	LCS 480-388512/7		480-388512		11/21/2017 10:31	1	TAL BUF	KMN
A:8260C	LCS 480-388512/7		480-388512		11/21/2017 10:31	1	TAL BUF	KMN
P:5030C	LCS 480-389245/6		480-389245		11/27/2017 14:59	1	TAL BUF	RJF
A:8260C SIM	LCS 480-389245/6		480-389245		11/27/2017 14:59	1	TAL BUF	RJF
P:3005A	LCS 280-396780/2-A		280-397056	280-396780	11/29/2017 14:23	1	TAL DEN	MLS
A:6010D	LCS 280-396780/2-A		280-397056	280-396780	11/29/2017 21:49	1	TAL DEN	CML
P:3005A	LCS 280-396780/2-A		280-397251	280-396780	11/29/2017 14:23	1	TAL DEN	MLS
A:6010D	LCS 280-396780/2-A		280-397251	280-396780	11/30/2017 15:24	1	TAL DEN	CML
P:3005A	LCS 280-396777/2-A		280-397048	280-396777	11/29/2017 14:23	1	TAL DEN	MLS
A:6020B	LCS 280-396777/2-A		280-397048	280-396777	11/29/2017 23:14	1	TAL DEN	LMT
A:300.0	LCS 280-398208/4		280-398208		12/10/2017 08:28	1	TAL DEN	JML
A:300.0	LCS 280-398268/4		280-398268		12/11/2017 10:55	1	TAL DEN	JML
A:300.0	LCS 280-398345/4		280-398345		12/12/2017 07:13	1	TAL DEN	JML
A:350.1	LCS 280-397335/18		280-397335		12/01/2017 13:21	1	TAL DEN	KAM
A:353.2	LCS 280-396846/65		280-396846		11/28/2017 19:24	1	TAL DEN	SVC
A:410.4	LCS 280-397430/3		280-397430		12/04/2017 10:34	1	TAL DEN	CCJ
A:SM 2320B	LCS 280-396376/4		280-396376		11/22/2017 13:03	1	TAL DEN	A1D
A:SM 2540C	LCS 280-395903/2		280-395903		11/20/2017 11:56	1	TAL DEN	JAP
A:SM 5310B	LCS 280-398382/3		280-398382		12/11/2017 14:14	1	TAL DEN	CCJ

Lab ID: LCSD

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030C	LCSD 480-389245/7		480-389245		11/27/2017 15:23	1	TAL BUF	RJF
A:8260C SIM	LCSD 480-389245/7		480-389245		11/27/2017 15:23	1	TAL BUF	RJF
A:300.0	LCSD 280-398208/5		280-398208		12/10/2017 08:46	1	TAL DEN	JML
A:300.0	LCSD 280-398268/5		280-398268		12/11/2017 11:13	1	TAL DEN	JML
A:300.0	LCSD 280-398345/5		280-398345		12/12/2017 07:30	1	TAL DEN	JML
A:350.1	LCSD 280-397335/19		280-397335		12/01/2017 13:23	1	TAL DEN	KAM
A:410.4	LCSD 280-397430/4		280-397430		12/04/2017 10:34	1	TAL DEN	CCJ

Lab ID: MRL

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:300.0	MRL 280-398208/3		280-398208		12/10/2017 08:10	1	TAL DEN	JML
A:300.0	MRL 280-398268/3		280-398268		12/11/2017 10:37	1	TAL DEN	JML
A:300.0	MRL 280-398345/3		280-398345		12/12/2017 06:56	1	TAL DEN	JML

## Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

### Laboratory Chronicle

Lab ID: MS

Client ID: N/A

Sample Date/Time: 11/13/2017 11:21    Received Date/Time: 11/14/2017 08:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103543-J-1 MS		280-396651		11/27/2017 21:21	1	TAL DEN	MRM
A:8260B SIM	280-103543-J-1 MS		280-396651		11/27/2017 21:21	1	TAL DEN	MRM
P:5030C	480-127654-D-9 MS		480-388512		11/21/2017 19:38	50	TAL BUF	KMN
A:8260C	480-127654-D-9 MS		480-388512		11/21/2017 19:38	50	TAL BUF	KMN
P:3005A	280-103491-A-7-E MS		280-397056	280-396780	11/29/2017 14:23	1	TAL DEN	MLS
A:6010D	280-103491-A-7-E MS		280-397056	280-396780	11/29/2017 21:58	1	TAL DEN	CML
P:3005A	280-103491-A-7-E MS		280-397251	280-396780	11/29/2017 14:23	1	TAL DEN	MLS
A:6010D	280-103491-A-7-E MS		280-397251	280-396780	11/30/2017 15:33	1	TAL DEN	CML
P:3005A	280-103730-F-1-B MS		280-397048	280-396777	11/29/2017 14:23	1	TAL DEN	MLS
A:6020B	280-103730-F-1-B MS		280-397048	280-396777	11/29/2017 23:26	1	TAL DEN	LMT
A:300.0	280-103666-A-1 MS		280-398208		12/10/2017 12:02	10	TAL DEN	JML
A:300.0	280-103781-B-1 MS		280-398208		12/10/2017 15:35	1	TAL DEN	JML
A:300.0	280-103639-Q-1 MS		280-398268		12/12/2017 02:32	10	TAL DEN	JML
A:350.1	280-103543-C-1 MS		280-397335		12/01/2017 13:29	1	TAL DEN	KAM
A:410.4	280-103786-B-1 MS		280-397430		12/04/2017 10:34	2	TAL DEN	CCJ
A:SM 5310B	280-103653-B-1 MS		280-398382		12/11/2017 15:16	1	TAL DEN	CCJ

# Quality Control Results

Client: Waste Management

Job Number: 280-103734-1

## Laboratory Chronicle

Lab ID: MSD

Client ID: N/A

Sample Date/Time: 11/13/2017 11:21 Received Date/Time: 11/14/2017 08:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-103543-J-1 MSD		280-396651		11/27/2017 21:39	1	TAL DEN	MRM
A:8260B SIM	280-103543-J-1 MSD		280-396651		11/27/2017 21:39	1	TAL DEN	MRM
P:5030C	480-127654-D-9 MSD		480-388512		11/21/2017 20:06	50	TAL BUF	KMN
A:8260C	480-127654-D-9 MSD		480-388512		11/21/2017 20:06	50	TAL BUF	KMN
P:3005A	280-103491-A-7-F MSD		280-397056	280-396780	11/29/2017 14:23	1	TAL DEN	MLS
A:6010D	280-103491-A-7-F MSD		280-397056	280-396780	11/29/2017 22:01	1	TAL DEN	CML
P:3005A	280-103491-A-7-F MSD		280-397251	280-396780	11/29/2017 14:23	1	TAL DEN	MLS
A:6010D	280-103491-A-7-F MSD		280-397251	280-396780	11/30/2017 15:36	1	TAL DEN	CML
P:3005A	280-103730-F-1-C MSD		280-397048	280-396777	11/29/2017 14:23	1	TAL DEN	MLS
A:6020B	280-103730-F-1-C MSD		280-397048	280-396777	11/29/2017 23:30	1	TAL DEN	LMT
A:300.0	280-103666-A-1 MSD		280-398208		12/10/2017 12:55	10	TAL DEN	JML
A:300.0	280-103781-B-1 MSD		280-398208		12/10/2017 16:29	1	TAL DEN	JML
A:300.0	280-103639-Q-1 MSD		280-398268		12/12/2017 02:50	10	TAL DEN	JML
A:350.1	280-103543-C-1 MSD		280-397335		12/01/2017 13:31	1	TAL DEN	KAM
A:410.4	280-103786-B-1 MSD		280-397430		12/04/2017 10:34	2	TAL DEN	CCJ
A:SM 5310B	280-103653-B-1 MSD		280-398382		12/11/2017 15:35	1	TAL DEN	CCJ

Lab ID: DU

Client ID: N/A

Sample Date/Time: 11/15/2017 10:05 Received Date/Time: 11/16/2017 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:300.0	280-103666-A-1 DU		280-398208		12/10/2017 11:44	10	TAL DEN	JML
A:300.0	280-103781-B-1 DU		280-398208		12/10/2017 15:17	1	TAL DEN	JML
A:300.0	280-103639-Q-1 DU		280-398268		12/12/2017 02:14	10	TAL DEN	JML
A:SM 2540C	280-103730-A-2 DU		280-395903		11/20/2017 11:56	1	TAL DEN	JAP

### Lab References:

TAL BUF = TestAmerica Buffalo

TAL DEN = TestAmerica Denver

Chain of Custody Record

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

**Client Information**  
 Client Contact: Mr. Charles Luckie  
 Company: Olympic View Transfer Station  
 Address: 9300 Southwest Barney White Road  
 City: Bremerton  
 State/Zip: WA, 98312  
 Phone: 602 940 2980  
 Email: [Slobar@ssservices.com](mailto:Slobar@ssservices.com)  
 Project Name: WAO2(Olympic View Sanitary LF)  
 Site: Washington

Sampler: Sam G.  
 Lab PM: Sara, Betsy A  
 Phone: 602 940 2980  
 E-Mail: [betsy.sara@testamericainc.com](mailto:betsy.sara@testamericainc.com)  
 Carrier Tracking No(s): 4150 9259 1459  
 Job #: 04204027.20

**Analysis Requested**

Due Date Requested: Standard  
 TAT Requested (days):  
 PO #:  
 W/O #:  
 Project #: 28002692-Annual OBWL-TB/L-INF App III -Dec  
 SSSW#:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=organic, LT=Tissue Acid)	8260B.VOA	8260B.SIM - Vinyl chloride	C/SO4/A/kc/TDS	Dissolved Metals	Ammonia/NOX/TOC	Total Number of Containers	Special Instructions/Note:
OBWL-TD	11/15/17	1140	G	W	XX	XX	XX	XX			
L-INF	↓	1245	G	W	XX	XX	XX	XX			
Trip blank	↓	-	-	W	XX	XX	XX	XX		2	

**Sample Identification**: OBWL-TD, L-INF, Trip blank  
**Sample Date**: 11/15/17, ↓, ↓  
**Sample Time**: 1140, 1245, -  
**Sample Type**: G, G, -  
**Matrix**: W, W, W  
**Analysis Results**: 8260B.VOA, 8260B.SIM - Vinyl chloride, C/SO4/A/kc/TDS, Dissolved Metals, Ammonia/NOX/TOC  
**Total Number of Containers**: 2

**Special Instructions/Note:**  
 280-103734 Chain of Custody

**Preservation Codes:**  
 A - HCL  
 B - NaOH  
 C - Zn Acetate  
 D - Nitric Acid  
 E - NaHSO4  
 F - MeOH  
 G - Anchlor  
 H - Ascorbic Acid  
 I - Ice  
 J - DI Water  
 K - EDTA  
 L - EDTA  
 M - Hexane  
 N - None  
 O - ASNaO2  
 P - Na2SO4S  
 Q - Na2SO3  
 R - Na2S2O3  
 S - H2SO4  
 T - TSP Dodecahydrate  
 U - Acetone  
 V - MCAA  
 W - ph 4-5  
 Z - other (specify)  
 Other:

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

**Possible Hazard Identification**  
 Non-Hazard  
 Flammable  
 Skin Irritant  
 Poison B  
 Unknown  
 Radiological  
**Deliverable Requested:** I, II, III, IV, Other (specify)

**Empty Kit Relinquished by:**  
 Relinquished by: [Signature]  
 Relinquished by: [Signature]  
 Relinquished by: [Signature]

**Relinquished by:**  
 Date/Time: 11/15/17 1600  
 Company: SCS Company

**Received by:**  
 Date/Time: 11/17/17 0900  
 Company: TAD Company

**Custody Seal No.:** 402651  
**Transferred by:** AIG 11/17/17

# FIELD INFORMATION FORM



Site Name: DUSE  
 Site No.: 08WLT0  
 Sample Point: 08WLT0  
 Sample ID

**This Waste Management Field Information Form is Required**  
 This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID: \_\_\_\_\_

**PURGE INFO**

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOL PURGED
11/15/17					

*Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below.*

**PURGE/SAMPLE EQUIPMENT**

Purging and Sampling Equipment... Dedicated:  Y or  N

Filter Device:  Y or  N | 0.45 μ or \_\_\_\_\_ μ (circle or fill in)

Purging Device:  A-Submersible Pump |  D-Bailer  
 B-Peristaltic Pump |  E-Piston Pump  
 C-QED Bladder Pump |  F-Dipper/Bottle

Filter Type: A | A-In-line Disposable | C-Vacuum  
 B-Pressure |  X-Other

Sampling Device: D | A-Teflon | C-PVC | X-Other: \_\_\_\_\_  
 X-Other: \_\_\_\_\_ | B-Stainless Steel | D-Polypropylene

Sample Tube Type: \_\_\_\_\_

**WELL DATA**

Well Elevation (at TOC) \_\_\_\_\_ (ft/msl) | Depth to Water (DTW) (from TOC) \_\_\_\_\_ (ft) | Groundwater Elevation (site datum, from TOC) \_\_\_\_\_ (ft/msl)

Total Well Depth (from TOC) \_\_\_\_\_ (ft) | Stick Up (from ground elevation) \_\_\_\_\_ (ft) | Casing ID \_\_\_\_\_ (in) | Casing Material \_\_\_\_\_

*Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by State/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.*

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (μmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
11:40	1 <sup>st</sup>	9.7	4818	10.40	6.02	5.47	490.9	
	2 <sup>nd</sup>							
	3 <sup>rd</sup>							
	4 <sup>th</sup>							

Suggested range for 3 consec. readings or note Permit/State requirements:  
 pH: +/- 0.2 | Conductance: +/- 3% | Temp: -- | Turbidity: -- | D.O.: +/- 10% | eH/ORP: +/- 25 mV | DTW: Stabilize

*Stabilization Data Fields are Optional (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/State. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

**FIELD DATA**

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (μmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: _____
11/15/17	9.7	4818	10.40	6.02	5.47	490.9	

*Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/State).*

Sample Appearance: clear | Odor: yes | Color: off white | Other: -

Weather Conditions (required daily, or as conditions change): \_\_\_\_\_ | Direction/Speed: - | Outlook: cloudy | Precipitation:  Y or  N

Specific Comments (including purge/well volume calculations if required):

**FIELD COMMENTS**

small to moderate amount of floating black particulates in sample.

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date: 11.15.17 | Name: Sam Gruber | Signature: \_\_\_\_\_ | Company: SES

# FIELD INFORMATION FORM



Site Name: CUSC

Site No.: 

--	--	--	--	--	--

 Sample Point: L-ENFI Sample ID

This Waste Management Field Information Form is Required. This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID: \_\_\_\_\_

**PURGE INFO**

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLS PURGED
<u>11/15/17</u>	<u>  :  :  </u>	<u>  :  </u>	<u>  </u>	<u>  </u>	<u>  </u>

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ "Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark changes, record field data, below."

**PURGE/SAMPLE EQUIPMENT**

Purging and Sampling Equipment... Dedicated:  Y or  N

Filter Device:  Y or  N    0.45 μ or \_\_\_\_\_ μ (circle or fill in)

Purging Device:  F    A-Submersible Pump    D-Bailer  
 B    B-Peristaltic Pump    E-Piston Pump  
 C    C-QED Bladder Pump    F-Dipper/Bottle

Filter Type: A

Sampling Device:  F    A-Teflon    C-PVC    X-Other: \_\_\_\_\_  
 X-Other: \_\_\_\_\_    B-Stainless Steel    D-Polypropylene

Sample Tube Type: \_\_\_\_\_

**WELL DATA**

Well Elevation (at TOC) \_\_\_\_\_ (ft/msl)    Depth to Water (DTW) (from TOC) \_\_\_\_\_ (ft)    Groundwater Elevation (site datum, from TOC) \_\_\_\_\_ (ft/msl)

Total Well Depth (from TOC) \_\_\_\_\_ (ft)    Stick Up (from ground elevation) \_\_\_\_\_ (ft)    Casing ID \_\_\_\_\_ (in)    Casing Material \_\_\_\_\_

Note: Total Well Depth, Stick Up, Casing Id, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and Groundwater Elevation must be current.

**STABILIZATION DATA (Optional)**

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (umhos/cm@25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
<u>1121415</u>	<u>  </u>	<u>7.28</u>	<u>4588</u>	<u>11.45</u>	<u>28.02</u>	<u>1.56</u>	<u>730</u>	<u>  </u>
	1 <sup>st</sup>							
	2 <sup>nd</sup>							
	3 <sup>rd</sup>							
	4 <sup>th</sup>							

Suggested range for 3 consec. readings or note Conn/State requirements:  
pH: +/- 0.2    Conductance: +/- 3%    Temp: -    Turbidity: -    D.O.: +/- 10%    eH/ORP: +/- 25 mV    DTW: Stabilize

Stabilization Data Fields are Optional (i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.

**FIELD DATA**

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
<u>11/15/17</u>	<u>7.28</u>	<u>4588</u>	<u>11.45</u>	<u>28.02</u>	<u>1.56</u>	<u>730</u>	

Final Field Readings are required (i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)

Sample Appearance: L. yellow    Odor: yes    Color: L. yellow    Other: \_\_\_\_\_

Weather Conditions (required daily, or as conditions change): \_\_\_\_\_    Direction/Speed: \_\_\_\_\_    Outlook: rain    Precipitation:  Y or  N

Specific Comments (Including purge/well volume calculations if required): \_\_\_\_\_

FIELD COMMENTS

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

11/15/17    Sam Graber          SCS

Date    Name    Signature    Company



## Chain of Custody Record



**Client Information (Sub Contract Lab)**  
 Client Contact: Sara, Betsy A  
 Shipping/Receiving: betsy.sara@testamericainc.com  
 Company: TestAmerica Laboratories, Inc.  
 Address: 10 Hazelwood Drive, NELAP - Oregon  
 City: Arnhemst  
 State, Zip: NY, 14228-2298  
 Phone: 716-691-2600 (Tel) 716-691-7991 (Fax)  
 Email:  
 Project Name: WA02(Olympic View Sanitary LF)  
 Site: WA02(Olympic View Sanitary LF)

**Due Date Requested:** 12/6/2017  
**TAT Requested (days):**  
**PO #:**  
**WO #:**  
**Project #:** 28002692  
**SSOW#:**

**Sampler:** Sara, Betsy A  
**Lab PM:** Sara, Betsy A  
**Carrier Tracking No(s):**  
**State of Origin:** Washington  
**Page:** Page 1 of 1  
**Job #:** 280-103734-1  
**COC No:** 280-419923.1

**Analysis Requested**

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=tissue, A=air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C/5030C (MOD) Appendix II Volatiles	Total Number of Containers	Special Instructions/Note:
OBWL-TD (280-103734-1)	11/15/17	11:40 Pacific	Water	Water	X		X	3	
L-INF (280-103734-2)	11/15/17	12:45 Pacific	Water	Water	X		X	3	
TRIP BLANK (280-103734-3)	11/15/17	Pacific	Water	Water	X		X	1	

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

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

**Possible Hazard Identification**  
 Return To Client  
 Disposal By Lab  
 Archive For Months

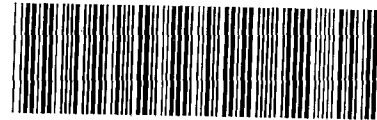
**Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**  
 Special Instructions/QC Requirements:

**Primary Deliverable Rank: 2**

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

**Empty Kit Relinquished by:** [Signature]  
 Date: 11/17/17  
 Company: [Company]  
 Relinquished by: [Signature]  
 Date/Time: [Date/Time]  
 Company: [Company]  
 Relinquished by: [Signature]  
 Date/Time: [Date/Time]  
 Company: [Company]  
 Custody Seals Intact: [Signature]  
 Custody Seal No.: [Signature]

## COOLER RECEIPT FORM



280-103734 Chain of Custody

Cooler Received/Opened On 11/20/2017@ 830

Time Samples Removed From Cooler \_\_\_\_\_ Time Samples Placed In Storage \_\_\_\_\_ (2 Hour Window)

1. Tracking # 4170 29329452 (last 4 digits, FedEx) Courier: FedEx  
IR Gun ID 31470366 pH Strip Lot \_\_\_\_\_ Chlorine Strip Lot \_\_\_\_\_
2. Temperature of rep. sample or temp blank when opened: 13.6 Degrees Celsius
3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA
4. Were custody seals on outside of cooler? YES...NO...NA  
If yes, how many and where: 1 front
5. Were the seals intact, signed, and dated correctly? YES...NO...NA
6. Were custody papers inside cooler? YES...NO...NA  
EIA
- I certify that I opened the cooler and answered questions 1-6 (Initial) \_\_\_\_\_
7. Were custody seals on containers: YES NO and Intact YES...NO...NA  
Were these signed and dated correctly? YES...NO...NA
8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None
9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None Water only
10. Did all containers arrive in good condition (unbroken)? YES...NO...NA
11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA
12. Did all container labels and tags agree with custody papers? YES...NO...NA
- 13a. Were VOA vials received? YES...NO...NA
- b. Was there any observable headspace present in any VOA vial? YES...NO...NA



Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # NA

I certify that I unloaded the cooler and answered questions 7-14 (initial) EIA

- 15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA  
b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA
16. Was residual chlorine present? YES...NO...NA  
EIA
- I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) \_\_\_\_\_
17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA
18. Did you sign the custody papers in the appropriate place? YES...NO...NA
19. Were correct containers used for the analysis requested? YES...NO...NA
20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) EIA

I certify that I attached a label with the unique LIMS number to each container (initial) EIA

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...# \_\_\_\_\_

Chain of Custody Record

Loc: 280  
 103734

<b>Client Information (Sub Contract Lab)</b>				Sampler: Lab P/W: Sara, Betsy A					
Client Contact: TestAmerica Laboratories, Inc				Phone: E-Mail: betsy.sara@testamericainc.com					
Shipping/Receiving				State of Origin: Washington					
Company: TestAmerica Laboratories, Inc				Accreditations Required (See note): NELAP - Oregon					
Address: 2960 Foster Creighton Drive,				Due Date Requested: 12/6/2017					
City: Nashville				TAT Requested (days):					
State, Zip: TN, 37204				PO #:					
Phone: 615-726-0177(Tel) 615-726-3404(Fax)				WO #:					
Email:				Project #:					
Project Name: WAO2 Olympic View Sanitary LF				28002692					
Site: WAO2 Olympic View Sanitary LF				SSOW#:					
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waterfill)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C SIM/5030C (MOD) Local Method	Total Number of Containers	Special Instructions/Note:
OBWL-TD (280-103734-1)	11/15/17	11:40 Pacific	Water	Water	X	X	X	3	
L-INF (280-103734-2)	11/15/17	12:45 Pacific	Water	Water	X	X	X	3	
TRIP BLANK (280-103734-3)	11/15/17	11:45 Pacific	Water	Water	X	X	X	1	

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  
 Other:

Analysis Requested:

Preservation Codes:  
 M - Hexane  
 N - None  
 O - AsNaO2  
 P - Na2O4S  
 Q - Na2SO3  
 R - Na2SO4  
 S - H2SO4  
 T - TSP Dodecahydrate  
 U - Acetone  
 V - MCAA  
 W - PH 4-6  
 L - EDA  
 Z - other (specify)

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

Special Instructions/QC Requirements:

Primary Deliverable Rank: 2

Date: 11/17/17 17:45  
 Relinquished by: [Signature] Company  
 Date/Time:  
 Relinquished by: [Signature] Company  
 Date/Time:  
 Relinquished by: [Signature] Company  
 Date/Time:  
 Custody Seal No.:  
 Custody Seals Intact:  Yes  No  
 Other Remarks: 13.6

# Login Sample Receipt Checklist

Client: Waste Management

Job Number: 280-103734-1

**Login Number: 103734**  
**List Number: 1**  
**Creator: Gomez, Alyssa I**

**List Source: TestAmerica Denver**

<b>Question</b>	<b>Answer</b>	<b>Comment</b>
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

## Login Sample Receipt Checklist

Client: Waste Management

Job Number: 280-103734-1

**Login Number: 103734**  
**List Number: 3**  
**Creator: Hulbert, Michael J**

**List Source: TestAmerica Buffalo**  
**List Creation: 11/20/17 01:39 PM**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.3 #1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	False	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	



## ANALYTICAL REPORT

Job Number: 280-103956-1

Job Description: WA02|Olympic View Sanitary LF

For:

Waste Management

2615 Davis Street

San Leandro, CA 94577

Attention: Mr. Patrick Madej



Approved for release.  
Betsy A Sara  
Project Manager II  
12/19/2017 11:44 AM

---

Betsy A Sara, Project Manager II  
4955 Yarrow Street, Arvada, CO, 80002  
(303)736-0189  
betsy.sara@testamericainc.com  
12/19/2017

cc: Mr. Dan Venchiarutti

The test results in this report relate only to the samples in this report and meet all requirements of NELAP, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

**TestAmerica Laboratories, Inc.**

TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002  
Tel (303) 736-0100 Fax (303) 431-7171 [www.testamericainc.com](http://www.testamericainc.com)



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## CASE NARRATIVE

**Client: Waste Management**

**Project: WA02|Olympic View Sanitary LF**

**Report Number: 280-103956-1**

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

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

### **Sample Receiving**

The sample was received on 11/24/2017; the sample arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 1.0 C.

### **Holding Times**

Due to a delay in FedEx delivery, the 48 hour holding time for BOD for sample LP-LCD expired prior to receipt. The laboratory proceeded with the analysis. The client was notified on 11/24/2017.

All other holding times were within established control limits.

### **Method Blanks**

Total Calcium and Total Magnesium Method 6010D were detected in the Method Blank above the project established reporting limits, however, the requested reporting limits for Total Calcium and Total Magnesium are below TestAmerica Denver's standard reporting limits and, therefore, no corrective action has been taken for this anomaly. It must be noted that results reported below TestAmerica Denver's standard reporting limits may result in false positive/false negative results, less accurate quantitation and potential misidentification at the lower concentrations.

Total Manganese and Total Sodium Method 6010D were detected in the Method Blanks below the project established reporting limits. No corrective action is taken for any values in Method Blanks that are below the requested reporting limits.

All other Method Blank recoveries were within established control limits.

### **Laboratory Control Samples (LCS)**

All Laboratory Control Samples were within established control limits.

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

All MS and MSD samples were within established control limits.

## EXECUTIVE SUMMARY - Detections

Client: Waste Management

Job Number: 280-103956-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-103956-1</b>	<b>LP-LCD</b>					
Chloride		680		5.0	mg/L	300.0
Sulfate		300		5.0	mg/L	300.0
Ammonia (as N)		1.7		0.15	mg/L	350.1
Chemical Oxygen Demand (COD)		170		20	mg/L	410.4
Alkalinity		720		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		720		5.0	mg/L	SM 2320B
Total Dissolved Solids (TDS)		2500		20	mg/L	SM 2540C
Total Organic Carbon - Average		57		2.0	mg/L	SM 5310B
<b><i>Total Recoverable</i></b>						
Calcium, Total		73	B	0.040	mg/L	6010D
Iron, Total		0.12		0.060	mg/L	6010D
Magnesium, Total		41	B	0.050	mg/L	6010D
Manganese, Total		0.58	B	0.050	mg/L	6010D
Potassium, Total		69		1.0	mg/L	6010D
Sodium, Total		720	B	1.0	mg/L	6010D

## METHOD SUMMARY

Client: Waste Management

Job Number: 280-103956-1

Description	Lab Location	Method	Preparation Method
<b>Matrix: Water</b>			
Metals (ICP)	TAL DEN	SW846 6010D	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Anions, Ion Chromatography	TAL DEN	MCAWW 300.0	
Nitrogen, Ammonia	TAL DEN	MCAWW 350.1	
COD	TAL DEN	MCAWW 410.4	
Alkalinity	TAL DEN	SM SM 2320B	
Solids, Total Dissolved (TDS)	TAL DEN	SM SM 2540C	
Organic Carbon, Total (TOC)	TAL DEN	SM SM 5310B	
BOD, 5 Day	TAL DEN	SM SM5210B	

### Lab References:

TAL DEN = TestAmerica Denver

### Method References:

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.

## METHOD / ANALYST SUMMARY

Client: Waste Management

Job Number: 280-103956-1

<b>Method</b>	<b>Analyst</b>	<b>Analyst ID</b>
SW846 6010D	Lackey, Cara M	CML
MCAWW 300.0	Phan, Thu L	TLP
MCAWW 350.1	Moore, Kevin A	KAM
MCAWW 410.4	Jewell, Connie C	CCJ
SM SM 2320B	Duplin, Alysha 1	A1D
SM SM 2540C	Pedrick, Joshua A	JAP
SM SM 5310B	Jewell, Connie C	CCJ
SM SM5210B	Martinez, Rut S	RSM

**SAMPLE SUMMARY**

Client: Waste Management

Job Number: 280-103956-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
280-103956-1	LP-LCD	Water	11/21/2017 1130	11/24/2017 0900

# SAMPLE RESULTS

## Analytical Data

Client: Waste Management

Job Number: 280-103956-1

**Client Sample ID:** LP-LCD

Lab Sample ID: 280-103956-1

Client Matrix: Water

Date Sampled: 11/21/2017 1130

Date Received: 11/24/2017 0900

---

### 6010D Metals (ICP)-Total Recoverable

Analysis Method:	6010D	Analysis Batch:	280-397558	Instrument ID:	MT_025
Prep Method:	3005A	Prep Batch:	280-397209	Lab File ID:	25B120417.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	12/04/2017 1915			Final Weight/Volume:	50 mL
Prep Date:	12/01/2017 1510				

Analyte	Result (mg/L)	Qualifier	MDL	RL
Calcium, Total	73	B	0.035	0.040
Iron, Total	0.12		0.022	0.060
Magnesium, Total	41	B	0.011	0.050
Manganese, Total	0.58	B	0.00026	0.050
Potassium, Total	69		0.24	1.0
Sodium, Total	720	B	0.12	1.0

Client: Waste Management

Job Number: 280-103956-1

General Chemistry

Client Sample ID: LP-LCD

Lab Sample ID: 280-103956-1

Date Sampled: 11/21/2017 1130

Client Matrix: Water

Date Received: 11/24/2017 0900

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Chloride	680		mg/L	5.0	5.0	5.0	300.0
	Analysis Batch: 280-398660		Analysis Date: 12/14/2017 1619				
Sulfate	300		mg/L	5.0	5.0	5.0	300.0
	Analysis Batch: 280-398660		Analysis Date: 12/14/2017 1619				
Ammonia (as N)	1.7		mg/L	0.15	0.15	5.0	350.1
	Analysis Batch: 280-397642		Analysis Date: 12/05/2017 1518				
Chemical Oxygen Demand (COD)	170		mg/L	20	20	2.0	410.4
	Analysis Batch: 280-397886		Analysis Date: 12/07/2017 0955				
Alkalinity	720		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-397409		Analysis Date: 12/01/2017 1258				
Bicarbonate Alkalinity as CaCO3	720		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 280-397409		Analysis Date: 12/01/2017 1258				
Total Dissolved Solids (TDS)	2500		mg/L	20	20	1.0	SM 2540C
	Analysis Batch: 280-396562		Analysis Date: 11/27/2017 0803				
Total Organic Carbon - Average	57		mg/L	2.0	2.0	2.0	SM 5310B
	Analysis Batch: 280-399183		Analysis Date: 12/18/2017 1949				
Biochemical Oxygen Demand	ND	H	mg/L	10	10	5.0	SM5210B
	Analysis Batch: 280-396398		Analysis Date: 11/24/2017 1420				



## DATA REPORTING QUALIFIERS

Client: Waste Management

Job Number: 280-103956-1

<b>Lab Section</b>	<b>Qualifier</b>	<b>Description</b>
Metals	B	Compound was found in the blank and sample.
	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.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
General Chemistry	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.
	H	Sample was prepped or analyzed beyond the specified holding time

# QUALITY CONTROL RESULTS

## Quality Control Results

Client: Waste Management

Job Number: 280-103956-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Prep Batch: 280-397209</b>					
LCS 280-397209/2-A	Lab Control Sample	R	Water	3005A	
MB 280-397209/1-A	Method Blank	R	Water	3005A	
280-103956-1	LP-LCD	R	Water	3005A	
280-103956-1MS	Matrix Spike	R	Water	3005A	
280-103956-1MSD	Matrix Spike Duplicate	R	Water	3005A	
<b>Analysis Batch:280-397558</b>					
LCS 280-397209/2-A	Lab Control Sample	R	Water	6010D	280-397209
MB 280-397209/1-A	Method Blank	R	Water	6010D	280-397209
280-103956-1	LP-LCD	R	Water	6010D	280-397209
280-103956-1MS	Matrix Spike	R	Water	6010D	280-397209
280-103956-1MSD	Matrix Spike Duplicate	R	Water	6010D	280-397209

#### Report Basis

R = Total Recoverable

## Quality Control Results

Client: Waste Management

Job Number: 280-103956-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-396398</b>					
LCS 280-396398/3	Lab Control Sample	T	Water	SM5210B	
MB 280-396398/4	Method Blank	T	Water	SM5210B	
280-103956-1	LP-LCD	T	Water	SM5210B	
280-103956-1DU	Duplicate	T	Water	SM5210B	
<b>Analysis Batch:280-396562</b>					
LCS 280-396562/2	Lab Control Sample	T	Water	SM 2540C	
MB 280-396562/1	Method Blank	T	Water	SM 2540C	
280-103956-1	LP-LCD	T	Water	SM 2540C	
280-103956-1DU	Duplicate	T	Water	SM 2540C	
<b>Analysis Batch:280-397409</b>					
LCS 280-397409/30	Lab Control Sample	T	Water	SM 2320B	
MB 280-397409/31	Method Blank	T	Water	SM 2320B	
280-103915-A-3 DU	Duplicate	T	Water	SM 2320B	
280-103956-1	LP-LCD	T	Water	SM 2320B	
<b>Analysis Batch:280-397642</b>					
LCS 280-397642/18	Lab Control Sample	T	Water	350.1	
LCSD 280-397642/19	Lab Control Sample Duplicate	T	Water	350.1	
MB 280-397642/20	Method Blank	T	Water	350.1	
280-103956-1	LP-LCD	T	Water	350.1	
<b>Analysis Batch:280-397886</b>					
LCS 280-397886/3	Lab Control Sample	T	Water	410.4	
LCSD 280-397886/4	Lab Control Sample Duplicate	T	Water	410.4	
MB 280-397886/5	Method Blank	T	Water	410.4	
280-103953-B-1 MS	Matrix Spike	T	Water	410.4	
280-103953-B-1 MSD	Matrix Spike Duplicate	T	Water	410.4	
280-103956-1	LP-LCD	T	Water	410.4	
<b>Analysis Batch:280-398660</b>					
LCS 280-398660/4	Lab Control Sample	T	Water	300.0	
LCSD 280-398660/5	Lab Control Sample Duplicate	T	Water	300.0	
MB 280-398660/6	Method Blank	T	Water	300.0	
280-103956-1	LP-LCD	T	Water	300.0	
280-103956-1DU	Duplicate	T	Water	300.0	
280-103956-1MS	Matrix Spike	T	Water	300.0	
280-103956-1MSD	Matrix Spike Duplicate	T	Water	300.0	

## Quality Control Results

Client: Waste Management

Job Number: 280-103956-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-399183</b>					
LCS 280-399183/3	Lab Control Sample	T	Water	SM 5310B	
MB 280-399183/4	Method Blank	T	Water	SM 5310B	
280-103956-1	LP-LCD	T	Water	SM 5310B	
280-104021-D-3 MS	Matrix Spike	T	Water	SM 5310B	
280-104021-D-3 MSD	Matrix Spike Duplicate	T	Water	SM 5310B	

#### Report Basis

T = Total

## Quality Control Results

Client: Waste Management

Job Number: 280-103956-1

**Method Blank - Batch: 280-397209**

Lab Sample ID: MB 280-397209/1-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/04/2017 1909  
 Prep Date: 12/01/2017 1510  
 Leach Date: N/A

Analysis Batch: 280-397558  
 Prep Batch: 280-397209  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6010D  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_025  
 Lab File ID: 25B120417.asc  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Calcium, Total	0.0815		0.035	0.040
Iron, Total	ND		0.022	0.060
Magnesium, Total	0.0502		0.011	0.050
Manganese, Total	0.000360	J	0.00026	0.050
Potassium, Total	ND		0.24	1.0
Sodium, Total	0.183	J	0.12	1.0

**Lab Control Sample - Batch: 280-397209**

Lab Sample ID: LCS 280-397209/2-A  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/04/2017 1912  
 Prep Date: 12/01/2017 1510  
 Leach Date: N/A

Analysis Batch: 280-397558  
 Prep Batch: 280-397209  
 Leach Batch: N/A  
 Units: mg/L

**Method: 6010D  
 Preparation: 3005A  
 Total Recoverable**

Instrument ID: MT\_025  
 Lab File ID: 25B120417.asc  
 Initial Weight/Volume: 50 mL  
 Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Calcium, Total	50.0	48.7	97	90 - 111	
Iron, Total	1.00	1.01	101	89 - 115	
Magnesium, Total	50.0	49.0	98	90 - 113	
Manganese, Total	0.500	0.500	100	90 - 110	
Potassium, Total	50.0	51.9	104	89 - 114	
Sodium, Total	50.0	52.7	105	90 - 115	

## Quality Control Results

Client: Waste Management

Job Number: 280-103956-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-397209**

**Method: 6010D  
Preparation: 3005A  
Total Recoverable**

MS Lab Sample ID: 280-103956-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 12/04/2017 1920  
Prep Date: 12/01/2017 1510  
Leach Date: N/A

Analysis Batch: 280-397558  
Prep Batch: 280-397209  
Leach Batch: N/A

Instrument ID: MT\_025  
Lab File ID: 25B120417.asc  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-103956-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 12/04/2017 1922  
Prep Date: 12/01/2017 1510  
Leach Date: N/A

Analysis Batch: 280-397558  
Prep Batch: 280-397209  
Leach Batch: N/A

Instrument ID: MT\_025  
Lab File ID: 25B120417.asc  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Calcium, Total	95	99	48 - 153	1	20		
Iron, Total	104	107	52 - 155	3	20		
Magnesium, Total	94	97	62 - 146	2	20		
Manganese, Total	93	97	79 - 121	2	20		
Potassium, Total	103	106	76 - 132	1	20		
Sodium, Total	107	101	70 - 203	0	20	4	4

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-397209**

**Method: 6010D  
Preparation: 3005A  
Total Recoverable**

MS Lab Sample ID: 280-103956-1      Units: mg/L  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 12/04/2017 1920  
Prep Date: 12/01/2017 1510  
Leach Date: N/A

MSD Lab Sample ID: 280-103956-1  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 12/04/2017 1922  
Prep Date: 12/01/2017 1510  
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS		MSD	
				Result/Qual	Result/Qual	Result/Qual	Result/Qual
Calcium, Total	73	50.0	50.0	121	123		
Iron, Total	0.12	1.00	1.00	1.16	1.19		
Magnesium, Total	41	50.0	50.0	87.9	89.2		
Manganese, Total	0.58	0.500	0.500	1.05	1.07		
Potassium, Total	69	50.0	50.0	120	121		
Sodium, Total	720	50.0	50.0	772	769	4	4

## Quality Control Results

Client: Waste Management

Job Number: 280-103956-1

**Method Blank - Batch: 280-398660**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MB 280-398660/6	Analysis Batch: 280-398660	Instrument ID: WC_IonChrom8
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 06.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/14/2017 0845	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Chloride	ND		1.0	1.0
Sulfate	ND		1.0	1.0

**Method Reporting Limit Check - Batch: 280-398660**

**Method: 300.0**  
**Preparation: N/A**

Lab Sample ID: MRL 280-398660/3	Analysis Batch: 280-398660	Instrument ID: WC_IonChrom8
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 03.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/14/2017 0755	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	2.50	ND	107	50 - 150	
Sulfate	2.50	ND	101	50 - 150	

**Lab Control Sample/**

**Lab Control Sample Duplicate Recovery Report - Batch: 280-398660**

**Method: 300.0**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-398660/4	Analysis Batch: 280-398660	Instrument ID: WC_IonChrom8
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 04.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/14/2017 0812	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-398660/5	Analysis Batch: 280-398660	Instrument ID: WC_IonChrom8
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 05.0000.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 12/14/2017 0828	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Chloride	100	100	90 - 110	0	10		
Sulfate	99	99	90 - 110	0	10		



## Quality Control Results

Client: Waste Management

Job Number: 280-103956-1

**Laboratory Control/  
Laboratory Duplicate Data Report - Batch: 280-398660**

**Method: 300.0  
Preparation: N/A**

LCS Lab Sample ID: LCS 280-398660/4      Units: mg/L  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/14/2017 0812  
 Prep Date: N/A  
 Leach Date: N/A

LCSD Lab Sample ID: LCSD 280-398660/5  
 Client Matrix: Water  
 Dilution: 1.0  
 Analysis Date: 12/14/2017 0828  
 Prep Date: N/A  
 Leach Date: N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Chloride	100	100	99.5	99.6
Sulfate	100	100	98.8	98.9

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-398660**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-103956-1  
 Client Matrix: Water  
 Dilution: 5.0  
 Analysis Date: 12/14/2017 1652  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-398660  
 Prep Batch: N/A  
 Leach Batch: N/A

Instrument ID: WC\_IonChrom8  
 Lab File ID: 35.0000.d  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL  
 25 uL

MSD Lab Sample ID: 280-103956-1  
 Client Matrix: Water  
 Dilution: 5.0  
 Analysis Date: 12/14/2017 1709  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-398660  
 Prep Batch: N/A  
 Leach Batch: N/A

Instrument ID: WC\_IonChrom8  
 Lab File ID: 36.0000.d  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL  
 25 uL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Chloride	107	105	80 - 120	0	20	4	4
Sulfate	102	101	80 - 120	0	20		

## Quality Control Results

Client: Waste Management

Job Number: 280-103956-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-398660**

**Method: 300.0  
Preparation: N/A**

MS Lab Sample ID: 280-103956-1  
 Client Matrix: Water  
 Dilution: 5.0  
 Analysis Date: 12/14/2017 1652  
 Prep Date: N/A  
 Leach Date: N/A

Units: mg/L

MSD Lab Sample ID: 280-103956-1  
 Client Matrix: Water  
 Dilution: 5.0  
 Analysis Date: 12/14/2017 1709  
 Prep Date: N/A  
 Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Chloride	680	125	125	812 4	810 4
Sulfate	300	125	125	426	424

**Duplicate - Batch: 280-398660**

**Method: 300.0  
Preparation: N/A**

Lab Sample ID: 280-103956-1  
 Client Matrix: Water  
 Dilution: 5.0  
 Analysis Date: 12/14/2017 1636  
 Prep Date: N/A  
 Leach Date: N/A

Analysis Batch: 280-398660  
 Prep Batch: N/A  
 Leach Batch: N/A  
 Units: mg/L

Instrument ID: WC\_IonChrom8  
 Lab File ID: 34.0000.d  
 Initial Weight/Volume: 5 mL  
 Final Weight/Volume: 5 mL  
 25 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Chloride	680	678	0.2	15	
Sulfate	300	299	0.3	15	

## Quality Control Results

Client: Waste Management

Job Number: 280-103956-1

**Method Blank - Batch: 280-397642**

**Method: 350.1**  
**Preparation: N/A**

Lab Sample ID: MB 280-397642/20	Analysis Batch: 280-397642	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\120517.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 12/05/2017 1504	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Ammonia (as N)	ND		0.030	0.030

**Lab Control Sample/**  
**Lab Control Sample Duplicate Recovery Report - Batch: 280-397642**

**Method: 350.1**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-397642/18	Analysis Batch: 280-397642	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\120517.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 12/05/2017 1500	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-397642/19	Analysis Batch: 280-397642	Instrument ID: WC_Alp 3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: C:\FLOW_4\120517.RS
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 12/05/2017 1502	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Ammonia (as N)	102	102	90 - 110	0	10		

**Laboratory Control/**  
**Laboratory Duplicate Data Report - Batch: 280-397642**

**Method: 350.1**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-397642/18	Units: mg/L	LCSD Lab Sample ID: LCSD 280-397642/19
Client Matrix: Water		Client Matrix: Water
Dilution: 1.0		Dilution: 1.0
Analysis Date: 12/05/2017 1500		Analysis Date: 12/05/2017 1502
Prep Date: N/A		Prep Date: N/A
Leach Date: N/A		Leach Date: N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Ammonia (as N)	2.50	2.50	2.56	2.55

## Quality Control Results

Client: Waste Management

Job Number: 280-103956-1

**Method Blank - Batch: 280-397886**

**Method: 410.4**  
**Preparation: N/A**

Lab Sample ID: MB 280-397886/5	Analysis Batch: 280-397886	Instrument ID: WC_Genesys20
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 2 mL
Analysis Date: 12/07/2017 0955	Units: mg/L	Final Weight/Volume: 2 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Chemical Oxygen Demand (COD)	ND		10	10

**Lab Control Sample/**  
**Lab Control Sample Duplicate Recovery Report - Batch: 280-397886**

**Method: 410.4**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-397886/3	Analysis Batch: 280-397886	Instrument ID: WC_Genesys20
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 12/07/2017 0955	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-397886/4	Analysis Batch: 280-397886	Instrument ID: WC_Genesys20
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 12/07/2017 0955	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Chemical Oxygen Demand (COD)	99	100	90 - 110	1	11		

**Laboratory Control/**  
**Laboratory Duplicate Data Report - Batch: 280-397886**

**Method: 410.4**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-397886/3	Units: mg/L	LCSD Lab Sample ID: LCSD 280-397886/4
Client Matrix: Water		Client Matrix: Water
Dilution: 1.0		Dilution: 1.0
Analysis Date: 12/07/2017 0955		Analysis Date: 12/07/2017 0955
Prep Date: N/A		Prep Date: N/A
Leach Date: N/A		Leach Date: N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Chemical Oxygen Demand (COD)	100	100	99.5	100

## Quality Control Results

Client: Waste Management

Job Number: 280-103956-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-397886**

**Method: 410.4  
Preparation: N/A**

MS Lab Sample ID: 280-103953-B-1 MS	Analysis Batch: 280-397886	Instrument ID: WC_Genesys20
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 5.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 12/07/2017 0955		Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-103953-B-1 MSD	Analysis Batch: 280-397886	Instrument ID: WC_Genesys20
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 5.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 12/07/2017 0955		Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Chemical Oxygen Demand (COD)	91	90	90 - 110	1	11		

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-397886**

**Method: 410.4  
Preparation: N/A**

MS Lab Sample ID: 280-103953-B-1 MS	Units: mg/L	MSD Lab Sample ID: 280-103953-B-1 MSD
Client Matrix: Water		Client Matrix: Water
Dilution: 5.0		Dilution: 5.0
Analysis Date: 12/07/2017 0955		Analysis Date: 12/07/2017 0955
Prep Date: N/A		Prep Date: N/A
Leach Date: N/A		Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Chemical Oxygen Demand (COD)	390	250	250	615	611

## Quality Control Results

Client: Waste Management

Job Number: 280-103956-1

**Method Blank - Batch: 280-397409**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: MB 280-397409/31	Analysis Batch: 280-397409	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 120117.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 12/01/2017 1047	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Alkalinity	ND		5.0	5.0
Bicarbonate Alkalinity as CaCO3	ND		5.0	5.0

**Lab Control Sample - Batch: 280-397409**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: LCS 280-397409/30	Analysis Batch: 280-397409	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 120117.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 12/01/2017 1040	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity	200	187	94	90 - 110	

**Duplicate - Batch: 280-397409**

**Method: SM 2320B**

**Preparation: N/A**

Lab Sample ID: 280-103915-A-3 DU	Analysis Batch: 280-397409	Instrument ID: WC_AT2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: alk 120117.TXT
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 12/01/2017 1101	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Alkalinity	ND	ND	NC	10	

## Quality Control Results

Client: Waste Management

Job Number: 280-103956-1

**Method Blank - Batch: 280-396562**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: MB 280-396562/1	Analysis Batch: 280-396562	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 11/27/2017 0803	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Total Dissolved Solids (TDS)	ND		5.0	5.0

**Lab Control Sample - Batch: 280-396562**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: LCS 280-396562/2	Analysis Batch: 280-396562	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 11/27/2017 0803	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Dissolved Solids (TDS)	500	502	100	86 - 110	

**Duplicate - Batch: 280-396562**

**Method: SM 2540C**  
**Preparation: N/A**

Lab Sample ID: 280-103956-1	Analysis Batch: 280-396562	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 25 mL
Analysis Date: 11/27/2017 0803	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Dissolved Solids (TDS)	2500	2530	0.2	10	

## Quality Control Results

Client: Waste Management

Job Number: 280-103956-1

**Method Blank - Batch: 280-399183**

**Method: SM 5310B**

**Preparation: N/A**

Lab Sample ID: MB 280-399183/4	Analysis Batch: 280-399183	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 121817.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 12/18/2017 1431	Units: mg/L	Final Weight/Volume:
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Total Organic Carbon - Average	ND		1.0	1.0

**Lab Control Sample - Batch: 280-399183**

**Method: SM 5310B**

**Preparation: N/A**

Lab Sample ID: LCS 280-399183/3	Analysis Batch: 280-399183	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 121817.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 12/18/2017 1414	Units: mg/L	Final Weight/Volume: 100 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon - Average	25.0	23.9	95	88 - 112	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-399183**

**Method: SM 5310B**

**Preparation: N/A**

MS Lab Sample ID: 280-104021-D-3 MS	Analysis Batch: 280-399183	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 121817.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 12/18/2017 1643		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

MSD Lab Sample ID: 280-104021-D-3 MSD	Analysis Batch: 280-399183	Instrument ID: WC_SHI3
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 121817.txt
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 12/18/2017 1658		Final Weight/Volume: 50 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Total Organic Carbon - Average	92	94	88 - 112	1	15		



# Quality Control Results

Client: Waste Management

Job Number: 280-103956-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-399183**

**Method: SM 5310B  
Preparation: N/A**

MS Lab Sample ID: 280-104021-D-3 MS      Units: mg/L  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 12/18/2017 1643  
Prep Date: N/A  
Leach Date: N/A

MSD Lab Sample ID: 280-104021-D-3 MSD  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 12/18/2017 1658  
Prep Date: N/A  
Leach Date: N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Total Organic Carbon - Average	4.6	25.0	25.0	27.7	28.1

## Quality Control Results

Client: Waste Management

Job Number: 280-103956-1

**Method Blank - Batch: 280-396398**

**Method: SM5210B**

**Preparation: N/A**

Lab Sample ID: MB 280-396398/4	Analysis Batch: 280-396398	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/24/2017 1419	Units: mg/L	Final Weight/Volume: 300 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Biochemical Oxygen Demand	ND		2.0	2.0

**Lab Control Sample - Batch: 280-396398**

**Method: SM5210B**

**Preparation: N/A**

Lab Sample ID: LCS 280-396398/3	Analysis Batch: 280-396398	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/24/2017 1419	Units: mg/L	Final Weight/Volume: 300 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Biochemical Oxygen Demand	198	176	89	85 - 115	

**Duplicate - Batch: 280-396398**

**Method: SM5210B**

**Preparation: N/A**

Lab Sample ID: 280-103956-1	Analysis Batch: 280-396398	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 5.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/24/2017 1420	Units: mg/L	Final Weight/Volume: 300 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Biochemical Oxygen Demand	ND	ND	NC	20	

## Quality Control Results

Client: Waste Management

Job Number: 280-103956-1

### Laboratory Chronicle

**Lab ID: 280-103956-1**

**Client ID: LP-LCD**

Sample Date/Time: 11/21/2017 11:30    Received Date/Time: 11/24/2017 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3005A	280-103956-E-1-A		280-397558	280-397209	12/01/2017 15:10	1	TAL DEN	MLS
A:6010D	280-103956-E-1-A		280-397558	280-397209	12/04/2017 19:15	1	TAL DEN	CML
A:300.0	280-103956-B-1		280-398660		12/14/2017 16:19	5	TAL DEN	TLP
A:350.1	280-103956-C-1		280-397642		12/05/2017 15:18	5	TAL DEN	KAM
A:410.4	280-103956-D-1		280-397886		12/07/2017 09:55	2	TAL DEN	CCJ
A:SM 2320B	280-103956-B-1		280-397409		12/01/2017 12:58	1	TAL DEN	A1D
A:SM 2540C	280-103956-B-1		280-396562		11/27/2017 08:03	1	TAL DEN	JAP
A:SM 5310B	280-103956-C-1		280-399183		12/18/2017 19:49	2	TAL DEN	CCJ
A:SM5210B	280-103956-A-1		280-396398		11/24/2017 14:20	5	TAL DEN	RSM

**Lab ID: 280-103956-1 MS**

**Client ID: LP-LCD**

Sample Date/Time: 11/21/2017 11:30    Received Date/Time: 11/24/2017 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3005A	280-103956-E-1-B MS		280-397558	280-397209	12/01/2017 15:10	1	TAL DEN	MLS
A:6010D	280-103956-E-1-B MS		280-397558	280-397209	12/04/2017 19:20	1	TAL DEN	CML
A:300.0	280-103956-B-1 MS		280-398660		12/14/2017 16:52	5	TAL DEN	TLP

**Lab ID: 280-103956-1 MSD**

**Client ID: LP-LCD**

Sample Date/Time: 11/21/2017 11:30    Received Date/Time: 11/24/2017 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3005A	280-103956-E-1-C MSD		280-397558	280-397209	12/01/2017 15:10	1	TAL DEN	MLS
A:6010D	280-103956-E-1-C MSD		280-397558	280-397209	12/04/2017 19:22	1	TAL DEN	CML
A:300.0	280-103956-B-1 MSD		280-398660		12/14/2017 17:09	5	TAL DEN	TLP

**Lab ID: 280-103956-1 DU**

**Client ID: LP-LCD**

Sample Date/Time: 11/21/2017 11:30    Received Date/Time: 11/24/2017 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:300.0	280-103956-B-1 DU		280-398660		12/14/2017 16:36	5	TAL DEN	TLP
A:SM 2540C	280-103956-B-1 DU		280-396562		11/27/2017 08:03	1	TAL DEN	JAP
A:SM5210B	280-103956-A-1 DU		280-396398		11/24/2017 14:20	5	TAL DEN	RSM

## Quality Control Results

Client: Waste Management

Job Number: 280-103956-1

### Laboratory Chronicle

Lab ID: MB

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3005A	MB 280-397209/1-A		280-397558	280-397209	12/01/2017 15:10	1	TAL DEN	MLS
A:6010D	MB 280-397209/1-A		280-397558	280-397209	12/04/2017 19:09	1	TAL DEN	CML
A:300.0	MB 280-398660/6		280-398660		12/14/2017 08:45	1	TAL DEN	TLP
A:350.1	MB 280-397642/20		280-397642		12/05/2017 15:04	1	TAL DEN	KAM
A:410.4	MB 280-397886/5		280-397886		12/07/2017 09:55	1	TAL DEN	CCJ
A:SM 2320B	MB 280-397409/31		280-397409		12/01/2017 10:47	1	TAL DEN	A1D
A:SM 2540C	MB 280-396562/1		280-396562		11/27/2017 08:03	1	TAL DEN	JAP
A:SM 5310B	MB 280-399183/4		280-399183		12/18/2017 14:31	1	TAL DEN	CCJ
A:SM5210B	MB 280-396398/4		280-396398		11/24/2017 14:19	1	TAL DEN	RSM

Lab ID: LCS

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3005A	LCS 280-397209/2-A		280-397558	280-397209	12/01/2017 15:10	1	TAL DEN	MLS
A:6010D	LCS 280-397209/2-A		280-397558	280-397209	12/04/2017 19:12	1	TAL DEN	CML
A:300.0	LCS 280-398660/4		280-398660		12/14/2017 08:12	1	TAL DEN	TLP
A:350.1	LCS 280-397642/18		280-397642		12/05/2017 15:00	1	TAL DEN	KAM
A:410.4	LCS 280-397886/3		280-397886		12/07/2017 09:55	1	TAL DEN	CCJ
A:SM 2320B	LCS 280-397409/30		280-397409		12/01/2017 10:40	1	TAL DEN	A1D
A:SM 2540C	LCS 280-396562/2		280-396562		11/27/2017 08:03	1	TAL DEN	JAP
A:SM 5310B	LCS 280-399183/3		280-399183		12/18/2017 14:14	1	TAL DEN	CCJ
A:SM5210B	LCS 280-396398/3		280-396398		11/24/2017 14:19	1	TAL DEN	RSM

Lab ID: LCSD

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:300.0	LCSD 280-398660/5		280-398660		12/14/2017 08:28	1	TAL DEN	TLP
A:350.1	LCSD 280-397642/19		280-397642		12/05/2017 15:02	1	TAL DEN	KAM
A:410.4	LCSD 280-397886/4		280-397886		12/07/2017 09:55	1	TAL DEN	CCJ

Lab ID: MRL

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:300.0	MRL 280-398660/3		280-398660		12/14/2017 07:55	1	TAL DEN	TLP

# Quality Control Results

Client: Waste Management

Job Number: 280-103956-1

## Laboratory Chronicle

Lab ID: MS

Client ID: N/A

Sample Date/Time: 11/21/2017 12:30 Received Date/Time: 11/24/2017 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:410.4	280-103953-B-1 MS		280-397886		12/07/2017 09:55	5	TAL DEN	CCJ
A:SM 5310B	280-104021-D-3 MS		280-399183		12/18/2017 16:43	1	TAL DEN	CCJ

Lab ID: MSD

Client ID: N/A

Sample Date/Time: 11/21/2017 12:30 Received Date/Time: 11/24/2017 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:410.4	280-103953-B-1 MSD		280-397886		12/07/2017 09:55	5	TAL DEN	CCJ
A:SM 5310B	280-104021-D-3 MSD		280-399183		12/18/2017 16:58	1	TAL DEN	CCJ

Lab ID: DU

Client ID: N/A

Sample Date/Time: 11/21/2017 11:15 Received Date/Time: 11/22/2017 09:15

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:SM 2320B	280-103915-A-3 DU		280-397409		12/01/2017 11:01	1	TAL DEN	A1D

### Lab References:

TAL DEN = TestAmerica Denver

Chain of Custody Record

<b>Client Information</b> Client Contact: <u>Matt Frame</u> Company: <u>Waste Management CA</u>		Sampler: <u>Stephen Herzog</u> Lab PM: <u>Sara, Betsy A</u> Phone: <u>503-887-2369</u> E-Mail: <u>betsy.sara@testamericainc.com</u>		COC No: <u>280-31456-972.1</u> Page: <u>Page 1 of 1</u> Job #:	
Address: <u>Olympic View Transfer Station 9300 Southwest Barney White Rd</u> City: <u>Bremton</u> State, Zip: <u>WA, 98312</u> Phone:		Due Date Requested: TAT Requested (days): PO #: <u>Purchase Order not requir</u> WO #:		Analysis Requested Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> C/SO4/As/ks/TDS <input checked="" type="checkbox"/> Total Metals <input checked="" type="checkbox"/> Ammonia/TOC/COD <input checked="" type="checkbox"/> BOD <input checked="" type="checkbox"/>	
Email: <u>M Frame</u> Project Name: <u>WA02/Olympic View Sanitary LF</u> Site: <u>Washington</u>		Project #: <u>28002692-Quarterly Leachate Appl - Mar Jun Sep</u> SSOW#: <u>NOV</u>		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 Other:	
Sample Identification <u>LP-LCD</u> <u>0052-171121- LP-LCD-4th Qtr</u>		Sample Type (C=comp, G=grab) Matrix (W=water, S=solid, O=water/oli, BT=Tissue, A=air) Preservation Code Water <u>Water</u>		Special Instructions/Note: short holds: BOD	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Date Sample Time <u>11/21/17</u> <u>1130</u>		Total Number of Containers	
Deliverable Requested: <input type="checkbox"/> I, II, III, IV, Other (specify)		Date: <u>11/21/17</u> 1400 Date/Time:		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Empty Kit Relinquished by: <u>Stephen Herzog</u>		Date/Time: <u>11/21/17</u> 1400 Date/Time:		Special Instructions/QC Requirements:	
Relinquished by: <u>Stephen Herzog</u>		Date/Time: <u>11/21/17</u> 0900 Date/Time:		Method of Shipment:	
Relinquished by:		Date/Time:		Company: <u>TAD</u>	
Custody Seals Intact: <u>Yes</u>		Cooler Temperature(s) °C and Other Remarks: <u>0.6 2.0 5.0 1.4 Transfer RR 11-24-17</u>		Company:	



# Login Sample Receipt Checklist

Client: Waste Management

Job Number: 280-103956-1

**Login Number: 103956**  
**List Number: 1**  
**Creator: Pottruff, Reed W**

**List Source: TestAmerica Denver**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	False	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	





## ANALYTICAL REPORT

Job Number: 280-104027-1

Job Description: WA02|Olympic View Sanitary LF

For:

Waste Management

2615 Davis Street

San Leandro, CA 94577

Attention: Mr. Patrick Madej



Approved for release.  
Betsy A Sara  
Project Manager II  
12/8/2017 1:29 PM

---

Betsy A Sara, Project Manager II  
4955 Yarrow Street, Arvada, CO, 80002  
(303)736-0189  
betsy.sara@testamericainc.com  
12/08/2017

cc: Mr. Dan Venchiarutti

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

**TestAmerica Laboratories, Inc.**

TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002  
Tel (303) 736-0100 Fax (303) 431-7171 [www.testamericainc.com](http://www.testamericainc.com)



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## CASE NARRATIVE

Client: Waste Management

Project: WA02|Olympic View Sanitary LF

Report Number: 280-104027-1

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

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

### Sample Receiving

The sample was received on 11/29/2017; the sample arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 1.8 C.

### Holding Times

The holding time was within established control limits.

### Method Blanks

The Method Blank result was within established control limits.

### Laboratory Control Samples (LCS)

The Laboratory Control Sample was within established control limits.

## EXECUTIVE SUMMARY - Detections

Client: Waste Management

Job Number: 280-104027-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
--------------------------	------------------	--------	-----------	--------------------	-------	--------

---

No Detections

## METHOD SUMMARY

Client: Waste Management

Job Number: 280-104027-1

<b>Description</b>	<b>Lab Location</b>	<b>Method</b>	<b>Preparation Method</b>
<b>Matrix: Water</b>			
BOD, 5 Day	TAL DEN	SM SM5210B	

### Lab References:

TAL DEN = TestAmerica Denver

### Method References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

## METHOD / ANALYST SUMMARY

Client: Waste Management

Job Number: 280-104027-1

<b>Method</b>	<b>Analyst</b>	<b>Analyst ID</b>
SM SM5210B	Martinez, Rut S	RSM

**SAMPLE SUMMARY**

Client: Waste Management

Job Number: 280-104027-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
280-104027-1	LP-LCD	Water	11/28/2017 1330	11/29/2017 0930

# SAMPLE RESULTS



# Analytical Data

Client: Waste Management

Job Number: 280-104027-1

---

## General Chemistry

**Client Sample ID:** LP-LCD

Lab Sample ID: 280-104027-1

Date Sampled: 11/28/2017 1330

Client Matrix: Water

Date Received: 11/29/2017 0930

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Biochemical Oxygen Demand	ND		mg/L	10	10	5.0	SM5210B

Analysis Batch: 280-396967 Analysis Date: 11/29/2017 1522

## DATA REPORTING QUALIFIERS

Lab Section	Qualifier	Description
-------------	-----------	-------------

---

# QUALITY CONTROL RESULTS

## Quality Control Results

Client: Waste Management

Job Number: 280-104027-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-396967</b>					
LCS 280-396967/3	Lab Control Sample	T	Water	SM5210B	
MB 280-396967/4	Method Blank	T	Water	SM5210B	
280-104027-1	LP-LCD	T	Water	SM5210B	
280-104027-1DU	Duplicate	T	Water	SM5210B	

#### Report Basis

T = Total

## Quality Control Results

Client: Waste Management

Job Number: 280-104027-1

**Method Blank - Batch: 280-396967**

**Method: SM5210B**

**Preparation: N/A**

Lab Sample ID: MB 280-396967/4	Analysis Batch: 280-396967	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/29/2017 1521	Units: mg/L	Final Weight/Volume: 300 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	RL	RL
Biochemical Oxygen Demand	ND		2.0	2.0

**Lab Control Sample - Batch: 280-396967**

**Method: SM5210B**

**Preparation: N/A**

Lab Sample ID: LCS 280-396967/3	Analysis Batch: 280-396967	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/29/2017 1521	Units: mg/L	Final Weight/Volume: 300 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Biochemical Oxygen Demand	198	176	89	85 - 115	

**Duplicate - Batch: 280-396967**

**Method: SM5210B**

**Preparation: N/A**

Lab Sample ID: 280-104027-1	Analysis Batch: 280-396967	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 5.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 11/29/2017 1522	Units: mg/L	Final Weight/Volume: 300 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Biochemical Oxygen Demand	ND	ND	NC	20	

# Quality Control Results

Client: Waste Management

Job Number: 280-104027-1

## Laboratory Chronicle

Lab ID: 280-104027-1

Client ID: LP-LCD

Sample Date/Time: 11/28/2017 13:30 Received Date/Time: 11/29/2017 09:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:SM5210B	280-104027-A-1		280-396967		11/29/2017 15:22	5	TAL DEN	RSM

Lab ID: 280-104027-1 DU

Client ID: LP-LCD

Sample Date/Time: 11/28/2017 13:30 Received Date/Time: 11/29/2017 09:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:SM5210B	280-104027-A-1 DU		280-396967		11/29/2017 15:22	5	TAL DEN	RSM

Lab ID: MB

Client ID: N/A

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:SM5210B	MB 280-396967/4		280-396967		11/29/2017 15:21	1	TAL DEN	RSM

Lab ID: LCS

Client ID: N/A

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:SM5210B	LCS 280-396967/3		280-396967		11/29/2017 15:21	1	TAL DEN	RSM

### Lab References:

TAL DEN = TestAmerica Denver

**Chain of Custody Record**

<b>Client Information</b> Client Contact: <u>Math Farns (wm)</u> Company: <u>Waste Management</u> Address: <u>Olympic View Transfer Station 9300 Southwest Barney White Rd</u> City: <u>Bremerton</u> State, Zip: <u>WA, 98312</u> Phone: <u></u> Email: <u>math.farns@wm.com</u>		Lab PM: <u>Sara, Betsy A</u> Carrier Tracking No(s): <u>280-31456-972-1</u> E-Mail: <u>betsy.sara@testamericainc.com</u> Page 1 of 1	
<b>Sample Identification</b> LP-LCD <u>0USL171128-LP-LCD</u> Sample Date: <u>11/28/17</u> Sample Time: <u>1330</u> Sample Type (C=Comp, G=grab): <u>G</u> Matrix (W=water, S=solid, O=wasteflot, BT=Trace Acids): <u>Water</u> Preservation Code: <u></u>		<b>Analysis Requested</b> Field Filtered Sample (Yes or No): <input checked="" type="checkbox"/> Yes Perform MS/MSD (Yes or No): <input checked="" type="checkbox"/> Yes CYSO/MS/MSD: <input checked="" type="checkbox"/> Yes Total Metals: <input checked="" type="checkbox"/> Yes Ammonia/NH <sub>3</sub> /TC/CP: <input checked="" type="checkbox"/> Yes BOD: <input checked="" type="checkbox"/> Yes	
<b>Due Date Requested:</b> TAT Requested (days): <u></u> PO #: <u></u> Purchase Order not requir: <u></u> WO #: <u></u> Project #: <u>28002692-Quarterly Leachate Appli - Mar Jun Sep</u> SSOW#: <u></u>		Total Number of containers: <u></u> Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO <sub>4</sub> F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: <u></u> Special Instructions/Note: <u>short holds: BOD</u> <u>BOD only</u>	
<b>Possible Hazard Identification</b> <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify) <u></u>		<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b> <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab Archive For: <u></u> Months	
<b>Empty Kit Relinquished by:</b> Relinquished by: <u>Steph Arroyal</u> Relinquished by: <u></u> Relinquished by: <u></u>		<b>Special Instructions/QC Requirements:</b> 280-104027 Chain of Custody Method of Shipment: <u></u>	
<b>Custody Seals Intact:</b> Δ Yes Δ No		<b>Time:</b> Received by: <u>Steph Arroyal</u> Date/Time: <u>11/28/17 1400</u> Received by: <u></u> Date/Time: <u></u> Received by: <u></u> Date/Time: <u></u>	
<b>Custody Seal No.:</b> Δ Yes Δ No		Cooler Temperature(s) °C and Other Remarks: <u>1,410.4 IP#5 transferred by SF 11-29-17</u>	

# Login Sample Receipt Checklist

Client: Waste Management

Job Number: 280-104027-1

**Login Number: 104027**  
**List Number: 1**  
**Creator: True, Joshua A**

**List Source: TestAmerica Denver**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	



APPENDIX C

2017 ANNUAL TIME SERIES, TREND TEST  
AND PREDICTION LIMIT EVALUATION



**Olympic View Sanitary Landfill**  
**Annual Statistical Evaluation & Summary**  
**2017 Monitoring Year**

Prepared for:

**SCS ENGINEERS**

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Bellevue, Washington 98005  
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Prepared by:

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**JANUARY 2018**

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**CONTENTS:**

1. *Statistical Trend Analysis (showing status through Q4 2017)*
  2. *Prediction Limits for Detection Monitoring*
    - a. *2017 Prediction Limits (showing status through Q4 2017)*
    - b. *Updated Prediction Limits for Use in 2018 Monitoring Year*
  3. *2017 Annual UCL Calculations for Preliminary Groundwater Cleanup Goals*
-

# 1. Statistical Trend Analysis

- Trend Results Summary Table (showing status through Q4 2017) (Table 1-1)
- Time-Series Graphs Depicting Significant Trends for “Trend Test A”
- Time-Series Graphs Depicting Significant Trends for “Trend Test B”

TABLE 1-1

Results of Sen's Non-Parametric Test for Trend

FOURTH QUARTER 2017 REPORT

Trend Test Period: January 2005 through December 2017

Trend Test Wells:

- Compliance Wells: MW-15R, MW-34A, MW-34C, MW-39, MW-42, MW-43
- Performance Wells: MW-19C\*
- Downgradient Wells: MW-29A\*, MW-32, MW-33A\*, MW-33C\*, MW-36A\*
- Upgradient Wells MW-13A, MW-13B, MW-16, MW-35

\*sampled semi-annually; trend status shown is most recent available

**Trend Test A** = all organic parameters listed in Appendix I and Appendix II of WAC 173-351-990 that have been detected at least once in at least one of 22 wells comprising the network of 1) compliance, 2) performance, 3) downgradient, and 4) upgradient site monitoring wells, during the trend test period. This includes the following constituents:

	Significant Increasing Trends	Significant Decreasing Trends
1,1-Dichloroethane	None	None
1,2-Dichloroethene (total)	None	None
1,2-Dichlorobenzene	None	None
1,4-Dichlorobenzene	None	None
Acetone	None	None
Benzene	None	None
Carbon Disulfide	None	None
Chlorobenzene	None	None
Chlorodifluoromethane	None	None
Chloroethane	None	None
Chloroform	None	None
Chloromethane	None	None
cis-1,2-dichloroethene	None	None
Dichlorodifluoromethane	None	None
Ethyl Ether	None	None
Methylene Chloride	None	None
Naphthalene	None	None
n-Butyl Alcohol	None	None
tert-Butyl Alcohol	None	None
Tetrachloroethene	None	None
Tetrahydrofuran	None	None
Toluene	None	None
trans-1,2-Dichloroethene	None	None
Trichloroethene	None	MW-19C (graph 389)
Vinyl Chloride	None	MW-19C (graph 405) MW-32 (graph 407) MW-34C (graph 411)

**TABLE 1-1**

**Trend Test B** = all metals and groundwater quality parameters listed in Appendix I and Appendix II of WAC (173-351-990)

	Significant Increasing Trends	Significant Decreasing Trends
Alkalinity, bicarbonate (as CaCO <sub>3</sub> )	MW-13B (graph 2) MW-35 (graph 12)	MW-15R (graph 3) MW-16 (graph 4) MW-34A (graph 10) MW-34C (graph 11) MW-36A (graph 13)
Alkalinity, total (as CaCO <sub>3</sub> )	MW-13B (graph 18) MW-35 (graph 28)	MW-15R (graph 19) MW-16 (graph 20) MW-34A (graph 26) MW-34C (graph 27) MW-36A (graph 29)
Ammonia (as N)	None	MW-29A (graph 38) MW-43 (graph 48)
Antimony, total	None	None
Arsenic, total	None	MW-19C (graph 69)
Barium, total	None	MW-32 (graph 87)
Beryllium, total	None	None
Cadmium, total	None	None
Calcium, dissolved	None	MW-15R (graph 131) MW-16 (graph 132) MW-29A (graph 134) MW-32 (graph 135) MW-33A (graph 136) MW-34A (graph 138) MW-34C (graph 139) MW-36A (graph 141) MW-43 (graph 144)
Chloride	MW-39 (graph 158)	MW-13B (graph 146) MW-15R (graph 147) MW-16 (graph 148) MW-19C (graph 149) MW-33A (graph 152) MW-34A (graph 154) MW-34C (graph 155) MW-35 (graph 156) MW-36A (graph 157)
Chromium, total	None	None
Cobalt, total	None	None
Copper, total	None	None
Iron, total	None	MW-32 (graph 215)
Lead, total	None	None

**TABLE 1-1**

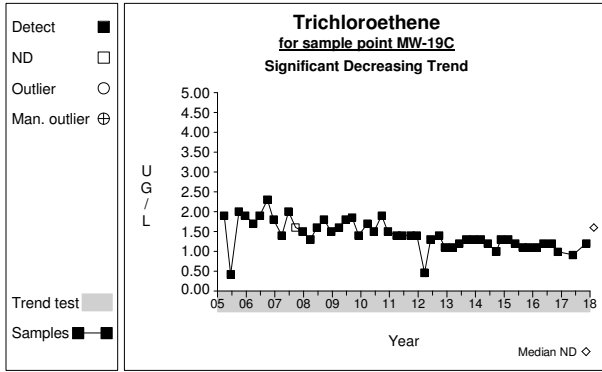
Magnesium, dissolved	None	MW-15R (graph 243) MW-16 (graph 244) MW-32 (graph 247) MW-33A (graph 248) MW-34A (graph 250) MW-34C (graph 251) MW-42 (graph 255)
Manganese, total	None	MW-32 (graph 263)
Nickel, total	None	None
Nitrate (as N)	MW-35 (graph 300)	None
pH	MW-29A (graph 310) MW-32 (graph 311) MW-34C (graph 315) MW-42 (graph 319)	None
Potassium, dissolved	MW-42 (graph 335)	None
Selenium, total	None	None
Silver, total	None	None
Sodium, dissolved	None	MW-15R (graph 371) MW-19C (graph 373) MW-34A (graph 378) MW-34C (graph 379) MW-36A (graph 381) MW-43 (graph 384)
Specific Conductivity	None	MW-15R (graph 387) MW-19C (graph 389) MW-29A (graph 390) MW-32 (graph 391) MW-33A (graph 392) MW-34A (graph 394) MW-34C (graph 395)
Sulfate	None	MW-13A (graph 401) MW-13B (graph 402) MW-19C (graph 405) MW-32 (graph 407) MW-36A (graph 413) MW-42 (graph 415) MW-43 (graph 416)
Temperature	MW-15R (graph 419) MW-32 (graph 423) MW-33C (graph 425) MW-34A (graph 426) MW-34C (graph 427) MW-35 (graph 428)	None

**TABLE 1-1**

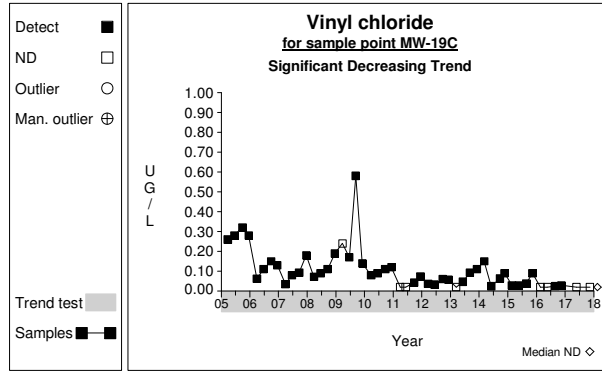
Thallium, total	None	None
Total Dissolved Solids	None	MW-15R (graph 451) MW-32 (graph 455) MW-33A (graph 456) MW-34A (graph 458) MW-34C (graph 459)
Total Organic Carbon	None	None
Vanadium, total	None	None
Zinc, total	None	None



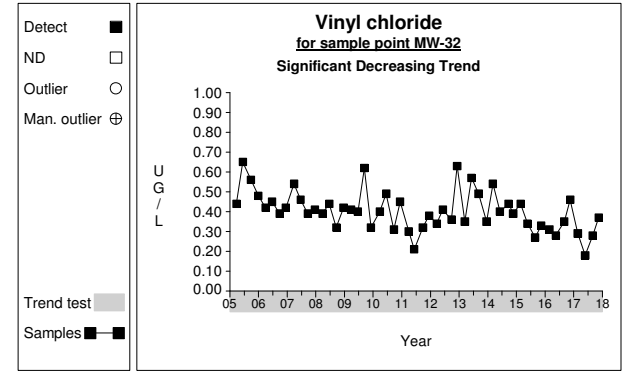
# Time Series



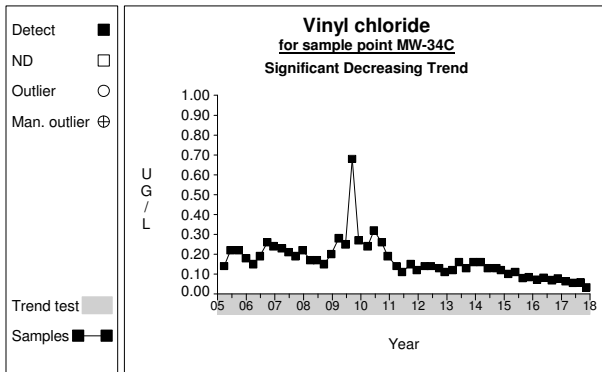
Graph 389



Graph 405

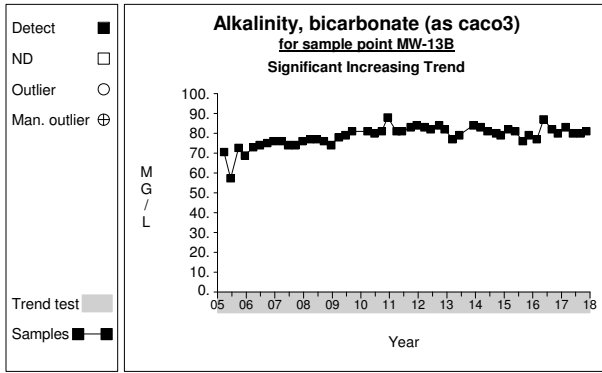


Graph 407

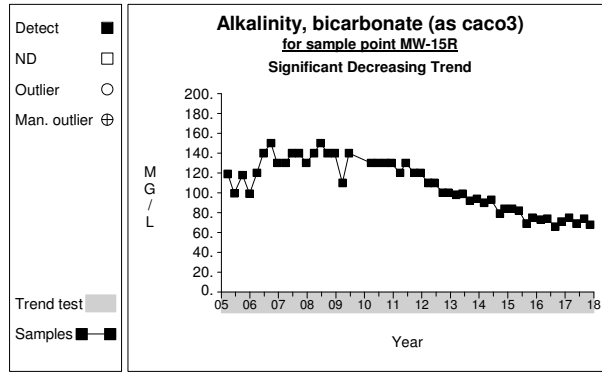


Graph 411

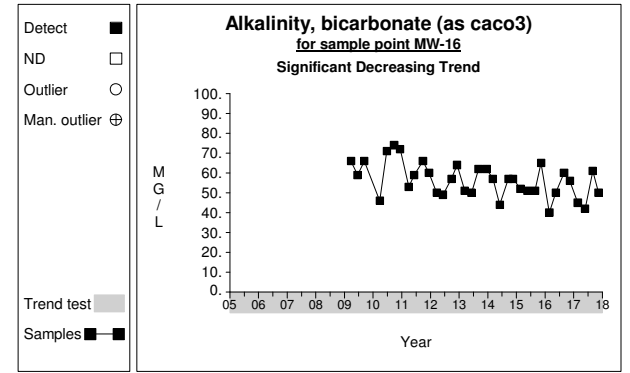
# Time Series



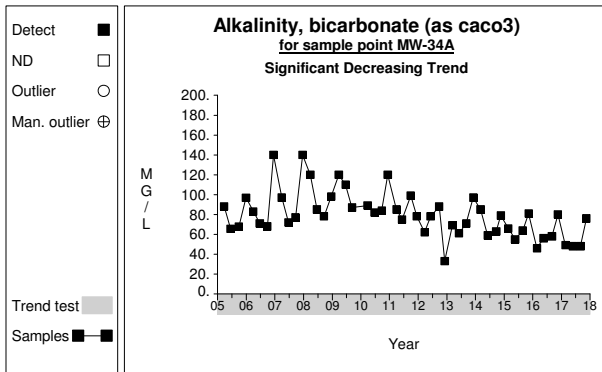
Graph 2



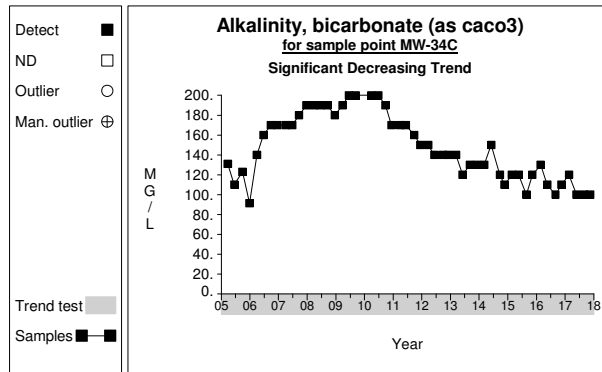
Graph 3



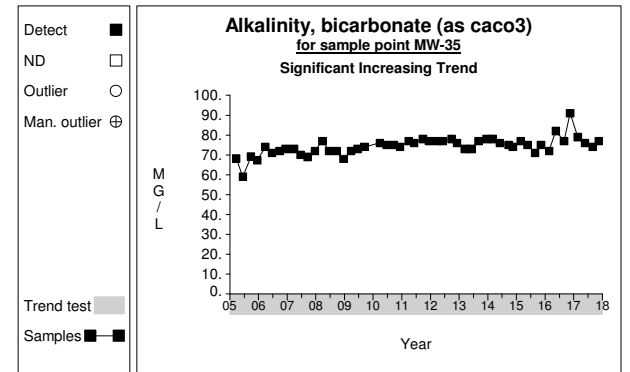
Graph 4



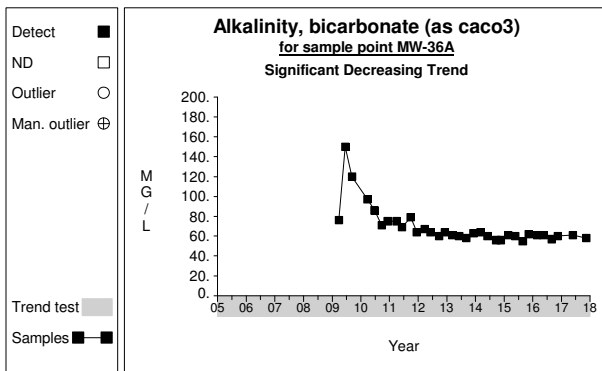
Graph 10



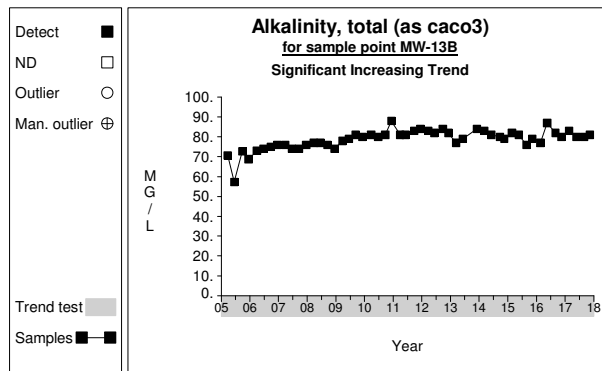
Graph 11



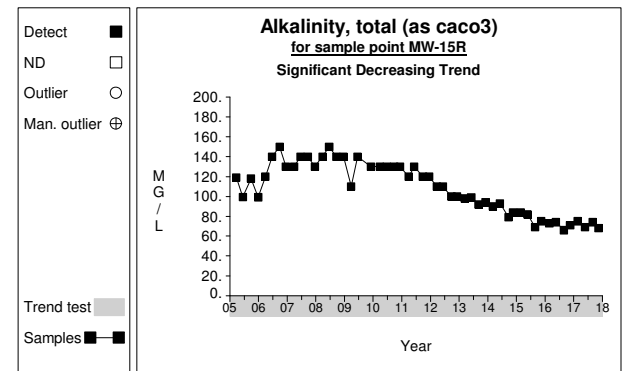
Graph 12



Graph 13

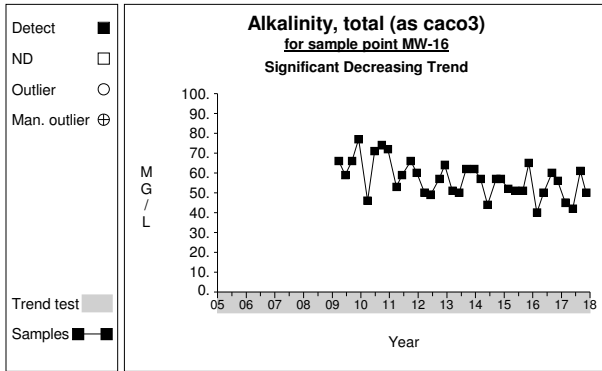


Graph 18

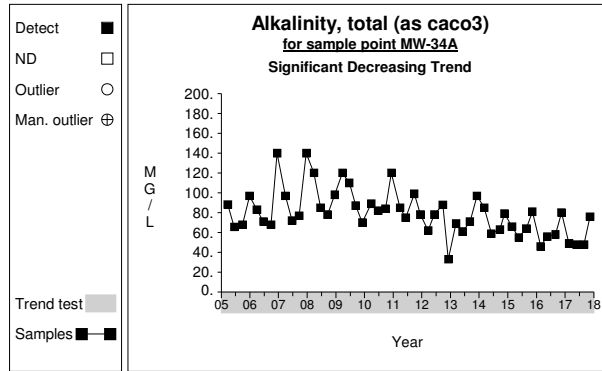


Graph 19

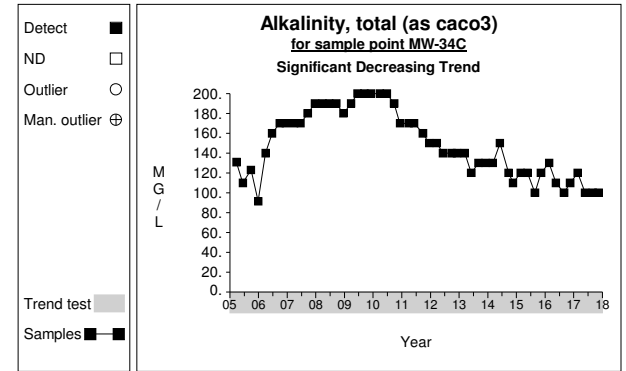
# Time Series



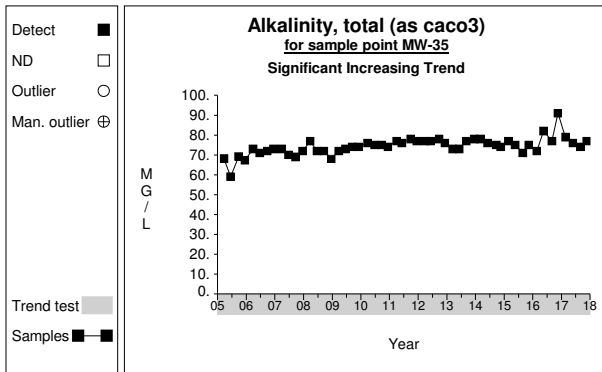
Graph 20



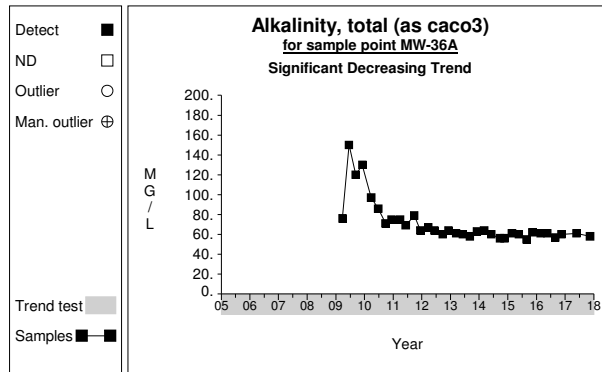
Graph 26



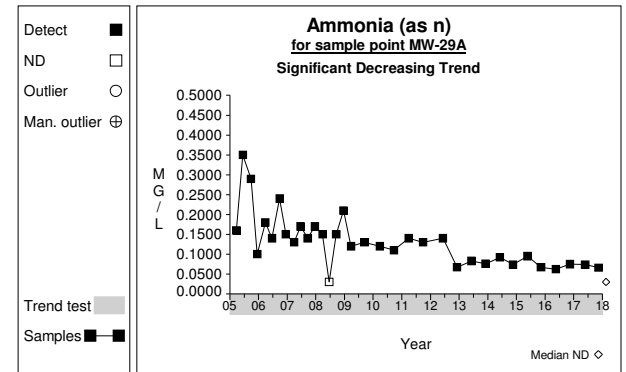
Graph 27



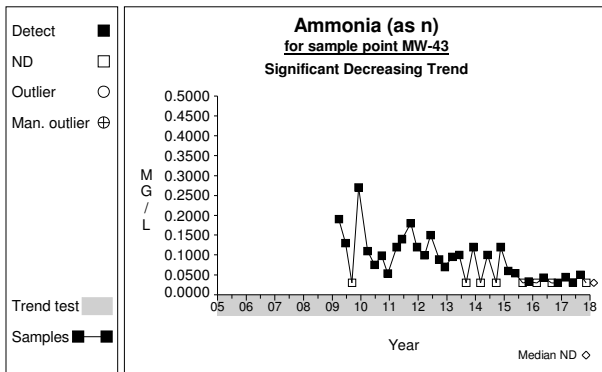
Graph 28



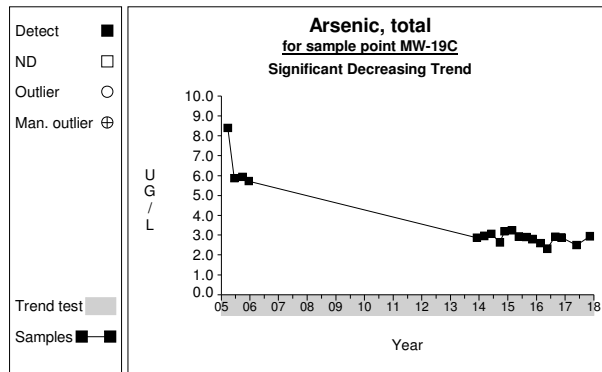
Graph 29



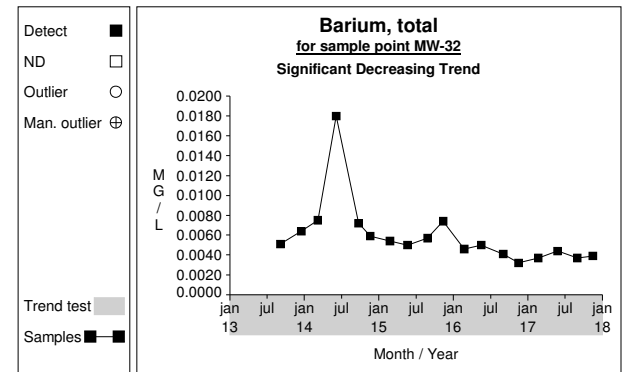
Graph 38



Graph 48

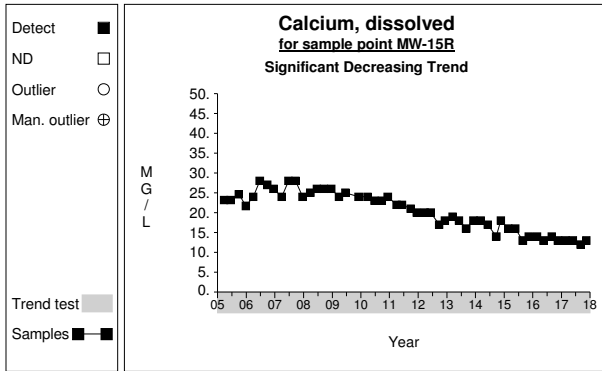


Graph 69

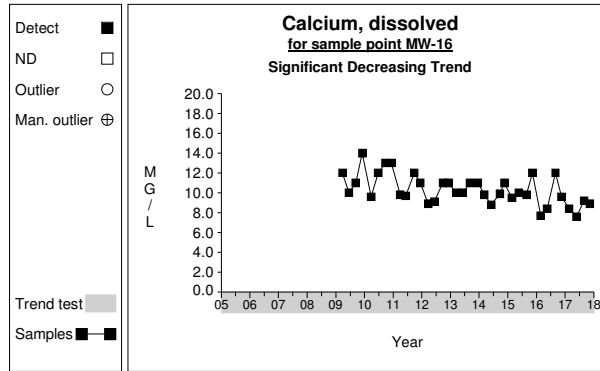


Graph 87

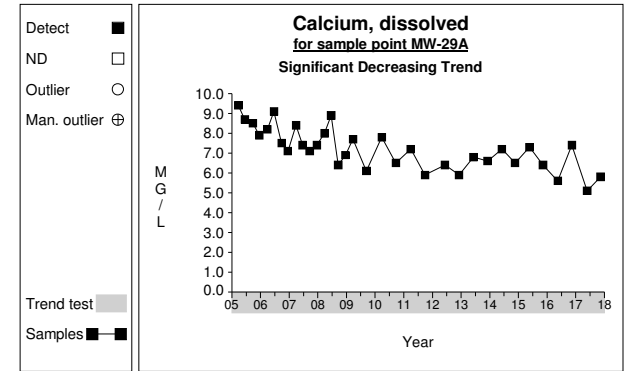
# Time Series



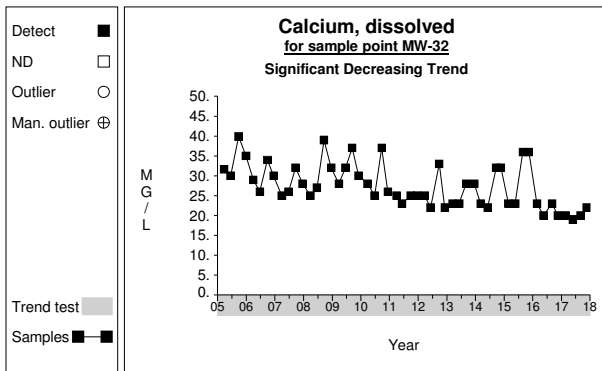
Graph 131



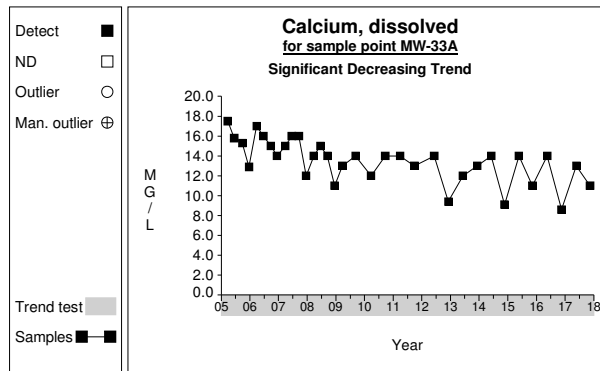
Graph 132



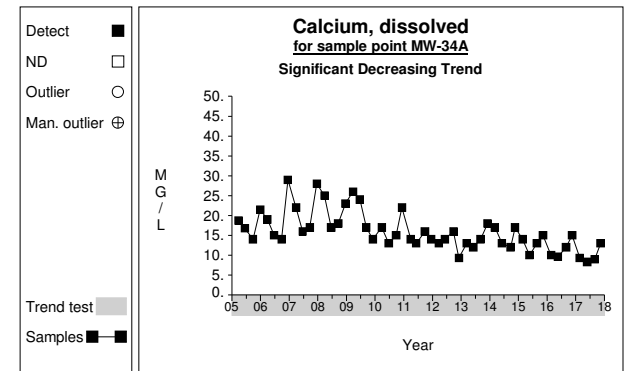
Graph 134



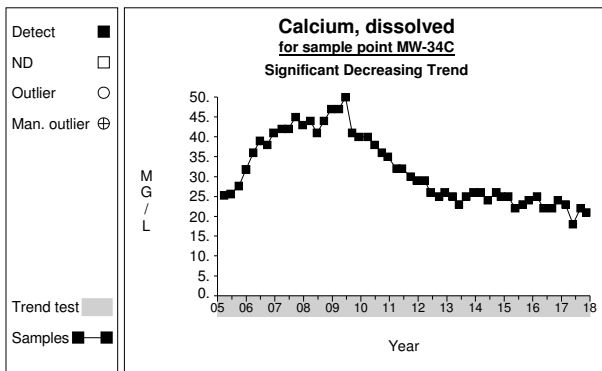
Graph 135



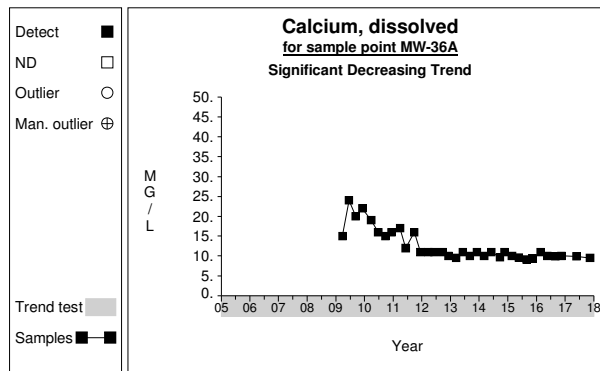
Graph 136



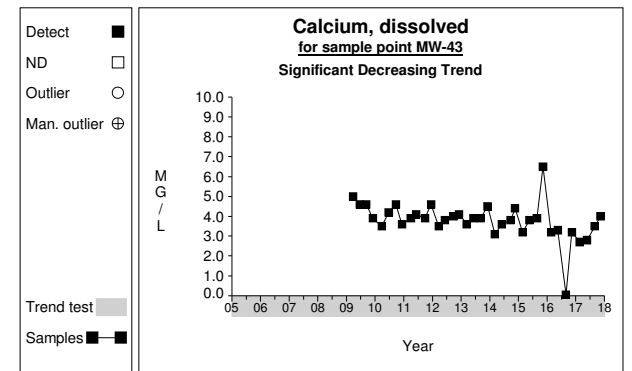
Graph 138



Graph 139

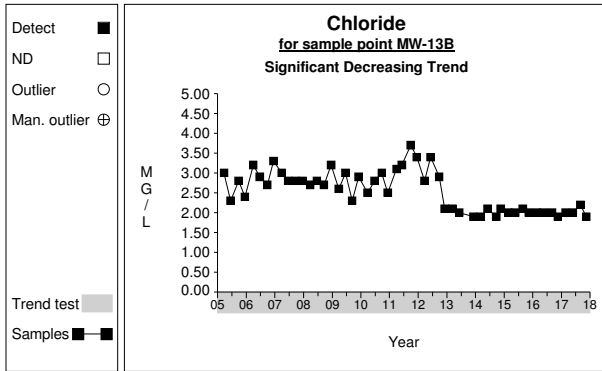


Graph 141

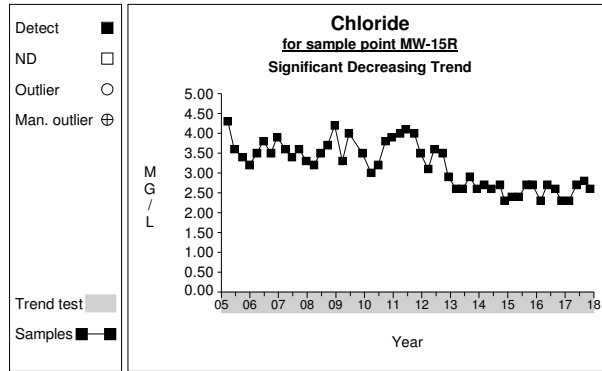


Graph 144

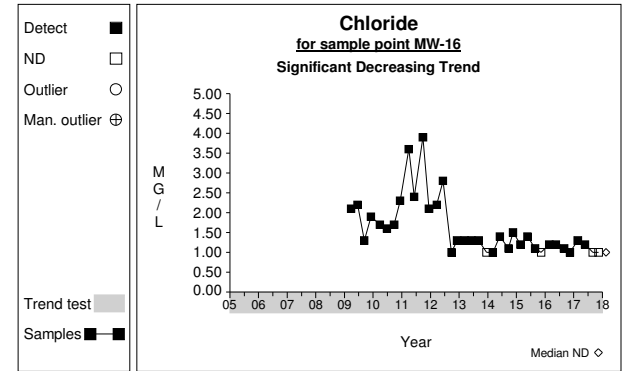
# Time Series



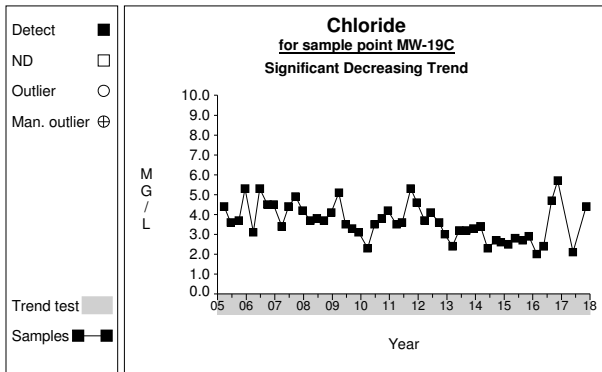
Graph 146



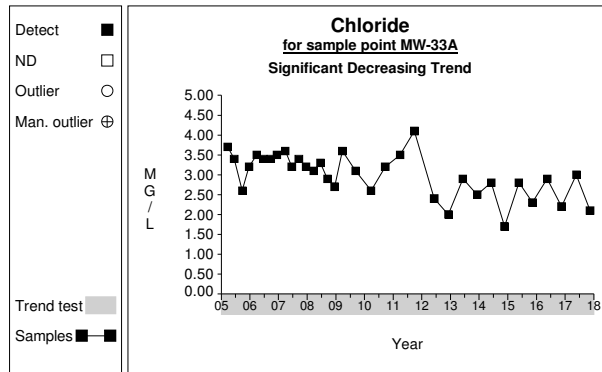
Graph 147



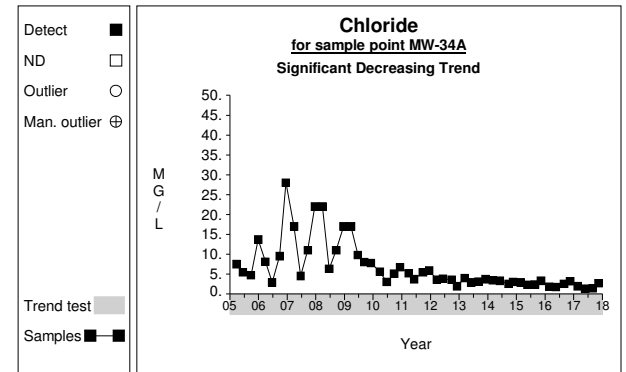
Graph 148



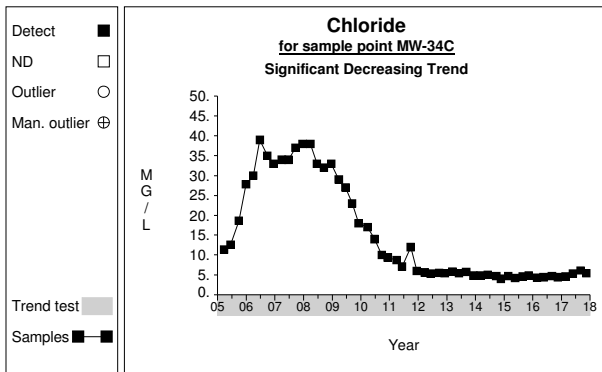
Graph 149



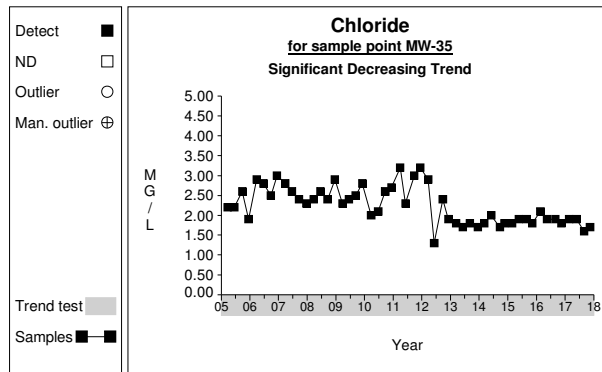
Graph 152



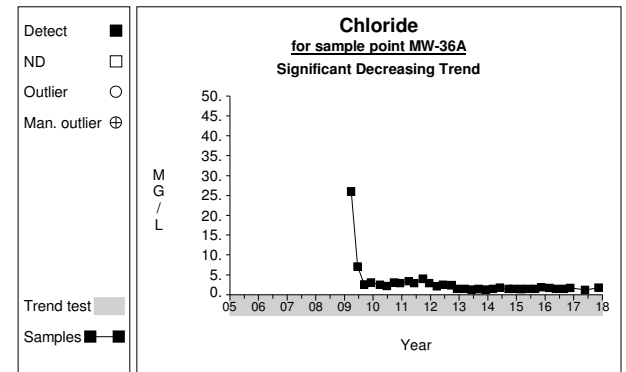
Graph 154



Graph 155

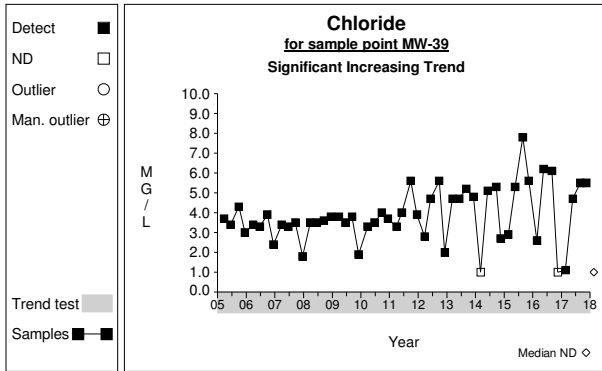


Graph 156

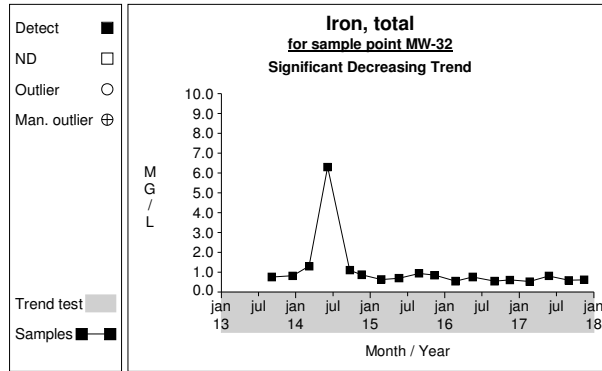


Graph 157

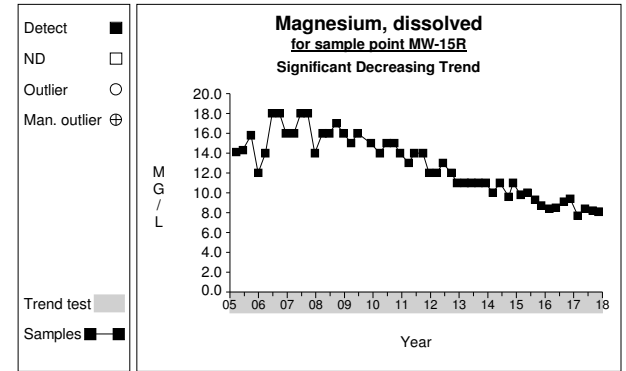
# Time Series



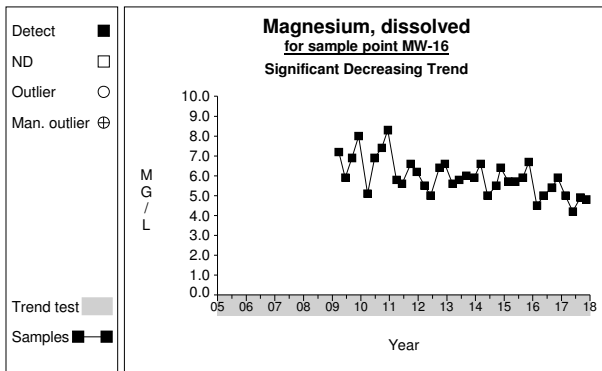
Graph 158



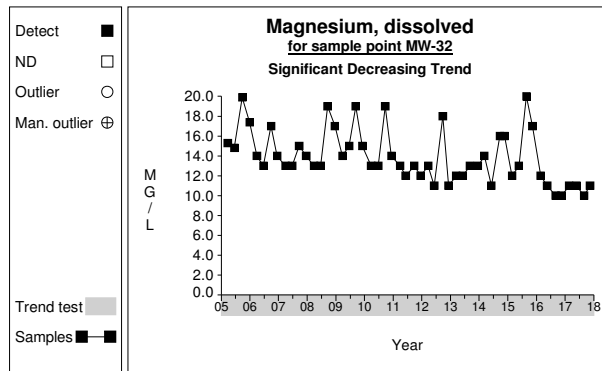
Graph 215



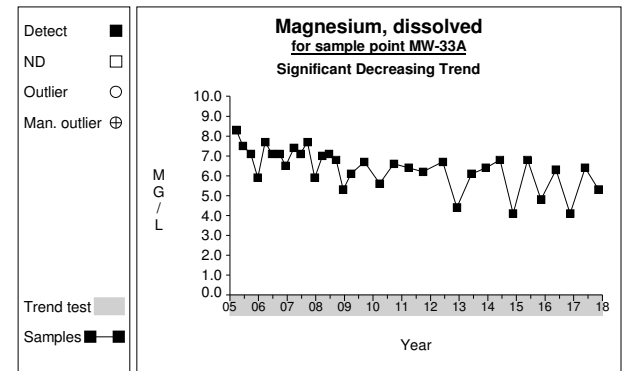
Graph 243



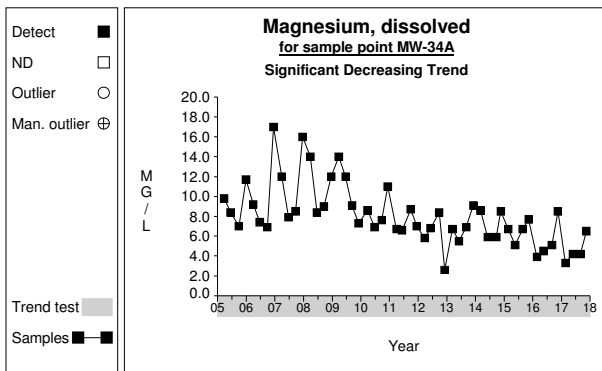
Graph 244



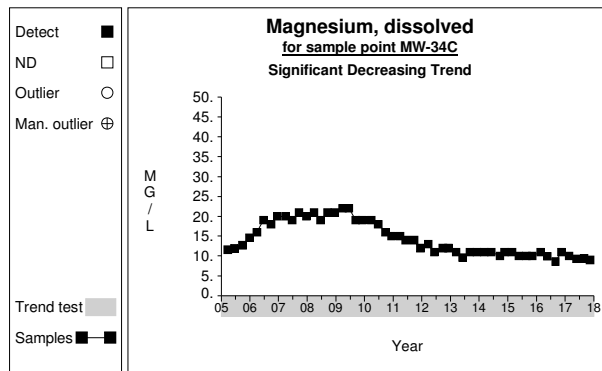
Graph 247



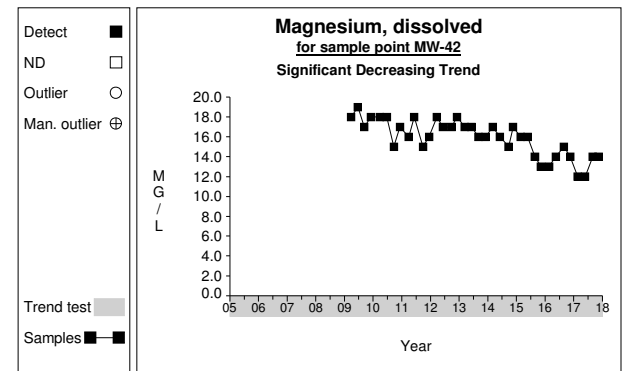
Graph 248



Graph 250

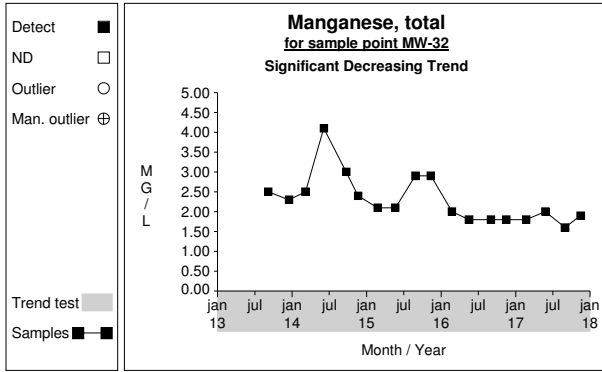


Graph 251

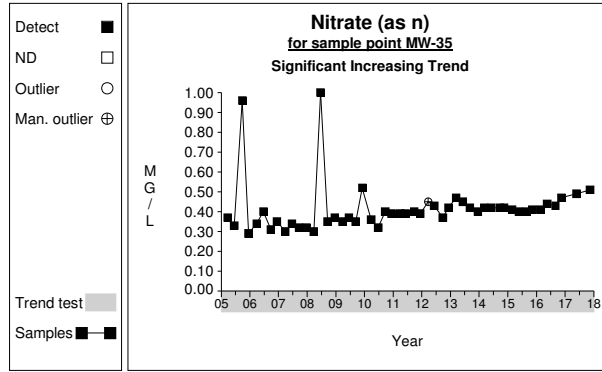


Graph 255

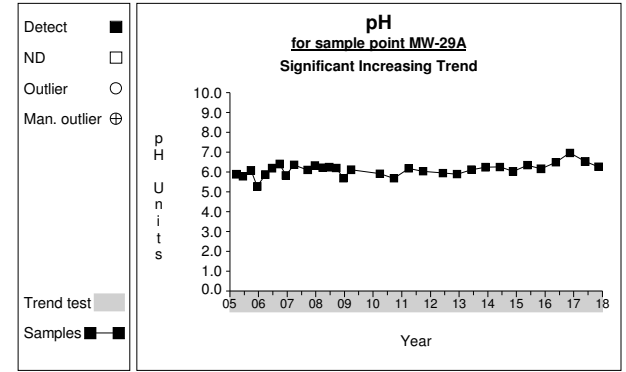
# Time Series



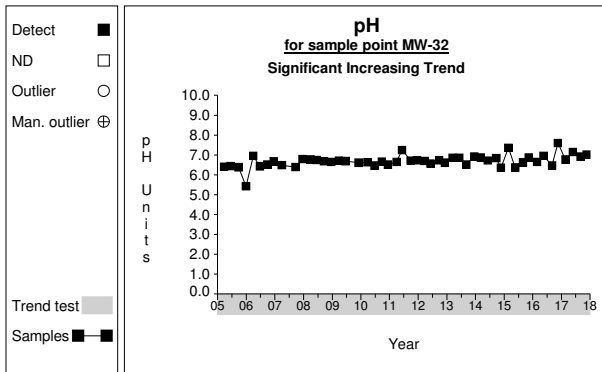
Graph 263



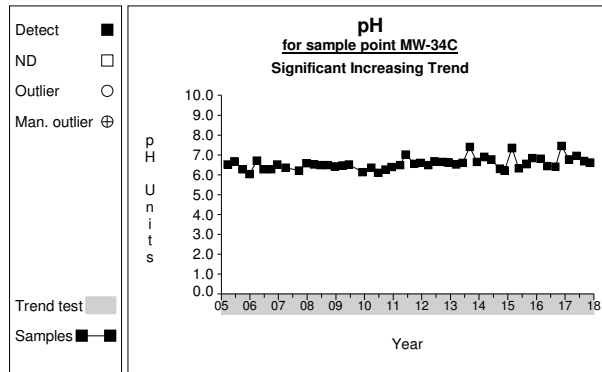
Graph 300



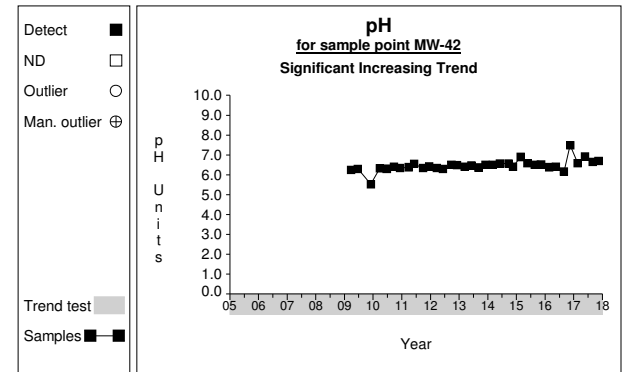
Graph 310



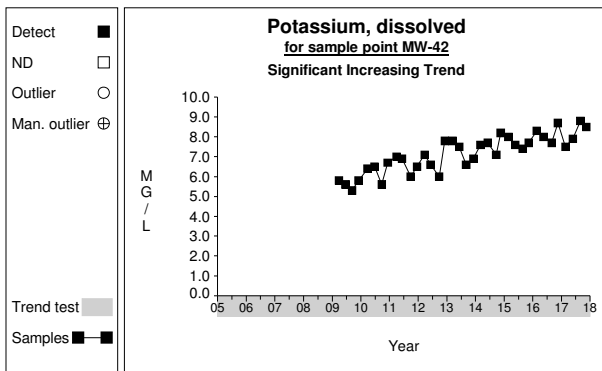
Graph 311



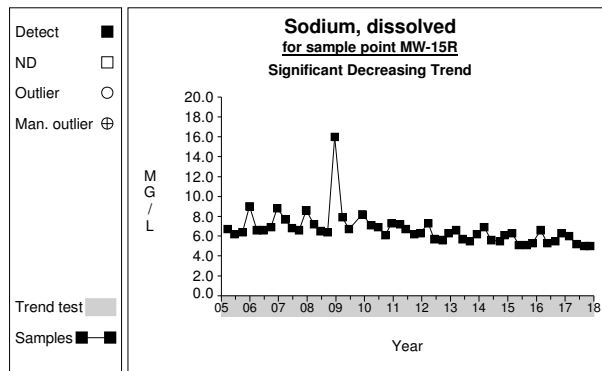
Graph 315



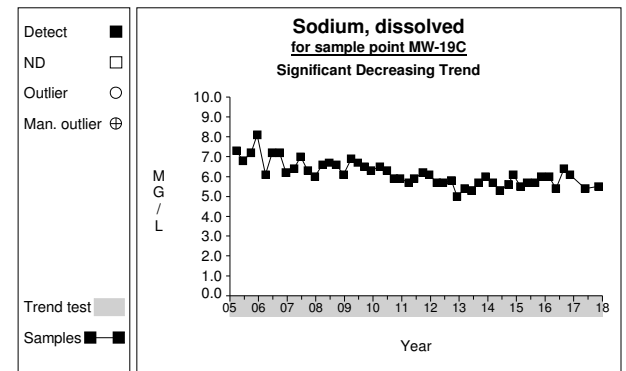
Graph 319



Graph 335

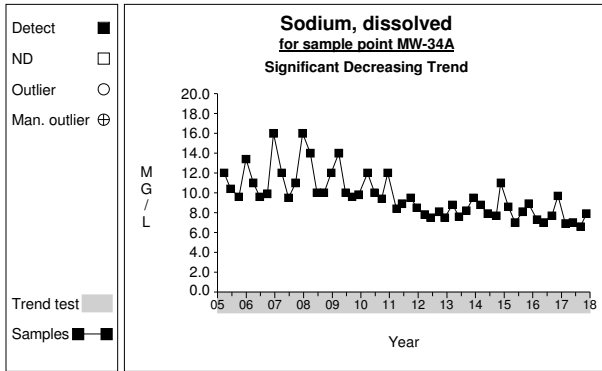


Graph 371

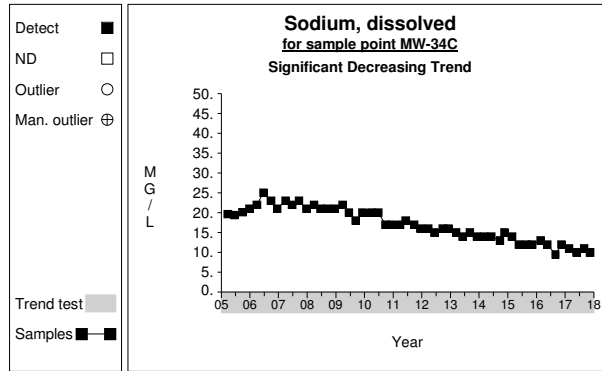


Graph 373

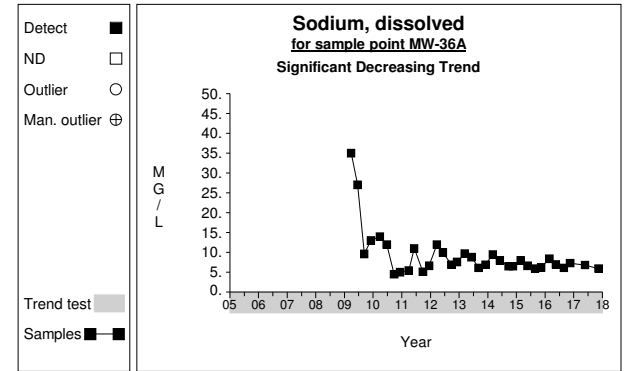
# Time Series



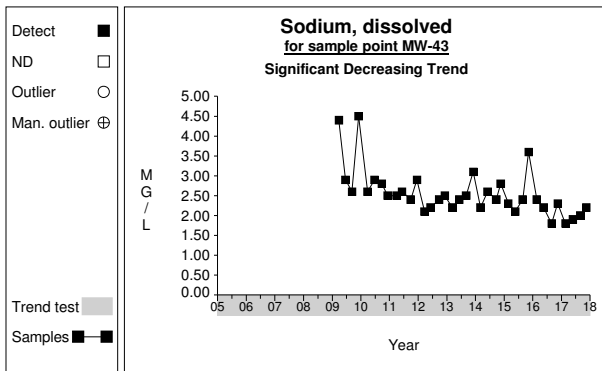
Graph 378



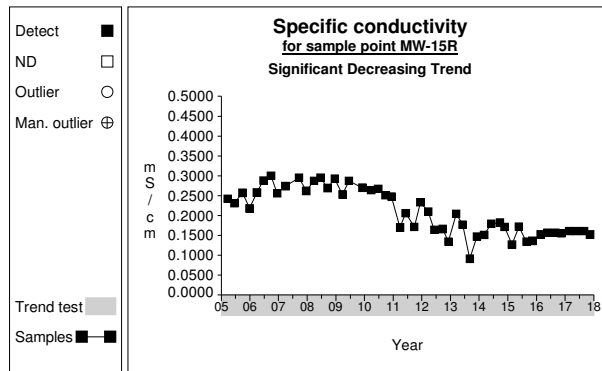
Graph 379



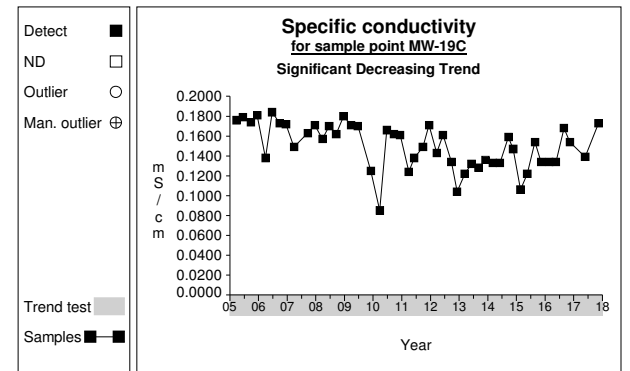
Graph 381



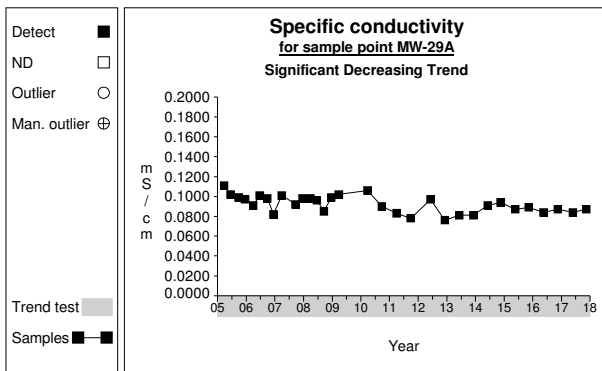
Graph 384



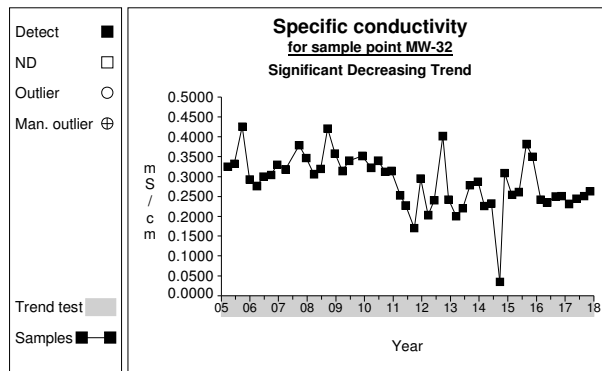
Graph 387



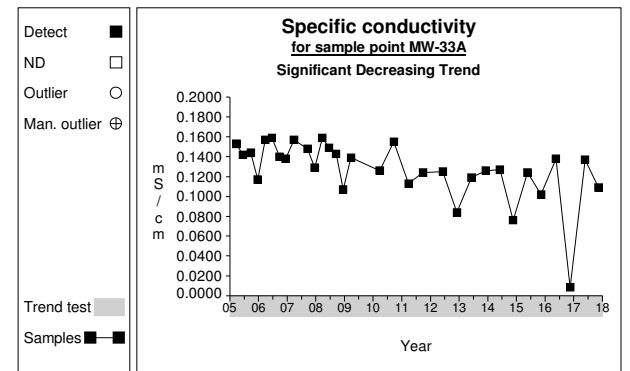
Graph 389



Graph 390



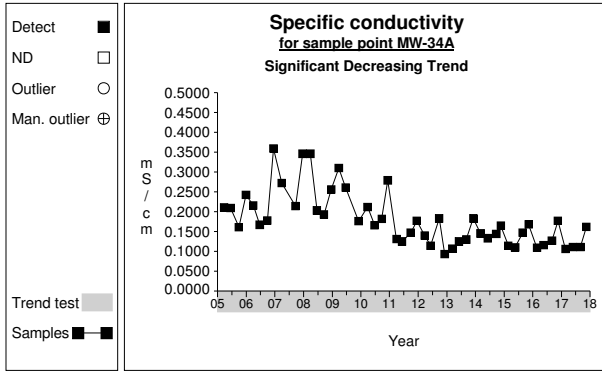
Graph 391



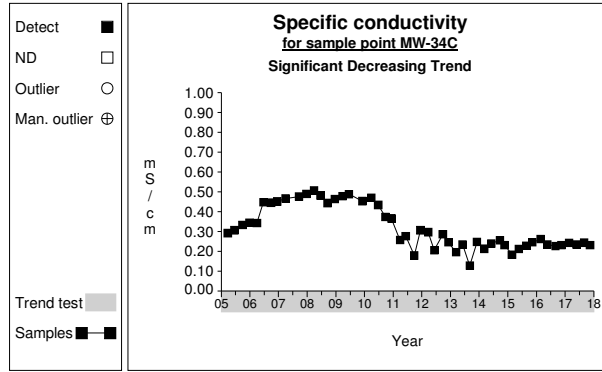
Graph 392



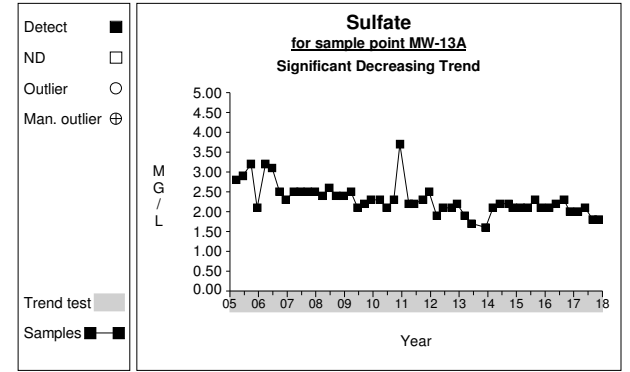
# Time Series



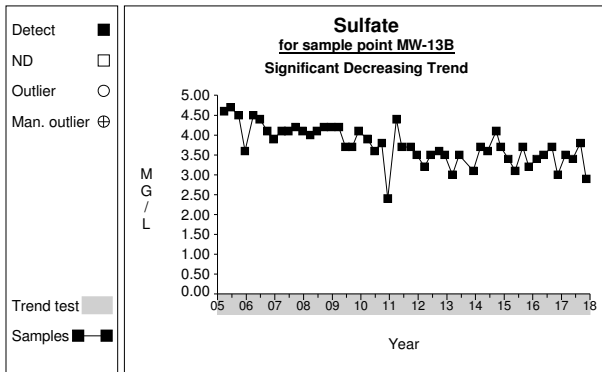
Graph 394



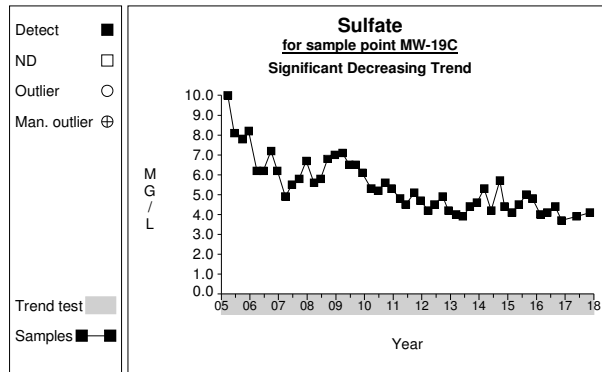
Graph 395



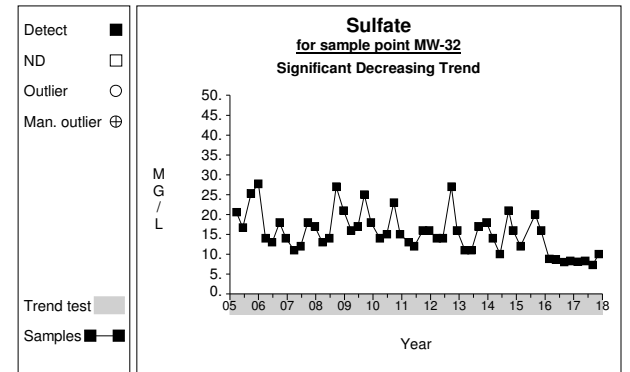
Graph 401



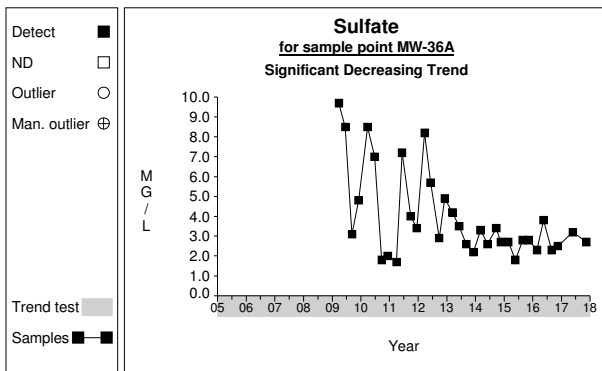
Graph 402



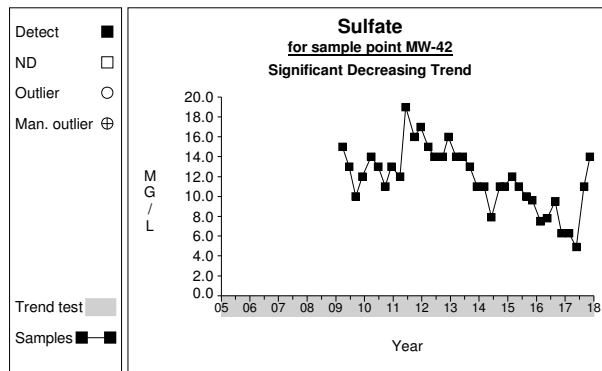
Graph 405



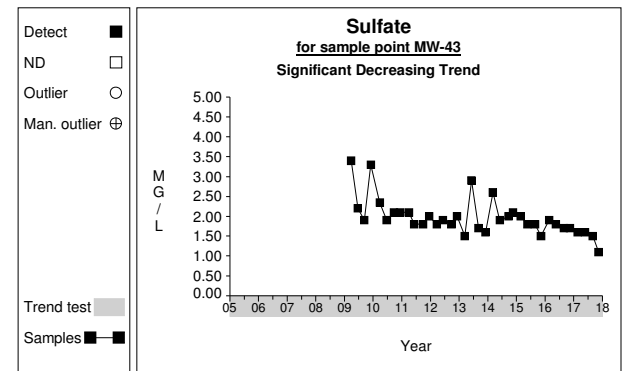
Graph 407



Graph 413

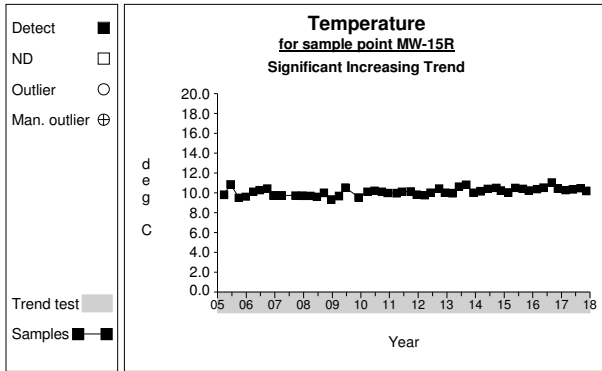


Graph 415

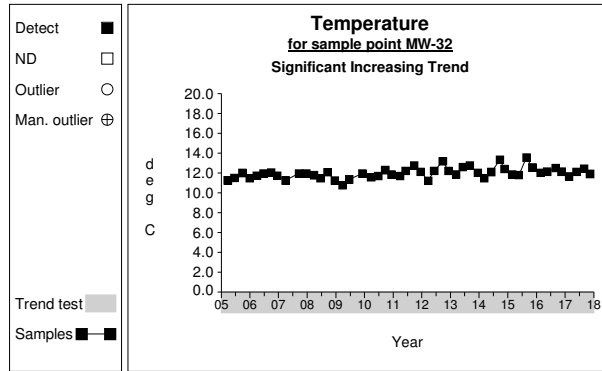


Graph 416

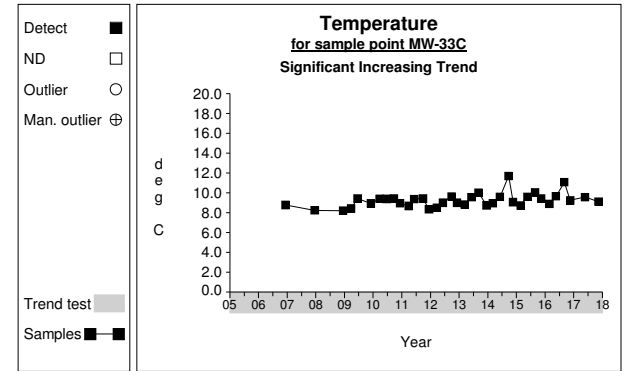
# Time Series



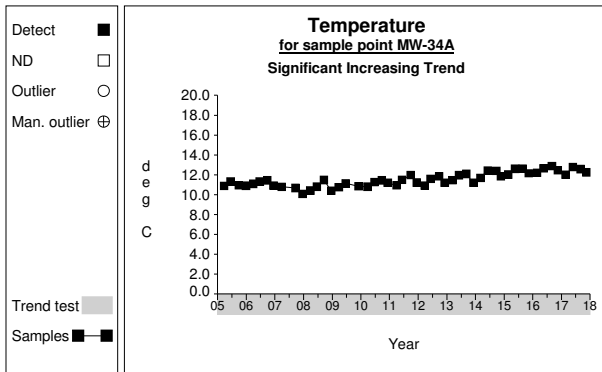
Graph 419



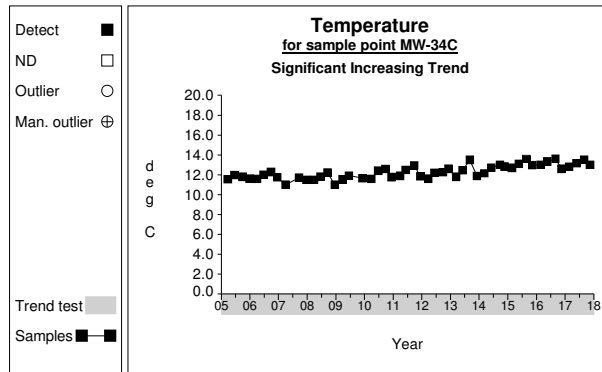
Graph 423



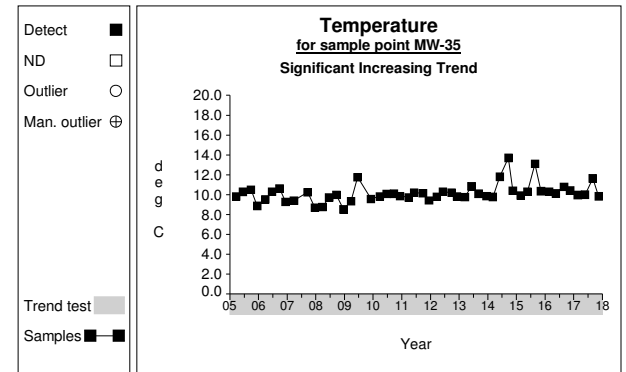
Graph 425



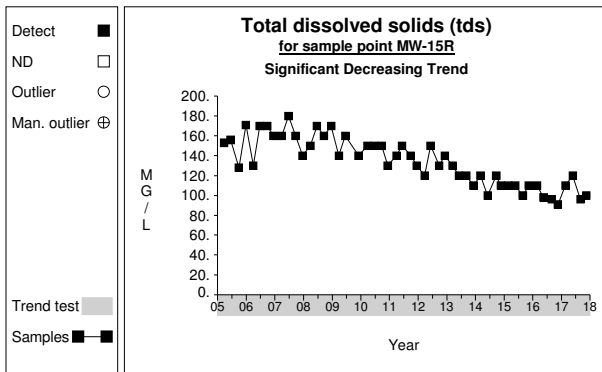
Graph 426



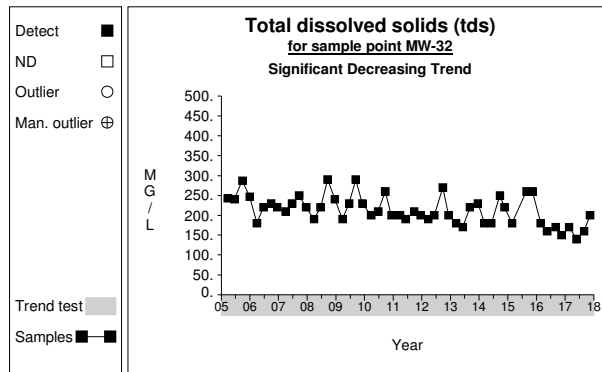
Graph 427



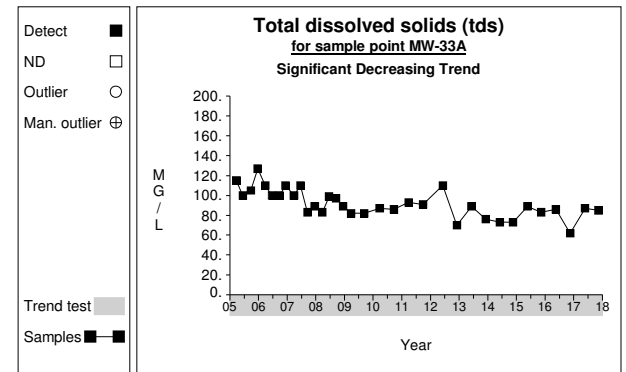
Graph 428



Graph 451

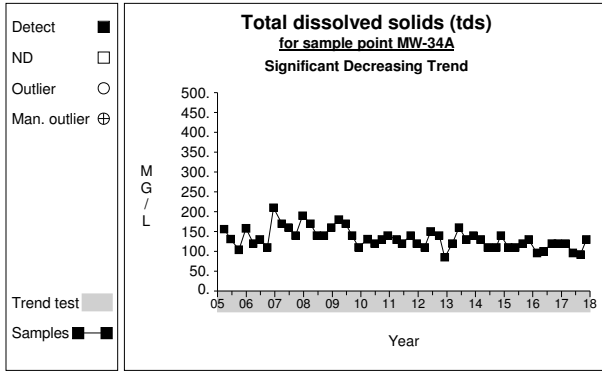


Graph 455

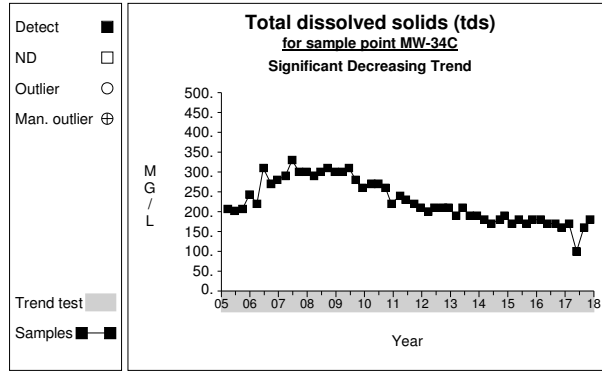


Graph 456

### Time Series



Graph 458



Graph 459

## **2. Prediction Limits for Detection Monitoring**

- 2017 Prediction Limits and Q4 2017 Exceedance Summary Table (Table 2-1)
- Updated Prediction Limits for Use During 2018 Monitoring Year (Table 2-2)
- Upgradient Data used in 2018 Prediction Limit Calculations (Table 2-3)
- Results of Shapiro-Wilk Test for Normality for 2018 Upgradient Data (Table 2-4)
- Comparison of 2017 Prediction Limits with 2018 Prediction Limits (Table 2-5)

**TABLE 2-1**  
**SUMMARY OF CURRENT PREDICTION LIMIT EXCEEDANCES**  
**Q4 2017**  
**Olympic View Sanitary Landfill**

**Statistical Methodology:**

1. Inter-Well Prediction Limits using DUMPStat™
2. Upgradient Data Set: pooled data from wells MW-13A, MW-13B, MW-16, and MW-35
3. "Detection Monitoring" well comparisons:
  - compliance wells: MW-15R, MW-34A, MW-34C, MW-39, MW-42, MW-43
  - downgradient wells: MW-29A\*, MW-32, MW-33A\*, MW-33C\*, MW-36A\*

\*sampled semi-annually, most current results presented
4. Parameters: all Appendix I and II inorganic and ground water quality parameters
5. Background Data Sets: January 2005 - December 2016
6. Arsenic: only low-level Method 200.8 data used
7. Units: mg/L = milligrams per liter; ug/L = micrograms per liter; mS/cm = millisiemens per centimeter; deg C = d

<b>Parameter</b>	<b>Unit</b>	<b>Well</b>	<b>Latest Result</b>	<b>Date Sampled</b>	<b>Prediction Limit</b>
Alkalinity, bicarbonate (as cacO3)	MG/L	MW-32	110	11/15/2017	96
Alkalinity, bicarbonate (as cacO3)	MG/L	MW-34C	100	11/14/2017	96
Alkalinity, bicarbonate (as cacO3)	MG/L	MW-39	98	11/13/2017	96
Alkalinity, bicarbonate (as cacO3)	MG/L	MW-42	210	11/13/2017	96
Alkalinity, total (as cacO3)	MG/L	MW-32	110	11/15/2017	96
Alkalinity, total (as cacO3)	MG/L	MW-34C	100	11/14/2017	96
Alkalinity, total (as cacO3)	MG/L	MW-39	98	11/13/2017	96
Alkalinity, total (as cacO3)	MG/L	MW-42	210	11/13/2017	96
Ammonia (as n)	MG/L	MW-39	0.47	11/13/2017	0.3
Ammonia (as n)	MG/L	MW-42	4.5	11/13/2017	0.3
Arsenic, total	UG/L	MW-33A	0.61	11/14/2017	0.43
Arsenic, total	UG/L	MW-29A	2.13	11/13/2017	0.43
Arsenic, total	UG/L	MW-32	9.74	11/15/2017	0.43
Arsenic, total	UG/L	MW-33C	2.67	11/14/2017	0.43
Arsenic, total	UG/L	MW-34A	0.442	11/14/2017	0.43
Arsenic, total	UG/L	MW-34C	13.3	11/14/2017	0.43
Arsenic, total	UG/L	MW-36A	0.563	11/14/2017	0.43
Arsenic, total	UG/L	MW-39	1.78	11/13/2017	0.43
Arsenic, total	UG/L	MW-42	1.8	11/13/2017	0.43
Barium, total	MG/L	MW-15R	0.0046	11/14/2017	0.0045
Barium, total	MG/L	MW-29A	0.0076	11/13/2017	0.0045
Barium, total	MG/L	MW-34C	0.09	11/14/2017	0.0045
Barium, total	MG/L	MW-39	0.012	11/13/2017	0.0045
Barium, total	MG/L	MW-42	0.11	11/13/2017	0.0045
Calcium, dissolved	MG/L	MW-32	22	11/15/2017	18
Calcium, dissolved	MG/L	MW-34C	21	11/14/2017	18
Calcium, dissolved	MG/L	MW-42	42	11/13/2017	18
Chloride	MG/L	MW-32	12	11/15/2017	4.4

<u>Parameter</u>	<u>Unit</u>	<u>Well</u>	<u>Latest Result</u>	<u>Date Sampled</u>	<u>Prediction Limit</u>
Chloride	MG/L	MW-34C	5.4	11/14/2017	4.4
Chloride	MG/L	MW-39	5.5	11/13/2017	4.4
Chloride	MG/L	MW-42	21	11/13/2017	4.4
Cobalt, total	MG/L	MW-39	0.0065	11/13/2017	0.003
Iron, total	MG/L	MW-29A	4	11/13/2017	0.31
Iron, total	MG/L	MW-32	0.62	11/15/2017	0.31
Iron, total	MG/L	MW-33A	2.5	11/14/2017	0.31
Iron, total	MG/L	MW-34C	25	11/14/2017	0.31
Iron, total	MG/L	MW-39	36	11/13/2017	0.31
Iron, total	MG/L	MW-42	26	11/13/2017	0.31
Iron, total	MG/L	MW-43	0.74	11/13/2017	0.31
Magnesium, dissolved	MG/L	MW-42	14	11/13/2017	11.15
Manganese, total	MG/L	MW-29A	1.2	11/13/2017	0.062
Manganese, total	MG/L	MW-32	1.9	11/15/2017	0.062
Manganese, total	MG/L	MW-33C	0.15	11/14/2017	0.062
Manganese, total	MG/L	MW-34C	1.1	11/14/2017	0.062
Manganese, total	MG/L	MW-39	0.43	11/13/2017	0.062
Manganese, total	MG/L	MW-42	4.4	11/13/2017	0.062
pH	pH Units	MW-43	5.62	11/13/2017	5.81 - 8.23
Potassium, dissolved	MG/L	MW-33C	1.3	11/14/2017	1.2
Potassium, dissolved	MG/L	MW-42	8.5	11/13/2017	1.2
Sodium, dissolved	MG/L	MW-32	11	11/15/2017	6.3
Sodium, dissolved	MG/L	MW-34A	7.9	11/14/2017	6.3
Sodium, dissolved	MG/L	MW-34C	10	11/14/2017	6.3
Sodium, dissolved	MG/L	MW-39	8.4	11/13/2017	6.3
Sodium, dissolved	MG/L	MW-42	20	11/13/2017	6.3
Specific conductivity	mS/cm	MW-32	0.263	11/15/2017	0.18
Specific conductivity	mS/cm	MW-34C	0.232	11/14/2017	0.18
Specific conductivity	mS/cm	MW-39	0.262	11/13/2017	0.18
Specific conductivity	mS/cm	MW-42	0.56	11/13/2017	0.18
Sulfate	MG/L	MW-32	10	11/15/2017	9.9
Sulfate	MG/L	MW-42	14	11/13/2017	9.9
Total dissolved solids (tds)	MG/L	MW-32	200	11/15/2017	175
Total dissolved solids (tds)	MG/L	MW-34C	180	11/14/2017	175
Total dissolved solids (tds)	MG/L	MW-42	290	11/13/2017	175
Total organic carbon (toc)	MG/L	MW-42	6.8	11/13/2017	6.0

**TABLE 2-2**  
**STATISTICAL PREDICTION LIMITS UPDATED FOR 2018 MONITORING YEAR**  
**Olympic View Sanitary Landfill**

**Statistical Methodology:**

1. Inter-Well Prediction Limits using DUMPStat
2. Upgradient Data Set: pooled data from wells 13A, 13B, 16, and 35
3. "Detection Monitoring" well comparisons:
  - compliance wells
  - performance well
  - downgradient wells
4. Parameters: all Appendix I and II inorganic and ground water quality parameters
5. Background Data Sets: January 2005 - December 2017 (updated annually)
6. Arsenic: only low-level Method 200.8 data used
7. Units: mg/L = milligrams per liter; ug/L = micrograms per liter; mS/cm = millisiemens per centimeter; deg C = degrees Celcius

Constituent	Units	Distributional Assumption <sup>[1]</sup>	Total N <sup>[2]</sup>	Detected N	Mean	Standard Deviation	Prediction Limit <sup>[3]</sup>	Nonparametric Confidence <sup>[4]</sup>
Alkalinity, bicarbonate (as caco3)	MG/L	nonparametric	186	186			96	0.99
Alkalinity, total (as caco3)	MG/L	nonparametric	190	190			96	0.99
Ammonia (as n)	MG/L	nonparametric	186	72			0.3	0.99
Antimony, total	MG/L	nonparametric	70	3			0.0013	0.99
Arsenic, total	UG/L	normal	77	77	0.239	0.0973	0.4663	
Barium, total	MG/L	normal	70	70	0.003	0.0005	0.0044	
Beryllium, total	MG/L	nonparametric	70	0			Current RL*	0.99
Cadmium, total	MG/L	nonparametric	70	0			Current RL*	0.99
Calcium, dissolved	MG/L	nonparametric	190	190			18	0.99
Chloride	MG/L	nonparametric	190	186			4.4	0.99
Chromium, total	MG/L	nonparametric	70	31			0.0092	0.99
Cobalt, total	MG/L	nonparametric	70	0			Current RL*	0.99
Copper, total	MG/L	nonparametric	70	1			0.0021	0.99
Iron, total	MG/L	nonparametric	70	9			0.31	0.99
Lead, total	MG/L	nonparametric	70	1			0.0014	0.99
Magnesium, dissolved	MG/L	normal	190	190	8.242	1.284	11.1905	
Manganese, total	MG/L	nonparametric	69	18			0.032	0.99
Nickel, total	MG/L	nonparametric	70	1			0.0041	0.99
Nitrate (as n)	MG/L	nonparametric	178	178			1.8	0.99
pH	pH Units	normal	181	181	7.021	0.4601	5.84 - 8.20	
Potassium, dissolved	MG/L	nonparametric	190	14			1.4	0.99
Selenium, total	MG/L	nonparametric	70	0			Current RL*	0.99
Silver, total	MG/L	nonparametric	70	0			Current RL*	0.99
Sodium, dissolved	MG/L	nonparametric	190	190			7.7	0.99
Specific conductivity	mS/cm	nonparametric	183	183			0.18	0.99
Sulfate	MG/L	nonparametric	190	189			9.9	0.99
Temperature	deg C	nonparametric	183	183			14.32	0.99
Thallium, total	MG/L	nonparametric	70	0			Current RL*	0.99
Total dissolved solids (tds)	MG/L	nonparametric	190	190			175	0.99
Total organic carbon (toc)	MG/L	nonparametric	178	7			6	0.99
Vanadium, total	MG/L	normal	70	70	0.004	0.0008	0.0062	
Zinc, total	MG/L	nonparametric	70	1			0.0056	0.99

<sup>[1]</sup> Distributional Assumption based on Multiple Group Shapiro-Wilk Test (results presented on Table 2-4 herein).

<sup>[2]</sup> N = number of background data points from the pooled upgradient well data set AFTER removal of outliers (see Table 2-3 for outliers).

<sup>[3]</sup> Prediction Limit calculated at 95% confidence level and adjusted for multiple comparisons and one verification resample per Unified Guidance (USEPA, March 2009).

<sup>[4]</sup> Nonparametric confidence level as calculated by DUMPStat.

\*Current RL: in cases where all background data are non-detected, a nonparametric prediction limit is set at the current constituent-specific laboratory reporting limit (RL).

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Alkalinity, bicarbonate (as cacO3)	MW-13A	03/22/2005		75	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	06/15/2005		63.8	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	09/27/2005		75.6	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	12/15/2005		72.5	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	03/28/2006		80	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	06/21/2006		79	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	09/26/2006		80	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	12/13/2006		82	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	03/27/2007		83	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	06/19/2007		81	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	09/19/2007		79	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	12/19/2007		82	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	03/25/2008		83	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	06/18/2008		82	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	09/17/2008		81	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	12/17/2008		92	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	03/24/2009		81	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	06/17/2009		84	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	09/10/2009		87	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	03/25/2010		86	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	06/23/2010		86	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	09/23/2010		96	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	12/08/2010		82	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	03/30/2011		88	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	06/06/2011		89	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	09/27/2011		89	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	12/14/2011		90	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	03/21/2012		89	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	06/08/2012		87	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	09/26/2012		87	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	12/03/2012		83	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	03/11/2013		81	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	06/05/2013		83	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	12/03/2013		86	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	03/04/2014		87	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	06/02/2014		84	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	09/22/2014		82	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	11/17/2014		79	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	02/23/2015		84	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	05/19/2015		82	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	08/26/2015		77	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	11/10/2015		81	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	02/22/2016		80	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	05/16/2016		90	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	08/31/2016		84	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	11/14/2016		92	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	02/22/2017		85	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	05/24/2017		82	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	08/30/2017		80	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13A	11/13/2017		81	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	03/22/2005		70.6	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	06/15/2005		57.3	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	09/27/2005		72.7	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	12/15/2005		68.8	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	03/29/2006		73	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	06/21/2006		74	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	09/26/2006		75	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	12/13/2006		76	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	03/27/2007		76	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	06/19/2007		74	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	09/18/2007		74	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	12/19/2007		76	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	03/25/2008		77	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	06/18/2008		77	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	09/17/2008		76	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	12/16/2008		74	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	03/24/2009		78	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	06/17/2009		79	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	09/10/2009		81	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	03/25/2010		81	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	06/23/2010		80	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit



**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Alkalinity, bicarbonate (as cacO3)	MW-13B	09/23/2010		81	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	12/08/2010		88	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	03/30/2011		81	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	06/06/2011		81	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	09/27/2011		83	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	12/14/2011		84	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	03/21/2012		83	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	06/08/2012		82	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	09/26/2012		84	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	12/03/2012		82	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	03/11/2013		77	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	06/05/2013		79	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	12/03/2013		84	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	03/04/2014		83	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	06/02/2014		81	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	09/22/2014		80	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	11/17/2014		79	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	02/23/2015		82	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	05/19/2015		81	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	08/26/2015		76	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	11/10/2015		79	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	02/22/2016		77	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	05/16/2016		87	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	08/31/2016		82	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	11/14/2016		80	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	02/22/2017		83	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	05/24/2017		80	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	08/30/2017		80	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-13B	11/13/2017		81	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	03/24/2009		66	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	06/16/2009		59	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	09/09/2009		66	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	03/25/2010		46	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	06/24/2010		71	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	09/24/2010		74	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	12/09/2010		72	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	03/30/2011		53	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	06/07/2011		59	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	09/27/2011		66	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	12/13/2011		60	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	03/21/2012		50	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	06/08/2012		49	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	09/27/2012		57	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	12/04/2012		64	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	03/12/2013		51	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	06/04/2013		50	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	09/05/2013		62	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	12/16/2013		62	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	03/05/2014		57	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	06/02/2014		44	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	09/22/2014		57	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	11/18/2014		57	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	02/23/2015		52	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	05/20/2015		51	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	08/26/2015		51	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	11/11/2015		65	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	02/24/2016		40	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	05/16/2016		50	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	08/31/2016		60	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	11/14/2016		56	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	02/22/2017		45	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	05/24/2017		42	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	08/30/2017		61	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-16	11/13/2017		50	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	03/22/2005		68.2	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	06/14/2005		59	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	09/27/2005		69.2	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	12/15/2005		67.3	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	03/28/2006		74	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	06/21/2006		71	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	09/26/2006		72	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3**  
**Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Alkalinity, bicarbonate (as cacO3)	MW-35	12/12/2006		73	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	03/27/2007		73	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	06/20/2007		70	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	09/18/2007		69	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	12/20/2007		72	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	03/25/2008		77	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	06/18/2008		72	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	09/18/2008		72	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	12/19/2008		68	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	03/24/2009		72	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	06/16/2009		73	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	09/10/2009		74	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	03/25/2010		76	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	06/23/2010		75	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	09/23/2010		75	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	12/09/2010		74	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	03/30/2011		77	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	06/06/2011		76	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	09/26/2011		78	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	12/13/2011		77	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	03/21/2012		77	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	06/06/2012		77	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	09/26/2012		78	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	12/04/2012		76	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	03/13/2013		73	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	06/06/2013		73	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	09/05/2013		77	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	12/16/2013		78	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	03/04/2014		78	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	06/02/2014		76	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	09/22/2014		75	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	11/17/2014		74	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	02/25/2015		77	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	05/19/2015		75	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	08/26/2015		71	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	11/10/2015		75	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	02/22/2016		72	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	05/16/2016		82	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	08/31/2016		77	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	11/15/2016		91	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	02/22/2017		79	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	05/24/2017		76	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	08/30/2017		74	MG/L	
Alkalinity, bicarbonate (as cacO3)	MW-35	11/15/2017		77	MG/L	
Alkalinity, total (as cacO3)	MW-13A	03/22/2005		75	MG/L	
Alkalinity, total (as cacO3)	MW-13A	06/15/2005		63.8	MG/L	
Alkalinity, total (as cacO3)	MW-13A	09/27/2005		75.6	MG/L	
Alkalinity, total (as cacO3)	MW-13A	12/15/2005		72.5	MG/L	
Alkalinity, total (as cacO3)	MW-13A	03/28/2006		80	MG/L	
Alkalinity, total (as cacO3)	MW-13A	06/21/2006		79	MG/L	
Alkalinity, total (as cacO3)	MW-13A	09/26/2006		80	MG/L	
Alkalinity, total (as cacO3)	MW-13A	12/13/2006		82	MG/L	
Alkalinity, total (as cacO3)	MW-13A	03/27/2007		83	MG/L	
Alkalinity, total (as cacO3)	MW-13A	06/19/2007		81	MG/L	
Alkalinity, total (as cacO3)	MW-13A	09/19/2007		79	MG/L	
Alkalinity, total (as cacO3)	MW-13A	12/19/2007		82	MG/L	
Alkalinity, total (as cacO3)	MW-13A	03/25/2008		83	MG/L	
Alkalinity, total (as cacO3)	MW-13A	06/18/2008		82	MG/L	
Alkalinity, total (as cacO3)	MW-13A	09/17/2008		81	MG/L	
Alkalinity, total (as cacO3)	MW-13A	12/17/2008		92	MG/L	
Alkalinity, total (as cacO3)	MW-13A	03/24/2009		81	MG/L	
Alkalinity, total (as cacO3)	MW-13A	06/17/2009		84	MG/L	
Alkalinity, total (as cacO3)	MW-13A	09/10/2009		87	MG/L	
Alkalinity, total (as cacO3)	MW-13A	12/03/2009		84	MG/L	
Alkalinity, total (as cacO3)	MW-13A	03/25/2010		86	MG/L	
Alkalinity, total (as cacO3)	MW-13A	06/23/2010		86	MG/L	
Alkalinity, total (as cacO3)	MW-13A	09/23/2010		96	MG/L	
Alkalinity, total (as cacO3)	MW-13A	12/08/2010		82	MG/L	
Alkalinity, total (as cacO3)	MW-13A	03/30/2011		88	MG/L	
Alkalinity, total (as cacO3)	MW-13A	06/06/2011		89	MG/L	
Alkalinity, total (as cacO3)	MW-13A	09/27/2011		89	MG/L	

\* = outlier for that constituent/well  
ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Alkalinity, total (as cacO3)	MW-13A	12/14/2011		90	MG/L	
Alkalinity, total (as cacO3)	MW-13A	03/21/2012		89	MG/L	
Alkalinity, total (as cacO3)	MW-13A	06/08/2012		87	MG/L	
Alkalinity, total (as cacO3)	MW-13A	09/26/2012		87	MG/L	
Alkalinity, total (as cacO3)	MW-13A	12/03/2012		83	MG/L	
Alkalinity, total (as cacO3)	MW-13A	03/11/2013		81	MG/L	
Alkalinity, total (as cacO3)	MW-13A	06/05/2013		83	MG/L	
Alkalinity, total (as cacO3)	MW-13A	12/03/2013		86	MG/L	
Alkalinity, total (as cacO3)	MW-13A	03/04/2014		87	MG/L	
Alkalinity, total (as cacO3)	MW-13A	06/02/2014		84	MG/L	
Alkalinity, total (as cacO3)	MW-13A	09/22/2014		82	MG/L	
Alkalinity, total (as cacO3)	MW-13A	11/17/2014		79	MG/L	
Alkalinity, total (as cacO3)	MW-13A	02/23/2015		84	MG/L	
Alkalinity, total (as cacO3)	MW-13A	05/19/2015		82	MG/L	
Alkalinity, total (as cacO3)	MW-13A	08/26/2015		77	MG/L	
Alkalinity, total (as cacO3)	MW-13A	11/10/2015		81	MG/L	
Alkalinity, total (as cacO3)	MW-13A	02/22/2016		80	MG/L	
Alkalinity, total (as cacO3)	MW-13A	05/16/2016		90	MG/L	
Alkalinity, total (as cacO3)	MW-13A	08/31/2016		84	MG/L	
Alkalinity, total (as cacO3)	MW-13A	11/14/2016		92	MG/L	
Alkalinity, total (as cacO3)	MW-13A	02/22/2017		85	MG/L	
Alkalinity, total (as cacO3)	MW-13A	05/24/2017		82	MG/L	
Alkalinity, total (as cacO3)	MW-13A	08/30/2017		80	MG/L	
Alkalinity, total (as cacO3)	MW-13A	11/13/2017		81	MG/L	
Alkalinity, total (as cacO3)	MW-13B	03/22/2005		70.6	MG/L	
Alkalinity, total (as cacO3)	MW-13B	06/15/2005		57.3	MG/L	
Alkalinity, total (as cacO3)	MW-13B	09/27/2005		72.7	MG/L	
Alkalinity, total (as cacO3)	MW-13B	12/15/2005		68.8	MG/L	
Alkalinity, total (as cacO3)	MW-13B	03/29/2006		73	MG/L	
Alkalinity, total (as cacO3)	MW-13B	06/21/2006		74	MG/L	
Alkalinity, total (as cacO3)	MW-13B	09/26/2006		75	MG/L	
Alkalinity, total (as cacO3)	MW-13B	12/13/2006		76	MG/L	
Alkalinity, total (as cacO3)	MW-13B	03/27/2007		76	MG/L	
Alkalinity, total (as cacO3)	MW-13B	06/19/2007		74	MG/L	
Alkalinity, total (as cacO3)	MW-13B	09/18/2007		74	MG/L	
Alkalinity, total (as cacO3)	MW-13B	12/19/2007		76	MG/L	
Alkalinity, total (as cacO3)	MW-13B	03/25/2008		77	MG/L	
Alkalinity, total (as cacO3)	MW-13B	06/18/2008		77	MG/L	
Alkalinity, total (as cacO3)	MW-13B	09/17/2008		76	MG/L	
Alkalinity, total (as cacO3)	MW-13B	12/16/2008		74	MG/L	
Alkalinity, total (as cacO3)	MW-13B	03/24/2009		78	MG/L	
Alkalinity, total (as cacO3)	MW-13B	06/17/2009		79	MG/L	
Alkalinity, total (as cacO3)	MW-13B	09/10/2009		81	MG/L	
Alkalinity, total (as cacO3)	MW-13B	12/03/2009		80	MG/L	
Alkalinity, total (as cacO3)	MW-13B	03/25/2010		81	MG/L	
Alkalinity, total (as cacO3)	MW-13B	06/23/2010		80	MG/L	
Alkalinity, total (as cacO3)	MW-13B	09/23/2010		81	MG/L	
Alkalinity, total (as cacO3)	MW-13B	12/08/2010		88	MG/L	
Alkalinity, total (as cacO3)	MW-13B	03/30/2011		81	MG/L	
Alkalinity, total (as cacO3)	MW-13B	06/06/2011		81	MG/L	
Alkalinity, total (as cacO3)	MW-13B	09/27/2011		83	MG/L	
Alkalinity, total (as cacO3)	MW-13B	12/14/2011		84	MG/L	
Alkalinity, total (as cacO3)	MW-13B	03/21/2012		83	MG/L	
Alkalinity, total (as cacO3)	MW-13B	06/08/2012		82	MG/L	
Alkalinity, total (as cacO3)	MW-13B	09/26/2012		84	MG/L	
Alkalinity, total (as cacO3)	MW-13B	12/03/2012		82	MG/L	
Alkalinity, total (as cacO3)	MW-13B	03/11/2013		77	MG/L	
Alkalinity, total (as cacO3)	MW-13B	06/05/2013		79	MG/L	
Alkalinity, total (as cacO3)	MW-13B	12/03/2013		84	MG/L	
Alkalinity, total (as cacO3)	MW-13B	03/04/2014		83	MG/L	
Alkalinity, total (as cacO3)	MW-13B	06/02/2014		81	MG/L	
Alkalinity, total (as cacO3)	MW-13B	09/22/2014		80	MG/L	
Alkalinity, total (as cacO3)	MW-13B	11/17/2014		79	MG/L	
Alkalinity, total (as cacO3)	MW-13B	02/23/2015		82	MG/L	
Alkalinity, total (as cacO3)	MW-13B	05/19/2015		81	MG/L	
Alkalinity, total (as cacO3)	MW-13B	08/26/2015		76	MG/L	
Alkalinity, total (as cacO3)	MW-13B	11/10/2015		79	MG/L	
Alkalinity, total (as cacO3)	MW-13B	02/22/2016		77	MG/L	
Alkalinity, total (as cacO3)	MW-13B	05/16/2016		87	MG/L	
Alkalinity, total (as cacO3)	MW-13B	08/31/2016		82	MG/L	
Alkalinity, total (as cacO3)	MW-13B	11/14/2016		80	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Alkalinity, total (as cacO3)	MW-13B	02/22/2017		83	MG/L	
Alkalinity, total (as cacO3)	MW-13B	05/24/2017		80	MG/L	
Alkalinity, total (as cacO3)	MW-13B	08/30/2017		80	MG/L	
Alkalinity, total (as cacO3)	MW-13B	11/13/2017		81	MG/L	
Alkalinity, total (as cacO3)	MW-16	03/24/2009		66	MG/L	
Alkalinity, total (as cacO3)	MW-16	06/16/2009		59	MG/L	
Alkalinity, total (as cacO3)	MW-16	09/09/2009		66	MG/L	
Alkalinity, total (as cacO3)	MW-16	12/03/2009		77	MG/L	
Alkalinity, total (as cacO3)	MW-16	03/25/2010		46	MG/L	
Alkalinity, total (as cacO3)	MW-16	06/24/2010		71	MG/L	
Alkalinity, total (as cacO3)	MW-16	09/24/2010		74	MG/L	
Alkalinity, total (as cacO3)	MW-16	12/09/2010		72	MG/L	
Alkalinity, total (as cacO3)	MW-16	03/30/2011		53	MG/L	
Alkalinity, total (as cacO3)	MW-16	06/07/2011		59	MG/L	
Alkalinity, total (as cacO3)	MW-16	09/27/2011		66	MG/L	
Alkalinity, total (as cacO3)	MW-16	12/13/2011		60	MG/L	
Alkalinity, total (as cacO3)	MW-16	03/21/2012		50	MG/L	
Alkalinity, total (as cacO3)	MW-16	06/08/2012		49	MG/L	
Alkalinity, total (as cacO3)	MW-16	09/27/2012		57	MG/L	
Alkalinity, total (as cacO3)	MW-16	12/04/2012		64	MG/L	
Alkalinity, total (as cacO3)	MW-16	03/12/2013		51	MG/L	
Alkalinity, total (as cacO3)	MW-16	06/04/2013		50	MG/L	
Alkalinity, total (as cacO3)	MW-16	09/05/2013		62	MG/L	
Alkalinity, total (as cacO3)	MW-16	12/16/2013		62	MG/L	
Alkalinity, total (as cacO3)	MW-16	03/05/2014		57	MG/L	
Alkalinity, total (as cacO3)	MW-16	06/02/2014		44	MG/L	
Alkalinity, total (as cacO3)	MW-16	09/22/2014		57	MG/L	
Alkalinity, total (as cacO3)	MW-16	11/18/2014		57	MG/L	
Alkalinity, total (as cacO3)	MW-16	02/23/2015		52	MG/L	
Alkalinity, total (as cacO3)	MW-16	05/20/2015		51	MG/L	
Alkalinity, total (as cacO3)	MW-16	08/26/2015		51	MG/L	
Alkalinity, total (as cacO3)	MW-16	11/11/2015		65	MG/L	
Alkalinity, total (as cacO3)	MW-16	02/24/2016		40	MG/L	
Alkalinity, total (as cacO3)	MW-16	05/16/2016		50	MG/L	
Alkalinity, total (as cacO3)	MW-16	08/31/2016		60	MG/L	
Alkalinity, total (as cacO3)	MW-16	11/14/2016		56	MG/L	
Alkalinity, total (as cacO3)	MW-16	02/22/2017		45	MG/L	
Alkalinity, total (as cacO3)	MW-16	05/24/2017		42	MG/L	
Alkalinity, total (as cacO3)	MW-16	08/30/2017		61	MG/L	
Alkalinity, total (as cacO3)	MW-16	11/13/2017		50	MG/L	
Alkalinity, total (as cacO3)	MW-35	03/22/2005		68.2	MG/L	
Alkalinity, total (as cacO3)	MW-35	06/14/2005		59	MG/L	
Alkalinity, total (as cacO3)	MW-35	09/27/2005		69.2	MG/L	
Alkalinity, total (as cacO3)	MW-35	12/15/2005		67.3	MG/L	
Alkalinity, total (as cacO3)	MW-35	03/28/2006		73	MG/L	
Alkalinity, total (as cacO3)	MW-35	06/21/2006		71	MG/L	
Alkalinity, total (as cacO3)	MW-35	09/26/2006		72	MG/L	
Alkalinity, total (as cacO3)	MW-35	12/12/2006		73	MG/L	
Alkalinity, total (as cacO3)	MW-35	03/27/2007		73	MG/L	
Alkalinity, total (as cacO3)	MW-35	06/20/2007		70	MG/L	
Alkalinity, total (as cacO3)	MW-35	09/18/2007		69	MG/L	
Alkalinity, total (as cacO3)	MW-35	12/20/2007		72	MG/L	
Alkalinity, total (as cacO3)	MW-35	03/25/2008		77	MG/L	
Alkalinity, total (as cacO3)	MW-35	06/18/2008		72	MG/L	
Alkalinity, total (as cacO3)	MW-35	09/18/2008		72	MG/L	
Alkalinity, total (as cacO3)	MW-35	12/19/2008		68	MG/L	
Alkalinity, total (as cacO3)	MW-35	03/24/2009		72	MG/L	
Alkalinity, total (as cacO3)	MW-35	06/16/2009		73	MG/L	
Alkalinity, total (as cacO3)	MW-35	09/10/2009		74	MG/L	
Alkalinity, total (as cacO3)	MW-35	12/03/2009		74	MG/L	
Alkalinity, total (as cacO3)	MW-35	03/25/2010		76	MG/L	
Alkalinity, total (as cacO3)	MW-35	06/23/2010		75	MG/L	
Alkalinity, total (as cacO3)	MW-35	09/23/2010		75	MG/L	
Alkalinity, total (as cacO3)	MW-35	12/09/2010		74	MG/L	
Alkalinity, total (as cacO3)	MW-35	03/30/2011		77	MG/L	
Alkalinity, total (as cacO3)	MW-35	06/06/2011		76	MG/L	
Alkalinity, total (as cacO3)	MW-35	09/26/2011		78	MG/L	
Alkalinity, total (as cacO3)	MW-35	12/13/2011		77	MG/L	
Alkalinity, total (as cacO3)	MW-35	03/21/2012		77	MG/L	
Alkalinity, total (as cacO3)	MW-35	06/06/2012		77	MG/L	
Alkalinity, total (as cacO3)	MW-35	09/26/2012		78	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Alkalinity, total (as cacO3)	MW-35	12/04/2012		76	MG/L	
Alkalinity, total (as cacO3)	MW-35	03/13/2013		73	MG/L	
Alkalinity, total (as cacO3)	MW-35	06/06/2013		73	MG/L	
Alkalinity, total (as cacO3)	MW-35	09/05/2013		77	MG/L	
Alkalinity, total (as cacO3)	MW-35	12/16/2013		78	MG/L	
Alkalinity, total (as cacO3)	MW-35	03/04/2014		78	MG/L	
Alkalinity, total (as cacO3)	MW-35	06/02/2014		76	MG/L	
Alkalinity, total (as cacO3)	MW-35	09/22/2014		75	MG/L	
Alkalinity, total (as cacO3)	MW-35	11/17/2014		74	MG/L	
Alkalinity, total (as cacO3)	MW-35	02/25/2015		77	MG/L	
Alkalinity, total (as cacO3)	MW-35	05/19/2015		75	MG/L	
Alkalinity, total (as cacO3)	MW-35	08/26/2015		71	MG/L	
Alkalinity, total (as cacO3)	MW-35	11/10/2015		75	MG/L	
Alkalinity, total (as cacO3)	MW-35	02/22/2016		72	MG/L	
Alkalinity, total (as cacO3)	MW-35	05/16/2016		82	MG/L	
Alkalinity, total (as cacO3)	MW-35	08/31/2016		77	MG/L	
Alkalinity, total (as cacO3)	MW-35	11/15/2016		91	MG/L	
Alkalinity, total (as cacO3)	MW-35	02/22/2017		79	MG/L	
Alkalinity, total (as cacO3)	MW-35	05/24/2017		76	MG/L	
Alkalinity, total (as cacO3)	MW-35	08/30/2017		74	MG/L	
Alkalinity, total (as cacO3)	MW-35	11/15/2017		77	MG/L	
Ammonia (as n)	MW-13A	03/22/2005		0.02	MG/L	
Ammonia (as n)	MW-13A	06/15/2005		0.13	MG/L	
Ammonia (as n)	MW-13A	09/27/2005		0.021	MG/L	
Ammonia (as n)	MW-13A	12/15/2005	ND	0.02	MG/L	
Ammonia (as n)	MW-13A	03/28/2006		0.049	MG/L	
Ammonia (as n)	MW-13A	06/21/2006		0.068	MG/L	
Ammonia (as n)	MW-13A	09/26/2006		0.036	MG/L	
Ammonia (as n)	MW-13A	12/13/2006	ND	0.03	MG/L	
Ammonia (as n)	MW-13A	03/27/2007	ND	0.03	MG/L	
Ammonia (as n)	MW-13A	06/19/2007	ND	0.03	MG/L	
Ammonia (as n)	MW-13A	09/19/2007	ND	0.03	MG/L	
Ammonia (as n)	MW-13A	12/19/2007		0.042	MG/L	
Ammonia (as n)	MW-13A	03/25/2008		0.05	MG/L	
Ammonia (as n)	MW-13A	06/18/2008	ND	0.03	MG/L	
Ammonia (as n)	MW-13A	09/17/2008	ND	0.03	MG/L	
Ammonia (as n)	MW-13A	12/17/2008		0.063	MG/L	
Ammonia (as n)	MW-13A	03/24/2009		0.083	MG/L	
Ammonia (as n)	MW-13A	06/17/2009		0.093	MG/L	
Ammonia (as n)	MW-13A	09/10/2009	ND	0.03	MG/L	
Ammonia (as n)	MW-13A	12/03/2009		0.059	MG/L	
Ammonia (as n)	MW-13A	03/25/2010		0.046	MG/L	
Ammonia (as n)	MW-13A	06/23/2010	ND	0.03	MG/L	
Ammonia (as n)	MW-13A	09/23/2010		0.049	MG/L	
Ammonia (as n)	MW-13A	12/08/2010		0.061	MG/L	
Ammonia (as n)	MW-13A	03/30/2011		0.064	MG/L	
Ammonia (as n)	MW-13A	06/06/2011	ND	0.03	MG/L	
Ammonia (as n)	MW-13A	09/27/2011		0.075	MG/L	
Ammonia (as n)	MW-13A	12/14/2011		0.086	MG/L	
Ammonia (as n)	MW-13A	03/21/2012		0.039	MG/L	
Ammonia (as n)	MW-13A	06/08/2012		0.28	MG/L	
Ammonia (as n)	MW-13A	09/26/2012		0.087	MG/L	
Ammonia (as n)	MW-13A	12/03/2012		0.12	MG/L	
Ammonia (as n)	MW-13A	03/11/2013	ND	0.03	MG/L	
Ammonia (as n)	MW-13A	06/05/2013	ND	0.03	MG/L	
Ammonia (as n)	MW-13A	12/03/2013	ND	0.03	MG/L	
Ammonia (as n)	MW-13A	03/04/2014	ND	0.03	MG/L	
Ammonia (as n)	MW-13A	06/02/2014	ND	0.03	MG/L	
Ammonia (as n)	MW-13A	09/22/2014	ND	0.03	MG/L	
Ammonia (as n)	MW-13A	11/17/2014	ND	0.03	MG/L	
Ammonia (as n)	MW-13A	02/23/2015	ND	0.03	MG/L	
Ammonia (as n)	MW-13A	05/19/2015	ND	0.03	MG/L	
Ammonia (as n)	MW-13A	08/26/2015	ND	0.03	MG/L	
Ammonia (as n)	MW-13A	11/10/2015	ND	0.03	MG/L	
Ammonia (as n)	MW-13A	02/22/2016	ND	0.03	MG/L	
Ammonia (as n)	MW-13A	05/16/2016	ND	0.03	MG/L	
Ammonia (as n)	MW-13A	08/31/2016	ND	0.03	MG/L	
Ammonia (as n)	MW-13A	11/14/2016	ND	0.03	MG/L	
Ammonia (as n)	MW-13A	02/22/2017	ND	0.03	MG/L	
Ammonia (as n)	MW-13A	05/24/2017	ND	0.03	MG/L	
Ammonia (as n)	MW-13A	08/30/2017	ND	0.03	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Ammonia (as n)	MW-13A	11/13/2017	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	03/22/2005	ND	0.02	MG/L	
Ammonia (as n)	MW-13B	06/15/2005		0.12	MG/L	
Ammonia (as n)	MW-13B	09/27/2005		0.17	MG/L	
Ammonia (as n)	MW-13B	12/15/2005	ND	0.02	MG/L	
Ammonia (as n)	MW-13B	03/29/2006		0.036	MG/L	
Ammonia (as n)	MW-13B	06/21/2006	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	09/26/2006		0.03	MG/L	
Ammonia (as n)	MW-13B	12/13/2006	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	03/27/2007	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	06/19/2007		0.03	MG/L	
Ammonia (as n)	MW-13B	12/19/2007		0.11	MG/L	
Ammonia (as n)	MW-13B	03/25/2008		0.06	MG/L	
Ammonia (as n)	MW-13B	06/18/2008	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	09/17/2008	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	12/16/2008		0.056	MG/L	
Ammonia (as n)	MW-13B	03/24/2009		0.063	MG/L	
Ammonia (as n)	MW-13B	06/17/2009		0.087	MG/L	
Ammonia (as n)	MW-13B	09/10/2009		0.045	MG/L	
Ammonia (as n)	MW-13B	12/03/2009	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	03/25/2010		0.044	MG/L	
Ammonia (as n)	MW-13B	06/23/2010	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	09/23/2010		0.045	MG/L	
Ammonia (as n)	MW-13B	12/08/2010		0.052	MG/L	
Ammonia (as n)	MW-13B	03/30/2011		0.062	MG/L	
Ammonia (as n)	MW-13B	06/06/2011	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	09/27/2011		0.032	MG/L	
Ammonia (as n)	MW-13B	12/14/2011		0.03	MG/L	
Ammonia (as n)	MW-13B	03/21/2012	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	06/08/2012		0.2	MG/L	
Ammonia (as n)	MW-13B	09/26/2012		0.076	MG/L	
Ammonia (as n)	MW-13B	12/03/2012	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	03/11/2013	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	06/05/2013	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	12/03/2013	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	03/04/2014	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	06/02/2014	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	09/22/2014	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	11/17/2014	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	02/23/2015	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	05/19/2015	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	08/26/2015	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	11/10/2015	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	02/22/2016	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	05/16/2016	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	08/31/2016	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	11/14/2016	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	02/22/2017	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	05/24/2017	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	08/30/2017	ND	0.03	MG/L	
Ammonia (as n)	MW-13B	11/13/2017	ND	0.03	MG/L	
Ammonia (as n)	MW-16	03/24/2009		0.062	MG/L	
Ammonia (as n)	MW-16	06/16/2009		0.093	MG/L	
Ammonia (as n)	MW-16	09/09/2009		0.036	MG/L	
Ammonia (as n)	MW-16	12/03/2009		0.058	MG/L	
Ammonia (as n)	MW-16	03/25/2010		0.046	MG/L	
Ammonia (as n)	MW-16	06/24/2010	ND	0.03	MG/L	
Ammonia (as n)	MW-16	09/24/2010	ND	0.03	MG/L	
Ammonia (as n)	MW-16	12/09/2010		0.059	MG/L	
Ammonia (as n)	MW-16	03/30/2011		0.06	MG/L	
Ammonia (as n)	MW-16	06/07/2011		0.048	MG/L	
Ammonia (as n)	MW-16	09/27/2011	ND	0.03	MG/L	
Ammonia (as n)	MW-16	12/13/2011	ND	0.03	MG/L	
Ammonia (as n)	MW-16	03/21/2012		0.042	MG/L	
Ammonia (as n)	MW-16	06/08/2012		0.34	MG/L	*
Ammonia (as n)	MW-16	09/27/2012		0.3	MG/L	
Ammonia (as n)	MW-16	12/04/2012	ND	0.03	MG/L	
Ammonia (as n)	MW-16	03/12/2013	ND	0.03	MG/L	
Ammonia (as n)	MW-16	06/04/2013	ND	0.03	MG/L	
Ammonia (as n)	MW-16	09/05/2013	ND	0.03	MG/L	
Ammonia (as n)	MW-16	12/16/2013		0.096	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Ammonia (as n)	MW-16	03/05/2014		0.051	MG/L	
Ammonia (as n)	MW-16	06/02/2014		0.058	MG/L	
Ammonia (as n)	MW-16	09/22/2014	ND	0.03	MG/L	
Ammonia (as n)	MW-16	11/18/2014	ND	0.03	MG/L	
Ammonia (as n)	MW-16	02/23/2015	ND	0.03	MG/L	
Ammonia (as n)	MW-16	05/20/2015	ND	0.03	MG/L	
Ammonia (as n)	MW-16	08/26/2015	ND	0.03	MG/L	
Ammonia (as n)	MW-16	11/11/2015	ND	0.03	MG/L	
Ammonia (as n)	MW-16	02/24/2016	ND	0.03	MG/L	
Ammonia (as n)	MW-16	05/16/2016	ND	0.03	MG/L	
Ammonia (as n)	MW-16	08/31/2016	ND	0.03	MG/L	
Ammonia (as n)	MW-16	11/14/2016	ND	0.03	MG/L	
Ammonia (as n)	MW-16	02/22/2017	ND	0.03	MG/L	
Ammonia (as n)	MW-16	05/24/2017	ND	0.03	MG/L	
Ammonia (as n)	MW-16	08/30/2017	ND	0.03	MG/L	
Ammonia (as n)	MW-16	11/13/2017	ND	0.03	MG/L	
Ammonia (as n)	MW-35	03/22/2005	ND	0.02	MG/L	
Ammonia (as n)	MW-35	06/14/2005		0.12	MG/L	
Ammonia (as n)	MW-35	09/27/2005		0.15	MG/L	
Ammonia (as n)	MW-35	12/15/2005	ND	0.02	MG/L	
Ammonia (as n)	MW-35	03/28/2006	ND	0.03	MG/L	
Ammonia (as n)	MW-35	06/21/2006	ND	0.03	MG/L	
Ammonia (as n)	MW-35	09/26/2006		0.033	MG/L	
Ammonia (as n)	MW-35	12/12/2006	ND	0.03	MG/L	
Ammonia (as n)	MW-35	03/27/2007	ND	0.03	MG/L	
Ammonia (as n)	MW-35	06/20/2007		0.042	MG/L	
Ammonia (as n)	MW-35	12/20/2007		0.06	MG/L	
Ammonia (as n)	MW-35	03/25/2008		0.059	MG/L	
Ammonia (as n)	MW-35	06/18/2008	ND	0.03	MG/L	
Ammonia (as n)	MW-35	09/18/2008	ND	0.03	MG/L	
Ammonia (as n)	MW-35	12/19/2008		0.081	MG/L	
Ammonia (as n)	MW-35	03/24/2009		0.06	MG/L	
Ammonia (as n)	MW-35	06/16/2009		0.066	MG/L	
Ammonia (as n)	MW-35	09/10/2009	ND	0.03	MG/L	
Ammonia (as n)	MW-35	12/03/2009		0.076	MG/L	
Ammonia (as n)	MW-35	03/25/2010		0.041	MG/L	
Ammonia (as n)	MW-35	06/23/2010	ND	0.03	MG/L	
Ammonia (as n)	MW-35	09/23/2010		0.053	MG/L	
Ammonia (as n)	MW-35	12/09/2010		0.055	MG/L	
Ammonia (as n)	MW-35	03/30/2011		0.063	MG/L	
Ammonia (as n)	MW-35	06/06/2011		0.18	MG/L	
Ammonia (as n)	MW-35	09/26/2011		0.065	MG/L	
Ammonia (as n)	MW-35	12/13/2011	ND	0.03	MG/L	
Ammonia (as n)	MW-35	03/21/2012		0.03	MG/L	
Ammonia (as n)	MW-35	06/06/2012		0.6	MG/L	*
Ammonia (as n)	MW-35	09/26/2012		0.069	MG/L	
Ammonia (as n)	MW-35	12/04/2012	ND	0.03	MG/L	
Ammonia (as n)	MW-35	03/13/2013	ND	0.03	MG/L	
Ammonia (as n)	MW-35	06/06/2013	ND	0.03	MG/L	
Ammonia (as n)	MW-35	09/05/2013	ND	0.03	MG/L	
Ammonia (as n)	MW-35	12/16/2013	ND	0.03	MG/L	
Ammonia (as n)	MW-35	03/04/2014	ND	0.03	MG/L	
Ammonia (as n)	MW-35	06/02/2014	ND	0.03	MG/L	
Ammonia (as n)	MW-35	09/22/2014	ND	0.03	MG/L	
Ammonia (as n)	MW-35	11/17/2014	ND	0.03	MG/L	
Ammonia (as n)	MW-35	02/25/2015	ND	0.03	MG/L	
Ammonia (as n)	MW-35	05/19/2015	ND	0.03	MG/L	
Ammonia (as n)	MW-35	08/26/2015	ND	0.03	MG/L	
Ammonia (as n)	MW-35	11/10/2015	ND	0.03	MG/L	
Ammonia (as n)	MW-35	02/22/2016	ND	0.03	MG/L	
Ammonia (as n)	MW-35	05/16/2016	ND	0.03	MG/L	
Ammonia (as n)	MW-35	08/31/2016	ND	0.03	MG/L	
Ammonia (as n)	MW-35	11/15/2016	ND	0.03	MG/L	
Ammonia (as n)	MW-35	02/22/2017	ND	0.03	MG/L	
Ammonia (as n)	MW-35	05/24/2017	ND	0.03	MG/L	
Ammonia (as n)	MW-35	08/30/2017	ND	0.03	MG/L	
Ammonia (as n)	MW-35	11/15/2017	ND	0.03	MG/L	
Antimony, total	MW-13A	12/03/2013	ND	0.001	MG/L	
Antimony, total	MW-13A	03/04/2014	ND	0.001	MG/L	
Antimony, total	MW-13A	06/02/2014	ND	0.001	MG/L	
Antimony, total	MW-13A	09/22/2014	ND	0.001	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Antimony, total	MW-13A	11/17/2014	ND	0.001	MG/L	
Antimony, total	MW-13A	02/23/2015	ND	0.001	MG/L	
Antimony, total	MW-13A	05/19/2015	ND	0.001	MG/L	
Antimony, total	MW-13A	08/26/2015	ND	0.001	MG/L	
Antimony, total	MW-13A	11/10/2015	ND	0.001	MG/L	
Antimony, total	MW-13A	02/22/2016	ND	0.001	MG/L	
Antimony, total	MW-13A	05/16/2016	ND	0.001	MG/L	
Antimony, total	MW-13A	08/31/2016		0.001	MG/L	
Antimony, total	MW-13A	11/14/2016	ND	0.001	MG/L	
Antimony, total	MW-13A	02/22/2017	ND	0.001	MG/L	
Antimony, total	MW-13A	05/24/2017	ND	0.001	MG/L	
Antimony, total	MW-13A	08/30/2017	ND	0.001	MG/L	
Antimony, total	MW-13A	11/13/2017	ND	0.001	MG/L	
Antimony, total	MW-13B	12/03/2013	ND	0.001	MG/L	
Antimony, total	MW-13B	03/04/2014	ND	0.001	MG/L	
Antimony, total	MW-13B	06/02/2014	ND	0.001	MG/L	
Antimony, total	MW-13B	09/22/2014	ND	0.001	MG/L	
Antimony, total	MW-13B	11/17/2014	ND	0.001	MG/L	
Antimony, total	MW-13B	02/23/2015	ND	0.001	MG/L	
Antimony, total	MW-13B	05/19/2015	ND	0.001	MG/L	
Antimony, total	MW-13B	08/26/2015	ND	0.001	MG/L	
Antimony, total	MW-13B	11/10/2015	ND	0.001	MG/L	
Antimony, total	MW-13B	02/22/2016	ND	0.001	MG/L	
Antimony, total	MW-13B	05/16/2016	ND	0.001	MG/L	
Antimony, total	MW-13B	08/31/2016	ND	0.001	MG/L	
Antimony, total	MW-13B	11/14/2016	ND	0.001	MG/L	
Antimony, total	MW-13B	02/22/2017	ND	0.001	MG/L	
Antimony, total	MW-13B	05/24/2017	ND	0.001	MG/L	
Antimony, total	MW-13B	08/30/2017	ND	0.001	MG/L	
Antimony, total	MW-13B	11/13/2017	ND	0.001	MG/L	
Antimony, total	MW-16	09/05/2013	ND	0.001	MG/L	
Antimony, total	MW-16	12/16/2013	ND	0.001	MG/L	
Antimony, total	MW-16	03/05/2014	ND	0.001	MG/L	
Antimony, total	MW-16	06/02/2014	ND	0.001	MG/L	
Antimony, total	MW-16	09/22/2014	ND	0.001	MG/L	
Antimony, total	MW-16	11/18/2014	ND	0.001	MG/L	
Antimony, total	MW-16	02/23/2015		0.0011	MG/L	
Antimony, total	MW-16	05/20/2015	ND	0.001	MG/L	
Antimony, total	MW-16	08/26/2015	ND	0.001	MG/L	
Antimony, total	MW-16	11/11/2015		0.0013	MG/L	
Antimony, total	MW-16	02/24/2016	ND	0.001	MG/L	
Antimony, total	MW-16	05/16/2016	ND	0.001	MG/L	
Antimony, total	MW-16	08/31/2016	ND	0.001	MG/L	
Antimony, total	MW-16	11/14/2016	ND	0.001	MG/L	
Antimony, total	MW-16	02/22/2017	ND	0.001	MG/L	
Antimony, total	MW-16	05/24/2017	ND	0.001	MG/L	
Antimony, total	MW-16	08/30/2017	ND	0.001	MG/L	
Antimony, total	MW-16	11/13/2017	ND	0.001	MG/L	
Antimony, total	MW-35	09/05/2013	ND	0.001	MG/L	
Antimony, total	MW-35	12/16/2013	ND	0.001	MG/L	
Antimony, total	MW-35	03/04/2014	ND	0.001	MG/L	
Antimony, total	MW-35	06/02/2014	ND	0.001	MG/L	
Antimony, total	MW-35	09/22/2014	ND	0.001	MG/L	
Antimony, total	MW-35	11/17/2014	ND	0.001	MG/L	
Antimony, total	MW-35	02/25/2015	ND	0.001	MG/L	
Antimony, total	MW-35	05/19/2015	ND	0.001	MG/L	
Antimony, total	MW-35	08/26/2015	ND	0.001	MG/L	
Antimony, total	MW-35	11/10/2015	ND	0.001	MG/L	
Antimony, total	MW-35	02/22/2016	ND	0.001	MG/L	
Antimony, total	MW-35	05/16/2016	ND	0.001	MG/L	
Antimony, total	MW-35	08/31/2016	ND	0.001	MG/L	
Antimony, total	MW-35	11/15/2016	ND	0.001	MG/L	
Antimony, total	MW-35	02/22/2017	ND	0.001	MG/L	
Antimony, total	MW-35	05/24/2017	ND	0.001	MG/L	
Antimony, total	MW-35	08/30/2017	ND	0.001	MG/L	
Antimony, total	MW-35	11/15/2017	ND	0.001	MG/L	
Arsenic, total	MW-13A	03/22/2005	ND	5	UG/L	*
Arsenic, total	MW-13A	06/15/2005		0.22	UG/L	
Arsenic, total	MW-13A	09/27/2005		0.23	UG/L	
Arsenic, total	MW-13A	12/15/2005		0.21	UG/L	
Arsenic, total	MW-13A	12/03/2013		0.17	UG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit



**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Arsenic, total	MW-13A	03/04/2014		0.18	UG/L	
Arsenic, total	MW-13A	06/02/2014		0.2	UG/L	
Arsenic, total	MW-13A	09/22/2014		0.17	UG/L	
Arsenic, total	MW-13A	11/17/2014		0.18	UG/L	
Arsenic, total	MW-13A	02/23/2015		0.21	UG/L	
Arsenic, total	MW-13A	05/19/2015		0.18	UG/L	
Arsenic, total	MW-13A	08/26/2015		0.19	UG/L	
Arsenic, total	MW-13A	11/10/2015		0.2	UG/L	
Arsenic, total	MW-13A	02/22/2016		0.2	UG/L	
Arsenic, total	MW-13A	05/16/2016		0.16	UG/L	
Arsenic, total	MW-13A	08/31/2016		0.177	UG/L	
Arsenic, total	MW-13A	11/14/2016		0.17	UG/L	
Arsenic, total	MW-13A	02/22/2017		0.201	UG/L	
Arsenic, total	MW-13A	05/24/2017		0.181	UG/L	
Arsenic, total	MW-13A	08/30/2017		0.191	UG/L	
Arsenic, total	MW-13A	11/13/2017		0.193	UG/L	
Arsenic, total	MW-13B	03/22/2005	ND	5	UG/L	*
Arsenic, total	MW-13B	06/15/2005		0.37	UG/L	
Arsenic, total	MW-13B	09/27/2005		0.39	UG/L	
Arsenic, total	MW-13B	12/15/2005		0.38	UG/L	
Arsenic, total	MW-13B	12/03/2013		0.28	UG/L	
Arsenic, total	MW-13B	03/04/2014		0.32	UG/L	
Arsenic, total	MW-13B	06/02/2014		0.33	UG/L	
Arsenic, total	MW-13B	09/22/2014		0.3	UG/L	
Arsenic, total	MW-13B	11/17/2014		0.3	UG/L	
Arsenic, total	MW-13B	02/23/2015		0.36	UG/L	
Arsenic, total	MW-13B	05/19/2015		0.31	UG/L	
Arsenic, total	MW-13B	08/26/2015		0.31	UG/L	
Arsenic, total	MW-13B	11/10/2015		0.3	UG/L	
Arsenic, total	MW-13B	02/22/2016		0.3	UG/L	
Arsenic, total	MW-13B	05/16/2016		0.29	UG/L	
Arsenic, total	MW-13B	08/31/2016		0.311	UG/L	
Arsenic, total	MW-13B	11/14/2016		0.314	UG/L	
Arsenic, total	MW-13B	02/22/2017		0.324	UG/L	
Arsenic, total	MW-13B	05/24/2017		0.327	UG/L	
Arsenic, total	MW-13B	08/30/2017		0.338	UG/L	
Arsenic, total	MW-13B	11/13/2017		0.311	UG/L	
Arsenic, total	MW-16	12/23/2013		0.29	UG/L	
Arsenic, total	MW-16	03/05/2014		0.43	UG/L	
Arsenic, total	MW-16	06/02/2014		0.33	UG/L	
Arsenic, total	MW-16	09/22/2014		0.32	UG/L	
Arsenic, total	MW-16	11/18/2014		0.35	UG/L	
Arsenic, total	MW-16	02/23/2015		0.37	UG/L	
Arsenic, total	MW-16	05/20/2015		0.34	UG/L	
Arsenic, total	MW-16	08/26/2015		0.32	UG/L	
Arsenic, total	MW-16	11/11/2015		0.3	UG/L	
Arsenic, total	MW-16	02/24/2016		0.3	UG/L	
Arsenic, total	MW-16	05/16/2016		0.3	UG/L	
Arsenic, total	MW-16	08/31/2016		0.311	UG/L	
Arsenic, total	MW-16	11/14/2016		0.381	UG/L	
Arsenic, total	MW-16	02/22/2017		0.383	UG/L	
Arsenic, total	MW-16	05/24/2017		0.375	UG/L	
Arsenic, total	MW-16	08/30/2017		0.353	UG/L	
Arsenic, total	MW-16	11/13/2017		0.364	UG/L	
Arsenic, total	MW-35	03/22/2005	ND	5	UG/L	*
Arsenic, total	MW-35	06/14/2005		0.14	UG/L	
Arsenic, total	MW-35	09/27/2005		0.15	UG/L	
Arsenic, total	MW-35	12/15/2005		0.14	UG/L	
Arsenic, total	MW-35	12/23/2013		0.12	UG/L	
Arsenic, total	MW-35	03/04/2014		0.11	UG/L	
Arsenic, total	MW-35	06/02/2014		0.12	UG/L	
Arsenic, total	MW-35	09/22/2014		0.11	UG/L	
Arsenic, total	MW-35	11/17/2014		0.12	UG/L	
Arsenic, total	MW-35	02/25/2015		0.11	UG/L	
Arsenic, total	MW-35	05/19/2015		0.11	UG/L	
Arsenic, total	MW-35	08/26/2015		0.11	UG/L	
Arsenic, total	MW-35	11/10/2015		0.1	UG/L	
Arsenic, total	MW-35	02/22/2016		0.1	UG/L	
Arsenic, total	MW-35	05/16/2016		0.1	UG/L	
Arsenic, total	MW-35	08/31/2016		0.109	UG/L	
Arsenic, total	MW-35	11/15/2016		0.114	UG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Arsenic, total	MW-35	02/22/2017		0.12	UG/L	
Arsenic, total	MW-35	05/24/2017		0.134	UG/L	
Arsenic, total	MW-35	08/30/2017		0.114	UG/L	
Arsenic, total	MW-35	11/15/2017		0.107	UG/L	
Barium, total	MW-13A	12/03/2013		0.003	MG/L	
Barium, total	MW-13A	03/04/2014		0.0029	MG/L	
Barium, total	MW-13A	06/02/2014		0.0029	MG/L	
Barium, total	MW-13A	09/22/2014		0.0027	MG/L	
Barium, total	MW-13A	11/17/2014		0.0026	MG/L	
Barium, total	MW-13A	02/23/2015		0.0024	MG/L	
Barium, total	MW-13A	05/19/2015		0.0023	MG/L	
Barium, total	MW-13A	08/26/2015		0.0033	MG/L	
Barium, total	MW-13A	11/10/2015		0.003	MG/L	
Barium, total	MW-13A	02/22/2016		0.0023	MG/L	
Barium, total	MW-13A	05/16/2016		0.003	MG/L	
Barium, total	MW-13A	08/31/2016		0.0029	MG/L	
Barium, total	MW-13A	11/14/2016		0.0028	MG/L	
Barium, total	MW-13A	02/22/2017		0.0028	MG/L	
Barium, total	MW-13A	05/24/2017		0.0025	MG/L	
Barium, total	MW-13A	08/30/2017		0.0025	MG/L	
Barium, total	MW-13A	11/13/2017		0.003	MG/L	
Barium, total	MW-13B	12/03/2013		0.0035	MG/L	
Barium, total	MW-13B	03/04/2014		0.0032	MG/L	
Barium, total	MW-13B	06/02/2014		0.0031	MG/L	
Barium, total	MW-13B	09/22/2014		0.0033	MG/L	
Barium, total	MW-13B	11/17/2014		0.0037	MG/L	
Barium, total	MW-13B	02/23/2015		0.0034	MG/L	
Barium, total	MW-13B	05/19/2015		0.0033	MG/L	
Barium, total	MW-13B	08/26/2015		0.0039	MG/L	
Barium, total	MW-13B	11/10/2015		0.0036	MG/L	
Barium, total	MW-13B	02/22/2016		0.0036	MG/L	
Barium, total	MW-13B	05/16/2016		0.0034	MG/L	
Barium, total	MW-13B	08/31/2016		0.0041	MG/L	
Barium, total	MW-13B	11/14/2016		0.0029	MG/L	
Barium, total	MW-13B	02/22/2017		0.0034	MG/L	
Barium, total	MW-13B	05/24/2017		0.0033	MG/L	
Barium, total	MW-13B	08/30/2017		0.0033	MG/L	
Barium, total	MW-13B	11/13/2017		0.0035	MG/L	
Barium, total	MW-16	09/05/2013		0.0041	MG/L	
Barium, total	MW-16	12/16/2013		0.0043	MG/L	
Barium, total	MW-16	03/05/2014		0.0036	MG/L	
Barium, total	MW-16	06/02/2014		0.0025	MG/L	
Barium, total	MW-16	09/22/2014		0.0033	MG/L	
Barium, total	MW-16	11/18/2014		0.0039	MG/L	
Barium, total	MW-16	02/23/2015		0.0036	MG/L	
Barium, total	MW-16	05/20/2015		0.0034	MG/L	
Barium, total	MW-16	08/26/2015		0.0038	MG/L	
Barium, total	MW-16	11/11/2015		0.0043	MG/L	
Barium, total	MW-16	02/24/2016		0.0027	MG/L	
Barium, total	MW-16	05/16/2016		0.0031	MG/L	
Barium, total	MW-16	08/31/2016		0.0042	MG/L	
Barium, total	MW-16	11/14/2016		0.0045	MG/L	
Barium, total	MW-16	02/22/2017		0.0027	MG/L	
Barium, total	MW-16	05/24/2017		0.0026	MG/L	
Barium, total	MW-16	08/30/2017		0.0031	MG/L	
Barium, total	MW-16	11/13/2017		0.0035	MG/L	
Barium, total	MW-35	09/05/2013		0.0034	MG/L	
Barium, total	MW-35	12/16/2013		0.0031	MG/L	
Barium, total	MW-35	03/04/2014		0.003	MG/L	
Barium, total	MW-35	06/02/2014		0.0034	MG/L	
Barium, total	MW-35	09/22/2014		0.0034	MG/L	
Barium, total	MW-35	11/17/2014		0.0034	MG/L	
Barium, total	MW-35	02/25/2015		0.003	MG/L	
Barium, total	MW-35	05/19/2015		0.0031	MG/L	
Barium, total	MW-35	08/26/2015		0.0029	MG/L	
Barium, total	MW-35	11/10/2015		0.003	MG/L	
Barium, total	MW-35	02/22/2016		0.0031	MG/L	
Barium, total	MW-35	05/16/2016		0.0033	MG/L	
Barium, total	MW-35	08/31/2016		0.0029	MG/L	
Barium, total	MW-35	11/15/2016		0.0027	MG/L	
Barium, total	MW-35	02/22/2017		0.0031	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Barium, total	MW-35	05/24/2017		0.0027	MG/L	
Barium, total	MW-35	08/30/2017		0.0028	MG/L	
Barium, total	MW-35	11/15/2017		0.0028	MG/L	
Beryllium, total	MW-13A	12/03/2013	ND	0.001	MG/L	
Beryllium, total	MW-13A	03/04/2014	ND	0.001	MG/L	
Beryllium, total	MW-13A	06/02/2014	ND	0.001	MG/L	
Beryllium, total	MW-13A	09/22/2014	ND	0.001	MG/L	
Beryllium, total	MW-13A	11/17/2014	ND	0.001	MG/L	
Beryllium, total	MW-13A	02/23/2015	ND	0.001	MG/L	
Beryllium, total	MW-13A	05/19/2015	ND	0.001	MG/L	
Beryllium, total	MW-13A	08/26/2015	ND	0.001	MG/L	
Beryllium, total	MW-13A	11/10/2015	ND	0.001	MG/L	
Beryllium, total	MW-13A	02/22/2016	ND	0.001	MG/L	
Beryllium, total	MW-13A	05/16/2016	ND	0.001	MG/L	
Beryllium, total	MW-13A	08/31/2016	ND	0.001	MG/L	
Beryllium, total	MW-13A	11/14/2016	ND	0.001	MG/L	
Beryllium, total	MW-13A	02/22/2017	ND	0.001	MG/L	
Beryllium, total	MW-13A	05/24/2017	ND	0.001	MG/L	
Beryllium, total	MW-13A	08/30/2017	ND	0.001	MG/L	
Beryllium, total	MW-13A	11/13/2017	ND	0.001	MG/L	
Beryllium, total	MW-13B	12/03/2013	ND	0.001	MG/L	
Beryllium, total	MW-13B	03/04/2014	ND	0.001	MG/L	
Beryllium, total	MW-13B	06/02/2014	ND	0.001	MG/L	
Beryllium, total	MW-13B	09/22/2014	ND	0.001	MG/L	
Beryllium, total	MW-13B	11/17/2014	ND	0.001	MG/L	
Beryllium, total	MW-13B	02/23/2015	ND	0.001	MG/L	
Beryllium, total	MW-13B	05/19/2015	ND	0.001	MG/L	
Beryllium, total	MW-13B	08/26/2015	ND	0.001	MG/L	
Beryllium, total	MW-13B	11/10/2015	ND	0.001	MG/L	
Beryllium, total	MW-13B	02/22/2016	ND	0.001	MG/L	
Beryllium, total	MW-13B	05/16/2016	ND	0.001	MG/L	
Beryllium, total	MW-13B	08/31/2016	ND	0.001	MG/L	
Beryllium, total	MW-13B	11/14/2016	ND	0.001	MG/L	
Beryllium, total	MW-13B	02/22/2017	ND	0.001	MG/L	
Beryllium, total	MW-13B	05/24/2017	ND	0.001	MG/L	
Beryllium, total	MW-13B	08/30/2017	ND	0.001	MG/L	
Beryllium, total	MW-13B	11/13/2017	ND	0.001	MG/L	
Beryllium, total	MW-16	09/05/2013	ND	0.001	MG/L	
Beryllium, total	MW-16	12/16/2013	ND	0.001	MG/L	
Beryllium, total	MW-16	03/05/2014	ND	0.001	MG/L	
Beryllium, total	MW-16	06/02/2014	ND	0.001	MG/L	
Beryllium, total	MW-16	09/22/2014	ND	0.001	MG/L	
Beryllium, total	MW-16	11/18/2014	ND	0.001	MG/L	
Beryllium, total	MW-16	02/23/2015	ND	0.001	MG/L	
Beryllium, total	MW-16	05/20/2015	ND	0.001	MG/L	
Beryllium, total	MW-16	08/26/2015	ND	0.001	MG/L	
Beryllium, total	MW-16	11/11/2015	ND	0.001	MG/L	
Beryllium, total	MW-16	02/24/2016	ND	0.001	MG/L	
Beryllium, total	MW-16	05/16/2016	ND	0.001	MG/L	
Beryllium, total	MW-16	08/31/2016	ND	0.001	MG/L	
Beryllium, total	MW-16	11/14/2016	ND	0.001	MG/L	
Beryllium, total	MW-16	02/22/2017	ND	0.001	MG/L	
Beryllium, total	MW-16	05/24/2017	ND	0.001	MG/L	
Beryllium, total	MW-16	08/30/2017	ND	0.001	MG/L	
Beryllium, total	MW-16	11/13/2017	ND	0.001	MG/L	
Beryllium, total	MW-35	09/05/2013	ND	0.001	MG/L	
Beryllium, total	MW-35	12/16/2013	ND	0.001	MG/L	
Beryllium, total	MW-35	03/04/2014	ND	0.001	MG/L	
Beryllium, total	MW-35	06/02/2014	ND	0.001	MG/L	
Beryllium, total	MW-35	09/22/2014	ND	0.001	MG/L	
Beryllium, total	MW-35	11/17/2014	ND	0.001	MG/L	
Beryllium, total	MW-35	02/25/2015	ND	0.001	MG/L	
Beryllium, total	MW-35	05/19/2015	ND	0.001	MG/L	
Beryllium, total	MW-35	08/26/2015	ND	0.001	MG/L	
Beryllium, total	MW-35	11/10/2015	ND	0.001	MG/L	
Beryllium, total	MW-35	02/22/2016	ND	0.001	MG/L	
Beryllium, total	MW-35	05/16/2016	ND	0.001	MG/L	
Beryllium, total	MW-35	08/31/2016	ND	0.001	MG/L	
Beryllium, total	MW-35	11/15/2016	ND	0.001	MG/L	
Beryllium, total	MW-35	02/22/2017	ND	0.001	MG/L	
Beryllium, total	MW-35	05/24/2017	ND	0.001	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Beryllium, total	MW-35	08/30/2017	ND	0.001	MG/L	
Beryllium, total	MW-35	11/15/2017	ND	0.001	MG/L	
Cadmium, total	MW-13A	12/03/2013	ND	0.0002	MG/L	
Cadmium, total	MW-13A	03/04/2014	ND	0.0002	MG/L	
Cadmium, total	MW-13A	06/02/2014	ND	0.0002	MG/L	
Cadmium, total	MW-13A	09/22/2014	ND	0.0002	MG/L	
Cadmium, total	MW-13A	11/17/2014	ND	0.0002	MG/L	
Cadmium, total	MW-13A	02/23/2015	ND	0.0002	MG/L	
Cadmium, total	MW-13A	05/19/2015	ND	0.0002	MG/L	
Cadmium, total	MW-13A	08/26/2015	ND	0.0002	MG/L	
Cadmium, total	MW-13A	11/10/2015	ND	0.0002	MG/L	
Cadmium, total	MW-13A	02/22/2016	ND	0.0002	MG/L	
Cadmium, total	MW-13A	05/16/2016	ND	0.0002	MG/L	
Cadmium, total	MW-13A	08/31/2016	ND	0.0002	MG/L	
Cadmium, total	MW-13A	11/14/2016	ND	0.0002	MG/L	
Cadmium, total	MW-13A	02/22/2017	ND	0.0002	MG/L	
Cadmium, total	MW-13A	05/24/2017	ND	0.0002	MG/L	
Cadmium, total	MW-13A	08/30/2017	ND	0.0002	MG/L	
Cadmium, total	MW-13A	11/13/2017	ND	0.0002	MG/L	
Cadmium, total	MW-13B	12/03/2013	ND	0.0002	MG/L	
Cadmium, total	MW-13B	03/04/2014	ND	0.0002	MG/L	
Cadmium, total	MW-13B	06/02/2014	ND	0.0002	MG/L	
Cadmium, total	MW-13B	09/22/2014	ND	0.0002	MG/L	
Cadmium, total	MW-13B	11/17/2014	ND	0.0002	MG/L	
Cadmium, total	MW-13B	02/23/2015	ND	0.0002	MG/L	
Cadmium, total	MW-13B	05/19/2015	ND	0.0002	MG/L	
Cadmium, total	MW-13B	08/26/2015	ND	0.0002	MG/L	
Cadmium, total	MW-13B	11/10/2015	ND	0.0002	MG/L	
Cadmium, total	MW-13B	02/22/2016	ND	0.0002	MG/L	
Cadmium, total	MW-13B	05/16/2016	ND	0.0002	MG/L	
Cadmium, total	MW-13B	08/31/2016	ND	0.0002	MG/L	
Cadmium, total	MW-13B	11/14/2016	ND	0.0002	MG/L	
Cadmium, total	MW-13B	02/22/2017	ND	0.0002	MG/L	
Cadmium, total	MW-13B	05/24/2017	ND	0.0002	MG/L	
Cadmium, total	MW-13B	08/30/2017	ND	0.0002	MG/L	
Cadmium, total	MW-13B	11/13/2017	ND	0.0002	MG/L	
Cadmium, total	MW-16	09/05/2013	ND	0.0002	MG/L	
Cadmium, total	MW-16	12/16/2013	ND	0.0002	MG/L	
Cadmium, total	MW-16	03/05/2014	ND	0.0002	MG/L	
Cadmium, total	MW-16	06/02/2014	ND	0.0002	MG/L	
Cadmium, total	MW-16	09/22/2014	ND	0.0002	MG/L	
Cadmium, total	MW-16	11/18/2014	ND	0.0002	MG/L	
Cadmium, total	MW-16	02/23/2015	ND	0.0002	MG/L	
Cadmium, total	MW-16	05/20/2015	ND	0.0002	MG/L	
Cadmium, total	MW-16	08/26/2015	ND	0.0002	MG/L	
Cadmium, total	MW-16	11/11/2015	ND	0.0002	MG/L	
Cadmium, total	MW-16	02/24/2016	ND	0.0002	MG/L	
Cadmium, total	MW-16	05/16/2016	ND	0.0002	MG/L	
Cadmium, total	MW-16	08/31/2016	ND	0.0002	MG/L	
Cadmium, total	MW-16	11/14/2016	ND	0.0002	MG/L	
Cadmium, total	MW-16	02/22/2017	ND	0.0002	MG/L	
Cadmium, total	MW-16	05/24/2017	ND	0.0002	MG/L	
Cadmium, total	MW-16	08/30/2017	ND	0.0002	MG/L	
Cadmium, total	MW-16	11/13/2017	ND	0.0002	MG/L	
Cadmium, total	MW-35	09/05/2013	ND	0.0002	MG/L	
Cadmium, total	MW-35	12/16/2013	ND	0.0002	MG/L	
Cadmium, total	MW-35	03/04/2014	ND	0.0002	MG/L	
Cadmium, total	MW-35	06/02/2014	ND	0.0002	MG/L	
Cadmium, total	MW-35	09/22/2014	ND	0.0002	MG/L	
Cadmium, total	MW-35	11/17/2014	ND	0.0002	MG/L	
Cadmium, total	MW-35	02/25/2015	ND	0.0002	MG/L	
Cadmium, total	MW-35	05/19/2015	ND	0.0002	MG/L	
Cadmium, total	MW-35	08/26/2015	ND	0.0002	MG/L	
Cadmium, total	MW-35	11/10/2015	ND	0.0002	MG/L	
Cadmium, total	MW-35	02/22/2016	ND	0.0002	MG/L	
Cadmium, total	MW-35	05/16/2016	ND	0.0002	MG/L	
Cadmium, total	MW-35	08/31/2016	ND	0.0002	MG/L	
Cadmium, total	MW-35	11/15/2016	ND	0.0002	MG/L	
Cadmium, total	MW-35	02/22/2017	ND	0.0002	MG/L	
Cadmium, total	MW-35	05/24/2017	ND	0.0002	MG/L	
Cadmium, total	MW-35	08/30/2017	ND	0.0002	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Cadmium, total	MW-35	11/15/2017	ND	0.0002	MG/L	
Calcium, dissolved	MW-13A	03/22/2005		15.7	MG/L	
Calcium, dissolved	MW-13A	06/15/2005		14.2	MG/L	
Calcium, dissolved	MW-13A	09/27/2005		14.2	MG/L	
Calcium, dissolved	MW-13A	12/15/2005		15.1	MG/L	
Calcium, dissolved	MW-13A	03/28/2006		16	MG/L	
Calcium, dissolved	MW-13A	06/21/2006		16	MG/L	
Calcium, dissolved	MW-13A	09/26/2006		15	MG/L	
Calcium, dissolved	MW-13A	12/13/2006		15	MG/L	
Calcium, dissolved	MW-13A	03/27/2007		15	MG/L	
Calcium, dissolved	MW-13A	06/19/2007		16	MG/L	
Calcium, dissolved	MW-13A	09/19/2007		16	MG/L	
Calcium, dissolved	MW-13A	12/19/2007		15	MG/L	
Calcium, dissolved	MW-13A	03/25/2008		16	MG/L	
Calcium, dissolved	MW-13A	06/18/2008		16	MG/L	
Calcium, dissolved	MW-13A	09/17/2008		15	MG/L	
Calcium, dissolved	MW-13A	12/17/2008		16	MG/L	
Calcium, dissolved	MW-13A	03/24/2009		15	MG/L	
Calcium, dissolved	MW-13A	06/17/2009		17	MG/L	
Calcium, dissolved	MW-13A	09/10/2009		15	MG/L	
Calcium, dissolved	MW-13A	12/03/2009		15	MG/L	
Calcium, dissolved	MW-13A	03/25/2010		16	MG/L	
Calcium, dissolved	MW-13A	06/23/2010		15	MG/L	
Calcium, dissolved	MW-13A	09/23/2010		15	MG/L	
Calcium, dissolved	MW-13A	12/08/2010		16	MG/L	
Calcium, dissolved	MW-13A	03/30/2011		16	MG/L	
Calcium, dissolved	MW-13A	06/06/2011		16	MG/L	
Calcium, dissolved	MW-13A	09/27/2011		16	MG/L	
Calcium, dissolved	MW-13A	12/14/2011		16	MG/L	
Calcium, dissolved	MW-13A	03/21/2012		16	MG/L	
Calcium, dissolved	MW-13A	06/08/2012		15	MG/L	
Calcium, dissolved	MW-13A	09/26/2012		15	MG/L	
Calcium, dissolved	MW-13A	12/03/2012		16	MG/L	
Calcium, dissolved	MW-13A	03/11/2013		16	MG/L	
Calcium, dissolved	MW-13A	06/05/2013		16	MG/L	
Calcium, dissolved	MW-13A	12/03/2013		16	MG/L	
Calcium, dissolved	MW-13A	03/04/2014		16	MG/L	
Calcium, dissolved	MW-13A	06/02/2014		16	MG/L	
Calcium, dissolved	MW-13A	09/22/2014		15	MG/L	
Calcium, dissolved	MW-13A	11/17/2014		15	MG/L	
Calcium, dissolved	MW-13A	02/23/2015		15	MG/L	
Calcium, dissolved	MW-13A	05/19/2015		16	MG/L	
Calcium, dissolved	MW-13A	08/26/2015		15	MG/L	
Calcium, dissolved	MW-13A	11/10/2015		15	MG/L	
Calcium, dissolved	MW-13A	02/22/2016		16	MG/L	
Calcium, dissolved	MW-13A	05/16/2016		15	MG/L	
Calcium, dissolved	MW-13A	08/31/2016		17	MG/L	
Calcium, dissolved	MW-13A	11/14/2016		16	MG/L	
Calcium, dissolved	MW-13A	02/22/2017		17	MG/L	
Calcium, dissolved	MW-13A	05/24/2017		14	MG/L	
Calcium, dissolved	MW-13A	08/30/2017		15	MG/L	
Calcium, dissolved	MW-13A	11/13/2017		15	MG/L	
Calcium, dissolved	MW-13B	03/22/2005		16.9	MG/L	
Calcium, dissolved	MW-13B	06/15/2005		16	MG/L	
Calcium, dissolved	MW-13B	09/27/2005		17.1	MG/L	
Calcium, dissolved	MW-13B	12/15/2005		16.1	MG/L	
Calcium, dissolved	MW-13B	03/29/2006		17	MG/L	
Calcium, dissolved	MW-13B	06/21/2006		17	MG/L	
Calcium, dissolved	MW-13B	09/26/2006		16	MG/L	
Calcium, dissolved	MW-13B	12/13/2006		17	MG/L	
Calcium, dissolved	MW-13B	03/27/2007		16	MG/L	
Calcium, dissolved	MW-13B	06/19/2007		16	MG/L	
Calcium, dissolved	MW-13B	09/18/2007		17	MG/L	
Calcium, dissolved	MW-13B	12/19/2007		15	MG/L	
Calcium, dissolved	MW-13B	03/25/2008		16	MG/L	
Calcium, dissolved	MW-13B	06/18/2008		17	MG/L	
Calcium, dissolved	MW-13B	09/17/2008		16	MG/L	
Calcium, dissolved	MW-13B	12/16/2008		16	MG/L	
Calcium, dissolved	MW-13B	03/24/2009		16	MG/L	
Calcium, dissolved	MW-13B	06/17/2009		17	MG/L	
Calcium, dissolved	MW-13B	09/10/2009		16	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Calcium, dissolved	MW-13B	12/03/2009		16	MG/L	
Calcium, dissolved	MW-13B	03/25/2010		17	MG/L	
Calcium, dissolved	MW-13B	06/23/2010		16	MG/L	
Calcium, dissolved	MW-13B	09/23/2010		16	MG/L	
Calcium, dissolved	MW-13B	12/08/2010		16	MG/L	
Calcium, dissolved	MW-13B	03/30/2011		16	MG/L	
Calcium, dissolved	MW-13B	06/06/2011		16	MG/L	
Calcium, dissolved	MW-13B	09/27/2011		16	MG/L	
Calcium, dissolved	MW-13B	12/14/2011		16	MG/L	
Calcium, dissolved	MW-13B	03/21/2012		16	MG/L	
Calcium, dissolved	MW-13B	06/08/2012		16	MG/L	
Calcium, dissolved	MW-13B	09/26/2012		16	MG/L	
Calcium, dissolved	MW-13B	12/03/2012		17	MG/L	
Calcium, dissolved	MW-13B	03/11/2013		17	MG/L	
Calcium, dissolved	MW-13B	06/05/2013		17	MG/L	
Calcium, dissolved	MW-13B	12/03/2013		17	MG/L	
Calcium, dissolved	MW-13B	03/04/2014		17	MG/L	
Calcium, dissolved	MW-13B	06/02/2014		16	MG/L	
Calcium, dissolved	MW-13B	09/22/2014		15	MG/L	
Calcium, dissolved	MW-13B	11/17/2014		16	MG/L	
Calcium, dissolved	MW-13B	02/23/2015		17	MG/L	
Calcium, dissolved	MW-13B	05/19/2015		17	MG/L	
Calcium, dissolved	MW-13B	08/26/2015		16	MG/L	
Calcium, dissolved	MW-13B	11/10/2015		17	MG/L	
Calcium, dissolved	MW-13B	02/22/2016		18	MG/L	
Calcium, dissolved	MW-13B	05/16/2016		16	MG/L	
Calcium, dissolved	MW-13B	08/31/2016		18	MG/L	
Calcium, dissolved	MW-13B	11/14/2016		17	MG/L	
Calcium, dissolved	MW-13B	02/22/2017		18	MG/L	
Calcium, dissolved	MW-13B	05/24/2017		14	MG/L	
Calcium, dissolved	MW-13B	08/30/2017		17	MG/L	
Calcium, dissolved	MW-13B	11/13/2017		17	MG/L	
Calcium, dissolved	MW-16	03/24/2009		12	MG/L	
Calcium, dissolved	MW-16	06/16/2009		10	MG/L	
Calcium, dissolved	MW-16	09/09/2009		11	MG/L	
Calcium, dissolved	MW-16	12/03/2009		14	MG/L	
Calcium, dissolved	MW-16	03/25/2010		9.6	MG/L	
Calcium, dissolved	MW-16	06/24/2010		12	MG/L	
Calcium, dissolved	MW-16	09/24/2010		13	MG/L	
Calcium, dissolved	MW-16	12/09/2010		13	MG/L	
Calcium, dissolved	MW-16	03/30/2011		9.8	MG/L	
Calcium, dissolved	MW-16	06/07/2011		9.7	MG/L	
Calcium, dissolved	MW-16	09/27/2011		12	MG/L	
Calcium, dissolved	MW-16	12/13/2011		11	MG/L	
Calcium, dissolved	MW-16	03/21/2012		8.9	MG/L	
Calcium, dissolved	MW-16	06/08/2012		9.1	MG/L	
Calcium, dissolved	MW-16	09/27/2012		11	MG/L	
Calcium, dissolved	MW-16	12/04/2012		11	MG/L	
Calcium, dissolved	MW-16	03/12/2013		10	MG/L	
Calcium, dissolved	MW-16	06/04/2013		10	MG/L	
Calcium, dissolved	MW-16	09/05/2013		11	MG/L	
Calcium, dissolved	MW-16	12/16/2013		11	MG/L	
Calcium, dissolved	MW-16	03/05/2014		9.8	MG/L	
Calcium, dissolved	MW-16	06/02/2014		8.8	MG/L	
Calcium, dissolved	MW-16	09/22/2014		9.9	MG/L	
Calcium, dissolved	MW-16	11/18/2014		11	MG/L	
Calcium, dissolved	MW-16	02/23/2015		9.5	MG/L	
Calcium, dissolved	MW-16	05/20/2015		10	MG/L	
Calcium, dissolved	MW-16	08/26/2015		9.8	MG/L	
Calcium, dissolved	MW-16	11/11/2015		12	MG/L	
Calcium, dissolved	MW-16	02/24/2016		7.7	MG/L	
Calcium, dissolved	MW-16	05/16/2016		8.4	MG/L	
Calcium, dissolved	MW-16	08/31/2016		12	MG/L	
Calcium, dissolved	MW-16	11/14/2016		9.6	MG/L	
Calcium, dissolved	MW-16	02/22/2017		8.4	MG/L	
Calcium, dissolved	MW-16	05/24/2017		7.6	MG/L	
Calcium, dissolved	MW-16	08/30/2017		9.2	MG/L	
Calcium, dissolved	MW-16	11/13/2017		8.9	MG/L	
Calcium, dissolved	MW-35	03/22/2005		13.9	MG/L	
Calcium, dissolved	MW-35	06/14/2005		12.9	MG/L	
Calcium, dissolved	MW-35	09/27/2005		14.8	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Calcium, dissolved	MW-35	12/15/2005		13.2	MG/L	
Calcium, dissolved	MW-35	03/28/2006		14	MG/L	
Calcium, dissolved	MW-35	06/21/2006		14	MG/L	
Calcium, dissolved	MW-35	09/26/2006		13	MG/L	
Calcium, dissolved	MW-35	12/12/2006		14	MG/L	
Calcium, dissolved	MW-35	03/27/2007		13	MG/L	
Calcium, dissolved	MW-35	06/20/2007		14	MG/L	
Calcium, dissolved	MW-35	09/18/2007		14	MG/L	
Calcium, dissolved	MW-35	12/20/2007		13	MG/L	
Calcium, dissolved	MW-35	03/25/2008		13	MG/L	
Calcium, dissolved	MW-35	06/18/2008		13	MG/L	
Calcium, dissolved	MW-35	09/18/2008		13	MG/L	
Calcium, dissolved	MW-35	12/19/2008		12	MG/L	
Calcium, dissolved	MW-35	03/24/2009		13	MG/L	
Calcium, dissolved	MW-35	06/16/2009		13	MG/L	
Calcium, dissolved	MW-35	09/10/2009		12	MG/L	
Calcium, dissolved	MW-35	12/03/2009		13	MG/L	
Calcium, dissolved	MW-35	03/25/2010		13	MG/L	
Calcium, dissolved	MW-35	06/23/2010		13	MG/L	
Calcium, dissolved	MW-35	09/23/2010		13	MG/L	
Calcium, dissolved	MW-35	12/09/2010		14	MG/L	
Calcium, dissolved	MW-35	03/30/2011		14	MG/L	
Calcium, dissolved	MW-35	06/06/2011		13	MG/L	
Calcium, dissolved	MW-35	09/26/2011		14	MG/L	
Calcium, dissolved	MW-35	12/13/2011		14	MG/L	
Calcium, dissolved	MW-35	03/21/2012		14	MG/L	
Calcium, dissolved	MW-35	06/06/2012		13	MG/L	
Calcium, dissolved	MW-35	09/26/2012		13	MG/L	
Calcium, dissolved	MW-35	12/04/2012		14	MG/L	
Calcium, dissolved	MW-35	03/13/2013		14	MG/L	
Calcium, dissolved	MW-35	06/06/2013		13	MG/L	
Calcium, dissolved	MW-35	09/05/2013		13	MG/L	
Calcium, dissolved	MW-35	12/16/2013		14	MG/L	
Calcium, dissolved	MW-35	03/04/2014		14	MG/L	
Calcium, dissolved	MW-35	06/02/2014		14	MG/L	
Calcium, dissolved	MW-35	09/22/2014		13	MG/L	
Calcium, dissolved	MW-35	11/17/2014		14	MG/L	
Calcium, dissolved	MW-35	02/25/2015		15	MG/L	
Calcium, dissolved	MW-35	05/19/2015		13	MG/L	
Calcium, dissolved	MW-35	08/26/2015		13	MG/L	
Calcium, dissolved	MW-35	11/10/2015		15	MG/L	
Calcium, dissolved	MW-35	02/22/2016		15	MG/L	
Calcium, dissolved	MW-35	05/16/2016		14	MG/L	
Calcium, dissolved	MW-35	08/31/2016		15	MG/L	
Calcium, dissolved	MW-35	11/15/2016		14	MG/L	
Calcium, dissolved	MW-35	02/22/2017		15	MG/L	
Calcium, dissolved	MW-35	05/24/2017		13	MG/L	
Calcium, dissolved	MW-35	08/30/2017		14	MG/L	
Calcium, dissolved	MW-35	11/15/2017		13	MG/L	
Chloride	MW-13A	03/22/2005		2.6	MG/L	
Chloride	MW-13A	06/15/2005		1.9	MG/L	
Chloride	MW-13A	09/27/2005		2.4	MG/L	
Chloride	MW-13A	12/15/2005		2.1	MG/L	
Chloride	MW-13A	03/28/2006		3	MG/L	
Chloride	MW-13A	06/21/2006		2.4	MG/L	
Chloride	MW-13A	09/26/2006		2.6	MG/L	
Chloride	MW-13A	12/13/2006		3	MG/L	
Chloride	MW-13A	03/27/2007		2.8	MG/L	
Chloride	MW-13A	06/19/2007		2.6	MG/L	
Chloride	MW-13A	09/19/2007		2.6	MG/L	
Chloride	MW-13A	12/19/2007		2.6	MG/L	
Chloride	MW-13A	03/25/2008		2.5	MG/L	
Chloride	MW-13A	06/18/2008		2.6	MG/L	
Chloride	MW-13A	09/17/2008		2.5	MG/L	
Chloride	MW-13A	12/17/2008		3.1	MG/L	
Chloride	MW-13A	03/24/2009		2.7	MG/L	
Chloride	MW-13A	06/17/2009		2.4	MG/L	
Chloride	MW-13A	09/10/2009		2.1	MG/L	
Chloride	MW-13A	12/03/2009		3.4	MG/L	
Chloride	MW-13A	03/25/2010		2.2	MG/L	
Chloride	MW-13A	06/23/2010		2.6	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Chloride	MW-13A	09/23/2010		2.8	MG/L	
Chloride	MW-13A	12/08/2010		2.9	MG/L	
Chloride	MW-13A	03/30/2011		2.9	MG/L	
Chloride	MW-13A	06/06/2011		3	MG/L	
Chloride	MW-13A	09/27/2011		3.8	MG/L	
Chloride	MW-13A	12/14/2011		4.4	MG/L	
Chloride	MW-13A	03/21/2012		2.7	MG/L	
Chloride	MW-13A	06/08/2012		3	MG/L	
Chloride	MW-13A	09/26/2012		2.6	MG/L	
Chloride	MW-13A	12/03/2012		1.8	MG/L	
Chloride	MW-13A	03/11/2013		3	MG/L	
Chloride	MW-13A	06/05/2013		1.7	MG/L	
Chloride	MW-13A	12/03/2013		1.7	MG/L	
Chloride	MW-13A	03/04/2014		1.7	MG/L	
Chloride	MW-13A	06/02/2014		2	MG/L	
Chloride	MW-13A	09/22/2014		1.7	MG/L	
Chloride	MW-13A	11/17/2014		1.9	MG/L	
Chloride	MW-13A	02/23/2015		1.8	MG/L	
Chloride	MW-13A	05/19/2015		1.9	MG/L	
Chloride	MW-13A	08/26/2015		2.1	MG/L	
Chloride	MW-13A	11/10/2015		1.9	MG/L	
Chloride	MW-13A	02/22/2016		1.9	MG/L	
Chloride	MW-13A	05/16/2016		1.9	MG/L	
Chloride	MW-13A	08/31/2016		1.9	MG/L	
Chloride	MW-13A	11/14/2016		1.8	MG/L	
Chloride	MW-13A	02/22/2017		2	MG/L	
Chloride	MW-13A	05/24/2017		1.9	MG/L	
Chloride	MW-13A	08/30/2017		2.4	MG/L	
Chloride	MW-13A	11/13/2017		1.7	MG/L	
Chloride	MW-13B	03/22/2005		3	MG/L	
Chloride	MW-13B	06/15/2005		2.3	MG/L	
Chloride	MW-13B	09/27/2005		2.8	MG/L	
Chloride	MW-13B	12/15/2005		2.4	MG/L	
Chloride	MW-13B	03/29/2006		3.2	MG/L	
Chloride	MW-13B	06/21/2006		2.9	MG/L	
Chloride	MW-13B	09/26/2006		2.7	MG/L	
Chloride	MW-13B	12/13/2006		3.3	MG/L	
Chloride	MW-13B	03/27/2007		3	MG/L	
Chloride	MW-13B	06/19/2007		2.8	MG/L	
Chloride	MW-13B	09/18/2007		2.8	MG/L	
Chloride	MW-13B	12/19/2007		2.8	MG/L	
Chloride	MW-13B	03/25/2008		2.7	MG/L	
Chloride	MW-13B	06/18/2008		2.8	MG/L	
Chloride	MW-13B	09/17/2008		2.7	MG/L	
Chloride	MW-13B	12/16/2008		3.2	MG/L	
Chloride	MW-13B	03/24/2009		2.6	MG/L	
Chloride	MW-13B	06/17/2009		3	MG/L	
Chloride	MW-13B	09/10/2009		2.3	MG/L	
Chloride	MW-13B	12/03/2009		2.9	MG/L	
Chloride	MW-13B	03/25/2010		2.5	MG/L	
Chloride	MW-13B	06/23/2010		2.8	MG/L	
Chloride	MW-13B	09/23/2010		3	MG/L	
Chloride	MW-13B	12/08/2010		2.5	MG/L	
Chloride	MW-13B	03/30/2011		3.1	MG/L	
Chloride	MW-13B	06/06/2011		3.2	MG/L	
Chloride	MW-13B	09/27/2011		3.7	MG/L	
Chloride	MW-13B	12/14/2011		3.4	MG/L	
Chloride	MW-13B	03/21/2012		2.8	MG/L	
Chloride	MW-13B	06/08/2012		3.4	MG/L	
Chloride	MW-13B	09/26/2012		2.9	MG/L	
Chloride	MW-13B	12/03/2012		2.1	MG/L	
Chloride	MW-13B	03/11/2013		2.1	MG/L	
Chloride	MW-13B	06/05/2013		2	MG/L	
Chloride	MW-13B	12/03/2013		1.9	MG/L	
Chloride	MW-13B	03/04/2014		1.9	MG/L	
Chloride	MW-13B	06/02/2014		2.1	MG/L	
Chloride	MW-13B	09/22/2014		1.9	MG/L	
Chloride	MW-13B	11/17/2014		2.1	MG/L	
Chloride	MW-13B	02/23/2015		2	MG/L	
Chloride	MW-13B	05/19/2015		2	MG/L	
Chloride	MW-13B	08/26/2015		2.1	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit



**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Chloride	MW-13B	11/10/2015		2	MG/L	
Chloride	MW-13B	02/22/2016		2	MG/L	
Chloride	MW-13B	05/16/2016		2	MG/L	
Chloride	MW-13B	08/31/2016		2	MG/L	
Chloride	MW-13B	11/14/2016		1.9	MG/L	
Chloride	MW-13B	02/22/2017		2	MG/L	
Chloride	MW-13B	05/24/2017		2	MG/L	
Chloride	MW-13B	08/30/2017		2.2	MG/L	
Chloride	MW-13B	11/13/2017		1.9	MG/L	
Chloride	MW-16	03/24/2009		2.1	MG/L	
Chloride	MW-16	06/16/2009		2.2	MG/L	
Chloride	MW-16	09/09/2009		1.3	MG/L	
Chloride	MW-16	12/03/2009		1.9	MG/L	
Chloride	MW-16	03/25/2010		1.7	MG/L	
Chloride	MW-16	06/24/2010		1.6	MG/L	
Chloride	MW-16	09/24/2010		1.7	MG/L	
Chloride	MW-16	12/09/2010		2.3	MG/L	
Chloride	MW-16	03/30/2011		3.6	MG/L	
Chloride	MW-16	06/07/2011		2.4	MG/L	
Chloride	MW-16	09/27/2011		3.9	MG/L	
Chloride	MW-16	12/13/2011		2.1	MG/L	
Chloride	MW-16	03/21/2012		2.2	MG/L	
Chloride	MW-16	06/08/2012		2.8	MG/L	
Chloride	MW-16	09/27/2012		1	MG/L	
Chloride	MW-16	12/04/2012		1.3	MG/L	
Chloride	MW-16	03/12/2013		1.3	MG/L	
Chloride	MW-16	06/04/2013		1.3	MG/L	
Chloride	MW-16	09/05/2013		1.3	MG/L	
Chloride	MW-16	12/16/2013	ND	1	MG/L	
Chloride	MW-16	03/05/2014		1	MG/L	
Chloride	MW-16	06/02/2014		1.4	MG/L	
Chloride	MW-16	09/22/2014		1.1	MG/L	
Chloride	MW-16	11/18/2014		1.5	MG/L	
Chloride	MW-16	02/23/2015		1.2	MG/L	
Chloride	MW-16	05/20/2015		1.4	MG/L	
Chloride	MW-16	08/26/2015		1.1	MG/L	
Chloride	MW-16	11/11/2015	ND	1	MG/L	
Chloride	MW-16	02/24/2016		1.2	MG/L	
Chloride	MW-16	05/16/2016		1.2	MG/L	
Chloride	MW-16	08/31/2016		1.1	MG/L	
Chloride	MW-16	11/14/2016		1	MG/L	
Chloride	MW-16	02/22/2017		1.3	MG/L	
Chloride	MW-16	05/24/2017		1.2	MG/L	
Chloride	MW-16	08/30/2017	ND	1	MG/L	
Chloride	MW-16	11/13/2017	ND	1	MG/L	
Chloride	MW-35	03/22/2005		2.2	MG/L	
Chloride	MW-35	06/14/2005		2.2	MG/L	
Chloride	MW-35	09/27/2005		2.6	MG/L	
Chloride	MW-35	12/15/2005		1.9	MG/L	
Chloride	MW-35	03/28/2006		2.9	MG/L	
Chloride	MW-35	06/21/2006		2.8	MG/L	
Chloride	MW-35	09/26/2006		2.5	MG/L	
Chloride	MW-35	12/12/2006		3	MG/L	
Chloride	MW-35	03/27/2007		2.8	MG/L	
Chloride	MW-35	06/20/2007		2.6	MG/L	
Chloride	MW-35	09/18/2007		2.4	MG/L	
Chloride	MW-35	12/20/2007		2.3	MG/L	
Chloride	MW-35	03/25/2008		2.4	MG/L	
Chloride	MW-35	06/18/2008		2.6	MG/L	
Chloride	MW-35	09/18/2008		2.4	MG/L	
Chloride	MW-35	12/19/2008		2.9	MG/L	
Chloride	MW-35	03/24/2009		2.3	MG/L	
Chloride	MW-35	06/16/2009		2.4	MG/L	
Chloride	MW-35	09/10/2009		2.5	MG/L	
Chloride	MW-35	12/03/2009		2.8	MG/L	
Chloride	MW-35	03/25/2010		2	MG/L	
Chloride	MW-35	06/23/2010		2.1	MG/L	
Chloride	MW-35	09/23/2010		2.6	MG/L	
Chloride	MW-35	12/09/2010		2.7	MG/L	
Chloride	MW-35	03/30/2011		3.2	MG/L	
Chloride	MW-35	06/06/2011		2.3	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Chloride	MW-35	09/26/2011		3	MG/L	
Chloride	MW-35	12/13/2011		3.2	MG/L	
Chloride	MW-35	03/21/2012		2.9	MG/L	
Chloride	MW-35	06/06/2012		1.3	MG/L	
Chloride	MW-35	09/26/2012		2.4	MG/L	
Chloride	MW-35	12/04/2012		1.9	MG/L	
Chloride	MW-35	03/13/2013		1.8	MG/L	
Chloride	MW-35	06/06/2013		1.7	MG/L	
Chloride	MW-35	09/05/2013		1.8	MG/L	
Chloride	MW-35	12/16/2013		1.7	MG/L	
Chloride	MW-35	03/04/2014		1.8	MG/L	
Chloride	MW-35	06/02/2014		2	MG/L	
Chloride	MW-35	09/22/2014		1.7	MG/L	
Chloride	MW-35	11/17/2014		1.8	MG/L	
Chloride	MW-35	02/25/2015		1.8	MG/L	
Chloride	MW-35	05/19/2015		1.9	MG/L	
Chloride	MW-35	08/26/2015		1.9	MG/L	
Chloride	MW-35	11/10/2015		1.8	MG/L	
Chloride	MW-35	02/22/2016		2.1	MG/L	
Chloride	MW-35	05/16/2016		1.9	MG/L	
Chloride	MW-35	08/31/2016		1.9	MG/L	
Chloride	MW-35	11/15/2016		1.8	MG/L	
Chloride	MW-35	02/22/2017		1.9	MG/L	
Chloride	MW-35	05/24/2017		1.9	MG/L	
Chloride	MW-35	08/30/2017		1.6	MG/L	
Chloride	MW-35	11/15/2017		1.7	MG/L	
Chromium, total	MW-13A	12/03/2013	ND	0.003	MG/L	
Chromium, total	MW-13A	03/04/2014	ND	0.003	MG/L	
Chromium, total	MW-13A	06/02/2014	ND	0.003	MG/L	
Chromium, total	MW-13A	09/22/2014	ND	0.003	MG/L	
Chromium, total	MW-13A	11/17/2014	ND	0.003	MG/L	
Chromium, total	MW-13A	02/23/2015	ND	0.003	MG/L	
Chromium, total	MW-13A	05/19/2015	ND	0.003	MG/L	
Chromium, total	MW-13A	08/26/2015	ND	0.003	MG/L	
Chromium, total	MW-13A	11/10/2015	ND	0.003	MG/L	
Chromium, total	MW-13A	02/22/2016	ND	0.003	MG/L	
Chromium, total	MW-13A	05/16/2016	ND	0.003	MG/L	
Chromium, total	MW-13A	08/31/2016	ND	0.003	MG/L	
Chromium, total	MW-13A	11/14/2016	ND	0.003	MG/L	
Chromium, total	MW-13A	02/22/2017	ND	0.003	MG/L	
Chromium, total	MW-13A	05/24/2017	ND	0.003	MG/L	
Chromium, total	MW-13A	08/30/2017	ND	0.003	MG/L	
Chromium, total	MW-13A	11/13/2017	ND	0.003	MG/L	
Chromium, total	MW-13B	12/03/2013		0.003	MG/L	
Chromium, total	MW-13B	03/04/2014		0.0032	MG/L	
Chromium, total	MW-13B	06/02/2014		0.0033	MG/L	
Chromium, total	MW-13B	09/22/2014	ND	0.003	MG/L	
Chromium, total	MW-13B	11/17/2014		0.0032	MG/L	
Chromium, total	MW-13B	02/23/2015	ND	0.003	MG/L	
Chromium, total	MW-13B	05/19/2015		0.003	MG/L	
Chromium, total	MW-13B	08/26/2015	ND	0.003	MG/L	
Chromium, total	MW-13B	11/10/2015		0.0033	MG/L	
Chromium, total	MW-13B	02/22/2016		0.0033	MG/L	
Chromium, total	MW-13B	05/16/2016		0.0032	MG/L	
Chromium, total	MW-13B	08/31/2016		0.0031	MG/L	
Chromium, total	MW-13B	11/14/2016		0.0036	MG/L	
Chromium, total	MW-13B	02/22/2017		0.0033	MG/L	
Chromium, total	MW-13B	05/24/2017	ND	0.003	MG/L	
Chromium, total	MW-13B	08/30/2017		0.0031	MG/L	
Chromium, total	MW-13B	11/13/2017		0.0034	MG/L	
Chromium, total	MW-16	09/05/2013		0.0063	MG/L	
Chromium, total	MW-16	12/16/2013		0.008	MG/L	
Chromium, total	MW-16	03/05/2014		0.0085	MG/L	
Chromium, total	MW-16	06/02/2014		0.0087	MG/L	
Chromium, total	MW-16	09/22/2014		0.0073	MG/L	
Chromium, total	MW-16	11/18/2014		0.0077	MG/L	
Chromium, total	MW-16	02/23/2015		0.009	MG/L	
Chromium, total	MW-16	05/20/2015		0.007	MG/L	
Chromium, total	MW-16	08/26/2015		0.0064	MG/L	
Chromium, total	MW-16	11/11/2015		0.0071	MG/L	
Chromium, total	MW-16	02/24/2016		0.0077	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Chromium, total	MW-16	05/16/2016		0.0066	MG/L	
Chromium, total	MW-16	08/31/2016		0.0092	MG/L	
Chromium, total	MW-16	11/14/2016		0.0085	MG/L	
Chromium, total	MW-16	02/22/2017		0.0088	MG/L	
Chromium, total	MW-16	05/24/2017		0.0079	MG/L	
Chromium, total	MW-16	08/30/2017		0.0075	MG/L	
Chromium, total	MW-16	11/13/2017		0.0073	MG/L	
Chromium, total	MW-35	09/05/2013	ND	0.003	MG/L	
Chromium, total	MW-35	12/16/2013	ND	0.003	MG/L	
Chromium, total	MW-35	03/04/2014	ND	0.003	MG/L	
Chromium, total	MW-35	06/02/2014	ND	0.003	MG/L	
Chromium, total	MW-35	09/22/2014	ND	0.003	MG/L	
Chromium, total	MW-35	11/17/2014	ND	0.003	MG/L	
Chromium, total	MW-35	02/25/2015	ND	0.003	MG/L	
Chromium, total	MW-35	05/19/2015	ND	0.003	MG/L	
Chromium, total	MW-35	08/26/2015	ND	0.003	MG/L	
Chromium, total	MW-35	11/10/2015	ND	0.003	MG/L	
Chromium, total	MW-35	02/22/2016	ND	0.003	MG/L	
Chromium, total	MW-35	05/16/2016	ND	0.003	MG/L	
Chromium, total	MW-35	08/31/2016	ND	0.003	MG/L	
Chromium, total	MW-35	11/15/2016	ND	0.003	MG/L	
Chromium, total	MW-35	02/22/2017	ND	0.003	MG/L	
Chromium, total	MW-35	05/24/2017	ND	0.003	MG/L	
Chromium, total	MW-35	08/30/2017	ND	0.003	MG/L	
Chromium, total	MW-35	11/15/2017	ND	0.003	MG/L	
Cobalt, total	MW-13A	12/03/2013	ND	0.003	MG/L	
Cobalt, total	MW-13A	03/04/2014	ND	0.003	MG/L	
Cobalt, total	MW-13A	06/02/2014	ND	0.003	MG/L	
Cobalt, total	MW-13A	09/22/2014	ND	0.003	MG/L	
Cobalt, total	MW-13A	11/17/2014	ND	0.003	MG/L	
Cobalt, total	MW-13A	02/23/2015	ND	0.003	MG/L	
Cobalt, total	MW-13A	05/19/2015	ND	0.003	MG/L	
Cobalt, total	MW-13A	08/26/2015	ND	0.003	MG/L	
Cobalt, total	MW-13A	11/10/2015	ND	0.003	MG/L	
Cobalt, total	MW-13A	02/22/2016	ND	0.003	MG/L	
Cobalt, total	MW-13A	05/16/2016	ND	0.003	MG/L	
Cobalt, total	MW-13A	08/31/2016	ND	0.003	MG/L	
Cobalt, total	MW-13A	11/14/2016	ND	0.003	MG/L	
Cobalt, total	MW-13A	02/22/2017	ND	0.003	MG/L	
Cobalt, total	MW-13A	05/24/2017	ND	0.003	MG/L	
Cobalt, total	MW-13A	08/30/2017	ND	0.003	MG/L	
Cobalt, total	MW-13A	11/13/2017	ND	0.003	MG/L	
Cobalt, total	MW-13B	12/03/2013	ND	0.003	MG/L	
Cobalt, total	MW-13B	03/04/2014	ND	0.003	MG/L	
Cobalt, total	MW-13B	06/02/2014	ND	0.003	MG/L	
Cobalt, total	MW-13B	09/22/2014	ND	0.003	MG/L	
Cobalt, total	MW-13B	11/17/2014	ND	0.003	MG/L	
Cobalt, total	MW-13B	02/23/2015	ND	0.003	MG/L	
Cobalt, total	MW-13B	05/19/2015	ND	0.003	MG/L	
Cobalt, total	MW-13B	08/26/2015	ND	0.003	MG/L	
Cobalt, total	MW-13B	11/10/2015	ND	0.003	MG/L	
Cobalt, total	MW-13B	02/22/2016	ND	0.003	MG/L	
Cobalt, total	MW-13B	05/16/2016	ND	0.003	MG/L	
Cobalt, total	MW-13B	08/31/2016	ND	0.003	MG/L	
Cobalt, total	MW-13B	11/14/2016	ND	0.003	MG/L	
Cobalt, total	MW-13B	02/22/2017	ND	0.003	MG/L	
Cobalt, total	MW-13B	05/24/2017	ND	0.003	MG/L	
Cobalt, total	MW-13B	08/30/2017	ND	0.003	MG/L	
Cobalt, total	MW-13B	11/13/2017	ND	0.003	MG/L	
Cobalt, total	MW-16	09/05/2013	ND	0.003	MG/L	
Cobalt, total	MW-16	12/16/2013	ND	0.003	MG/L	
Cobalt, total	MW-16	03/05/2014	ND	0.003	MG/L	
Cobalt, total	MW-16	06/02/2014	ND	0.003	MG/L	
Cobalt, total	MW-16	09/22/2014	ND	0.003	MG/L	
Cobalt, total	MW-16	11/18/2014	ND	0.003	MG/L	
Cobalt, total	MW-16	02/23/2015	ND	0.003	MG/L	
Cobalt, total	MW-16	05/20/2015	ND	0.003	MG/L	
Cobalt, total	MW-16	08/26/2015	ND	0.003	MG/L	
Cobalt, total	MW-16	11/11/2015	ND	0.003	MG/L	
Cobalt, total	MW-16	02/24/2016	ND	0.003	MG/L	
Cobalt, total	MW-16	05/16/2016	ND	0.003	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Cobalt, total	MW-16	08/31/2016	ND	0.003	MG/L	
Cobalt, total	MW-16	11/14/2016	ND	0.003	MG/L	
Cobalt, total	MW-16	02/22/2017	ND	0.003	MG/L	
Cobalt, total	MW-16	05/24/2017	ND	0.003	MG/L	
Cobalt, total	MW-16	08/30/2017	ND	0.003	MG/L	
Cobalt, total	MW-16	11/13/2017	ND	0.003	MG/L	
Cobalt, total	MW-35	09/05/2013	ND	0.003	MG/L	
Cobalt, total	MW-35	12/16/2013	ND	0.003	MG/L	
Cobalt, total	MW-35	03/04/2014	ND	0.003	MG/L	
Cobalt, total	MW-35	06/02/2014	ND	0.003	MG/L	
Cobalt, total	MW-35	09/22/2014	ND	0.003	MG/L	
Cobalt, total	MW-35	11/17/2014	ND	0.003	MG/L	
Cobalt, total	MW-35	02/25/2015	ND	0.003	MG/L	
Cobalt, total	MW-35	05/19/2015	ND	0.003	MG/L	
Cobalt, total	MW-35	08/26/2015	ND	0.003	MG/L	
Cobalt, total	MW-35	11/10/2015	ND	0.003	MG/L	
Cobalt, total	MW-35	02/22/2016	ND	0.003	MG/L	
Cobalt, total	MW-35	05/16/2016	ND	0.003	MG/L	
Cobalt, total	MW-35	08/31/2016	ND	0.003	MG/L	
Cobalt, total	MW-35	11/15/2016	ND	0.003	MG/L	
Cobalt, total	MW-35	02/22/2017	ND	0.003	MG/L	
Cobalt, total	MW-35	05/24/2017	ND	0.003	MG/L	
Cobalt, total	MW-35	08/30/2017	ND	0.003	MG/L	
Cobalt, total	MW-35	11/15/2017	ND	0.003	MG/L	
Copper, total	MW-13A	12/03/2013	ND	0.002	MG/L	
Copper, total	MW-13A	03/04/2014	ND	0.002	MG/L	
Copper, total	MW-13A	06/02/2014	ND	0.002	MG/L	
Copper, total	MW-13A	09/22/2014	ND	0.002	MG/L	
Copper, total	MW-13A	11/17/2014	ND	0.002	MG/L	
Copper, total	MW-13A	02/23/2015	ND	0.002	MG/L	
Copper, total	MW-13A	05/19/2015	ND	0.002	MG/L	
Copper, total	MW-13A	08/26/2015	ND	0.002	MG/L	
Copper, total	MW-13A	11/10/2015	ND	0.002	MG/L	
Copper, total	MW-13A	02/22/2016	ND	0.002	MG/L	
Copper, total	MW-13A	05/16/2016	ND	0.002	MG/L	
Copper, total	MW-13A	08/31/2016	ND	0.002	MG/L	
Copper, total	MW-13A	11/14/2016		0.0021	MG/L	
Copper, total	MW-13A	02/22/2017	ND	0.002	MG/L	
Copper, total	MW-13A	05/24/2017	ND	0.002	MG/L	
Copper, total	MW-13A	08/30/2017	ND	0.002	MG/L	
Copper, total	MW-13A	11/13/2017	ND	0.002	MG/L	
Copper, total	MW-13B	12/03/2013	ND	0.002	MG/L	
Copper, total	MW-13B	03/04/2014	ND	0.002	MG/L	
Copper, total	MW-13B	06/02/2014	ND	0.002	MG/L	
Copper, total	MW-13B	09/22/2014	ND	0.002	MG/L	
Copper, total	MW-13B	11/17/2014	ND	0.002	MG/L	
Copper, total	MW-13B	02/23/2015	ND	0.002	MG/L	
Copper, total	MW-13B	05/19/2015	ND	0.002	MG/L	
Copper, total	MW-13B	08/26/2015	ND	0.002	MG/L	
Copper, total	MW-13B	11/10/2015	ND	0.002	MG/L	
Copper, total	MW-13B	02/22/2016	ND	0.002	MG/L	
Copper, total	MW-13B	05/16/2016	ND	0.002	MG/L	
Copper, total	MW-13B	08/31/2016	ND	0.002	MG/L	
Copper, total	MW-13B	11/14/2016	ND	0.002	MG/L	
Copper, total	MW-13B	02/22/2017	ND	0.002	MG/L	
Copper, total	MW-13B	05/24/2017	ND	0.002	MG/L	
Copper, total	MW-13B	08/30/2017	ND	0.002	MG/L	
Copper, total	MW-13B	11/13/2017	ND	0.002	MG/L	
Copper, total	MW-16	09/05/2013	ND	0.002	MG/L	
Copper, total	MW-16	12/16/2013	ND	0.002	MG/L	
Copper, total	MW-16	03/05/2014	ND	0.002	MG/L	
Copper, total	MW-16	06/02/2014	ND	0.002	MG/L	
Copper, total	MW-16	09/22/2014	ND	0.002	MG/L	
Copper, total	MW-16	11/18/2014	ND	0.002	MG/L	
Copper, total	MW-16	02/23/2015	ND	0.002	MG/L	
Copper, total	MW-16	05/20/2015	ND	0.002	MG/L	
Copper, total	MW-16	08/26/2015	ND	0.002	MG/L	
Copper, total	MW-16	11/11/2015	ND	0.002	MG/L	
Copper, total	MW-16	02/24/2016	ND	0.002	MG/L	
Copper, total	MW-16	05/16/2016	ND	0.002	MG/L	
Copper, total	MW-16	08/31/2016	ND	0.002	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

<b>Constituent</b>	<b>Well</b>	<b>Date</b>	<b>ND</b>	<b>Result</b>	<b>Unit</b>	<b>Outlier</b>
Copper, total	MW-16	11/14/2016	ND	0.002	MG/L	
Copper, total	MW-16	02/22/2017	ND	0.002	MG/L	
Copper, total	MW-16	05/24/2017	ND	0.002	MG/L	
Copper, total	MW-16	08/30/2017	ND	0.002	MG/L	
Copper, total	MW-16	11/13/2017	ND	0.002	MG/L	
Copper, total	MW-35	09/05/2013	ND	0.002	MG/L	
Copper, total	MW-35	12/16/2013	ND	0.002	MG/L	
Copper, total	MW-35	03/04/2014	ND	0.002	MG/L	
Copper, total	MW-35	06/02/2014	ND	0.002	MG/L	
Copper, total	MW-35	09/22/2014	ND	0.002	MG/L	
Copper, total	MW-35	11/17/2014	ND	0.002	MG/L	
Copper, total	MW-35	02/25/2015	ND	0.002	MG/L	
Copper, total	MW-35	05/19/2015	ND	0.002	MG/L	
Copper, total	MW-35	08/26/2015	ND	0.002	MG/L	
Copper, total	MW-35	11/10/2015	ND	0.002	MG/L	
Copper, total	MW-35	02/22/2016	ND	0.002	MG/L	
Copper, total	MW-35	05/16/2016	ND	0.002	MG/L	
Copper, total	MW-35	08/31/2016	ND	0.002	MG/L	
Copper, total	MW-35	11/15/2016	ND	0.002	MG/L	
Copper, total	MW-35	02/22/2017	ND	0.002	MG/L	
Copper, total	MW-35	05/24/2017	ND	0.002	MG/L	
Copper, total	MW-35	08/30/2017	ND	0.002	MG/L	
Copper, total	MW-35	11/15/2017	ND	0.002	MG/L	
Iron, total	MW-13A	12/03/2013	ND	0.06	MG/L	
Iron, total	MW-13A	03/04/2014	ND	0.06	MG/L	
Iron, total	MW-13A	06/02/2014	ND	0.06	MG/L	
Iron, total	MW-13A	09/22/2014	ND	0.06	MG/L	
Iron, total	MW-13A	11/17/2014	ND	0.06	MG/L	
Iron, total	MW-13A	02/23/2015	ND	0.06	MG/L	
Iron, total	MW-13A	05/19/2015	ND	0.06	MG/L	
Iron, total	MW-13A	08/26/2015	ND	0.06	MG/L	
Iron, total	MW-13A	11/10/2015	ND	0.06	MG/L	
Iron, total	MW-13A	02/22/2016	ND	0.06	MG/L	
Iron, total	MW-13A	05/16/2016	ND	0.06	MG/L	
Iron, total	MW-13A	08/31/2016	ND	0.06	MG/L	
Iron, total	MW-13A	11/14/2016		0.073	MG/L	
Iron, total	MW-13A	02/22/2017	ND	0.06	MG/L	
Iron, total	MW-13A	05/24/2017		0.087	MG/L	
Iron, total	MW-13A	08/30/2017	ND	0.06	MG/L	
Iron, total	MW-13A	11/13/2017	ND	0.06	MG/L	
Iron, total	MW-13B	12/03/2013	ND	0.06	MG/L	
Iron, total	MW-13B	03/04/2014	ND	0.06	MG/L	
Iron, total	MW-13B	06/02/2014	ND	0.06	MG/L	
Iron, total	MW-13B	09/22/2014	ND	0.06	MG/L	
Iron, total	MW-13B	11/17/2014	ND	0.06	MG/L	
Iron, total	MW-13B	02/23/2015	ND	0.06	MG/L	
Iron, total	MW-13B	05/19/2015	ND	0.06	MG/L	
Iron, total	MW-13B	08/26/2015	ND	0.06	MG/L	
Iron, total	MW-13B	11/10/2015	ND	0.06	MG/L	
Iron, total	MW-13B	02/22/2016	ND	0.06	MG/L	
Iron, total	MW-13B	05/16/2016	ND	0.06	MG/L	
Iron, total	MW-13B	08/31/2016	ND	0.06	MG/L	
Iron, total	MW-13B	11/14/2016	ND	0.06	MG/L	
Iron, total	MW-13B	02/22/2017	ND	0.06	MG/L	
Iron, total	MW-13B	05/24/2017	ND	0.06	MG/L	
Iron, total	MW-13B	08/30/2017	ND	0.06	MG/L	
Iron, total	MW-13B	11/13/2017	ND	0.06	MG/L	
Iron, total	MW-16	09/05/2013		0.12	MG/L	
Iron, total	MW-16	12/16/2013		0.068	MG/L	
Iron, total	MW-16	03/05/2014		0.2	MG/L	
Iron, total	MW-16	06/02/2014	ND	0.06	MG/L	
Iron, total	MW-16	09/22/2014	ND	0.06	MG/L	
Iron, total	MW-16	11/18/2014		0.18	MG/L	
Iron, total	MW-16	02/23/2015		0.31	MG/L	
Iron, total	MW-16	05/20/2015	ND	0.06	MG/L	
Iron, total	MW-16	08/26/2015	ND	0.06	MG/L	
Iron, total	MW-16	11/11/2015	ND	0.06	MG/L	
Iron, total	MW-16	02/24/2016	ND	0.06	MG/L	
Iron, total	MW-16	05/16/2016	ND	0.06	MG/L	
Iron, total	MW-16	08/31/2016	ND	0.06	MG/L	
Iron, total	MW-16	11/14/2016		0.12	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Iron, total	MW-16	02/22/2017	ND	0.06	MG/L	
Iron, total	MW-16	05/24/2017		0.068	MG/L	
Iron, total	MW-16	08/30/2017	ND	0.06	MG/L	
Iron, total	MW-16	11/13/2017	ND	0.06	MG/L	
Iron, total	MW-35	09/05/2013	ND	0.06	MG/L	
Iron, total	MW-35	12/16/2013	ND	0.06	MG/L	
Iron, total	MW-35	03/04/2014	ND	0.06	MG/L	
Iron, total	MW-35	06/02/2014	ND	0.06	MG/L	
Iron, total	MW-35	09/22/2014	ND	0.06	MG/L	
Iron, total	MW-35	11/17/2014	ND	0.06	MG/L	
Iron, total	MW-35	02/25/2015	ND	0.06	MG/L	
Iron, total	MW-35	05/19/2015	ND	0.06	MG/L	
Iron, total	MW-35	08/26/2015	ND	0.06	MG/L	
Iron, total	MW-35	11/10/2015	ND	0.06	MG/L	
Iron, total	MW-35	02/22/2016	ND	0.06	MG/L	
Iron, total	MW-35	05/16/2016	ND	0.06	MG/L	
Iron, total	MW-35	08/31/2016	ND	0.06	MG/L	
Iron, total	MW-35	11/15/2016	ND	0.06	MG/L	
Iron, total	MW-35	02/22/2017	ND	0.06	MG/L	
Iron, total	MW-35	05/24/2017	ND	0.06	MG/L	
Iron, total	MW-35	08/30/2017	ND	0.06	MG/L	
Iron, total	MW-35	11/15/2017	ND	0.06	MG/L	
Lead, total	MW-13A	12/03/2013	ND	0.001	MG/L	
Lead, total	MW-13A	03/04/2014	ND	0.001	MG/L	
Lead, total	MW-13A	06/02/2014	ND	0.001	MG/L	
Lead, total	MW-13A	09/22/2014	ND	0.001	MG/L	
Lead, total	MW-13A	11/17/2014	ND	0.001	MG/L	
Lead, total	MW-13A	02/23/2015	ND	0.001	MG/L	
Lead, total	MW-13A	05/19/2015	ND	0.001	MG/L	
Lead, total	MW-13A	08/26/2015	ND	0.001	MG/L	
Lead, total	MW-13A	11/10/2015	ND	0.001	MG/L	
Lead, total	MW-13A	02/22/2016	ND	0.001	MG/L	
Lead, total	MW-13A	05/16/2016	ND	0.001	MG/L	
Lead, total	MW-13A	08/31/2016	ND	0.001	MG/L	
Lead, total	MW-13A	11/14/2016	ND	0.001	MG/L	
Lead, total	MW-13A	02/22/2017	ND	0.001	MG/L	
Lead, total	MW-13A	05/24/2017	ND	0.001	MG/L	
Lead, total	MW-13A	08/30/2017	ND	0.001	MG/L	
Lead, total	MW-13A	11/13/2017	ND	0.001	MG/L	
Lead, total	MW-13B	12/03/2013	ND	0.001	MG/L	
Lead, total	MW-13B	03/04/2014	ND	0.001	MG/L	
Lead, total	MW-13B	06/02/2014	ND	0.001	MG/L	
Lead, total	MW-13B	09/22/2014	ND	0.001	MG/L	
Lead, total	MW-13B	11/17/2014	ND	0.001	MG/L	
Lead, total	MW-13B	02/23/2015	ND	0.001	MG/L	
Lead, total	MW-13B	05/19/2015	ND	0.001	MG/L	
Lead, total	MW-13B	08/26/2015	ND	0.001	MG/L	
Lead, total	MW-13B	11/10/2015	ND	0.001	MG/L	
Lead, total	MW-13B	02/22/2016	ND	0.001	MG/L	
Lead, total	MW-13B	05/16/2016	ND	0.001	MG/L	
Lead, total	MW-13B	08/31/2016	ND	0.001	MG/L	
Lead, total	MW-13B	11/14/2016	ND	0.001	MG/L	
Lead, total	MW-13B	02/22/2017	ND	0.001	MG/L	
Lead, total	MW-13B	05/24/2017	ND	0.001	MG/L	
Lead, total	MW-13B	08/30/2017	ND	0.001	MG/L	
Lead, total	MW-13B	11/13/2017	ND	0.001	MG/L	
Lead, total	MW-16	09/05/2013	ND	0.001	MG/L	
Lead, total	MW-16	12/16/2013	ND	0.001	MG/L	
Lead, total	MW-16	03/05/2014	ND	0.001	MG/L	
Lead, total	MW-16	06/02/2014	ND	0.001	MG/L	
Lead, total	MW-16	09/22/2014		0.0014	MG/L	
Lead, total	MW-16	11/18/2014	ND	0.001	MG/L	
Lead, total	MW-16	02/23/2015	ND	0.001	MG/L	
Lead, total	MW-16	05/20/2015	ND	0.001	MG/L	
Lead, total	MW-16	08/26/2015	ND	0.001	MG/L	
Lead, total	MW-16	11/11/2015	ND	0.001	MG/L	
Lead, total	MW-16	02/24/2016	ND	0.001	MG/L	
Lead, total	MW-16	05/16/2016	ND	0.001	MG/L	
Lead, total	MW-16	08/31/2016	ND	0.001	MG/L	
Lead, total	MW-16	11/14/2016	ND	0.001	MG/L	
Lead, total	MW-16	02/22/2017	ND	0.001	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Lead, total	MW-16	05/24/2017	ND	0.001	MG/L	
Lead, total	MW-16	08/30/2017	ND	0.001	MG/L	
Lead, total	MW-16	11/13/2017	ND	0.001	MG/L	
Lead, total	MW-35	09/05/2013	ND	0.001	MG/L	
Lead, total	MW-35	12/16/2013	ND	0.001	MG/L	
Lead, total	MW-35	03/04/2014	ND	0.001	MG/L	
Lead, total	MW-35	06/02/2014	ND	0.001	MG/L	
Lead, total	MW-35	09/22/2014	ND	0.001	MG/L	
Lead, total	MW-35	11/17/2014	ND	0.001	MG/L	
Lead, total	MW-35	02/25/2015	ND	0.001	MG/L	
Lead, total	MW-35	05/19/2015	ND	0.001	MG/L	
Lead, total	MW-35	08/26/2015	ND	0.001	MG/L	
Lead, total	MW-35	11/10/2015	ND	0.001	MG/L	
Lead, total	MW-35	02/22/2016	ND	0.001	MG/L	
Lead, total	MW-35	05/16/2016	ND	0.001	MG/L	
Lead, total	MW-35	08/31/2016	ND	0.001	MG/L	
Lead, total	MW-35	11/15/2016	ND	0.001	MG/L	
Lead, total	MW-35	02/22/2017	ND	0.001	MG/L	
Lead, total	MW-35	05/24/2017	ND	0.001	MG/L	
Lead, total	MW-35	08/30/2017	ND	0.001	MG/L	
Lead, total	MW-35	11/15/2017	ND	0.001	MG/L	
Magnesium, dissolved	MW-13A	03/22/2005		9.2	MG/L	
Magnesium, dissolved	MW-13A	06/15/2005		8.2	MG/L	
Magnesium, dissolved	MW-13A	09/27/2005		8.4	MG/L	
Magnesium, dissolved	MW-13A	12/15/2005		8.6	MG/L	
Magnesium, dissolved	MW-13A	03/28/2006		9.2	MG/L	
Magnesium, dissolved	MW-13A	06/21/2006		9.1	MG/L	
Magnesium, dissolved	MW-13A	09/26/2006		9.2	MG/L	
Magnesium, dissolved	MW-13A	12/13/2006		9.3	MG/L	
Magnesium, dissolved	MW-13A	03/27/2007		9.3	MG/L	
Magnesium, dissolved	MW-13A	06/19/2007		9	MG/L	
Magnesium, dissolved	MW-13A	09/19/2007		9.4	MG/L	
Magnesium, dissolved	MW-13A	12/19/2007		8.6	MG/L	
Magnesium, dissolved	MW-13A	03/25/2008		9.1	MG/L	
Magnesium, dissolved	MW-13A	06/18/2008		9.3	MG/L	
Magnesium, dissolved	MW-13A	09/17/2008		9.2	MG/L	
Magnesium, dissolved	MW-13A	12/17/2008		9.3	MG/L	
Magnesium, dissolved	MW-13A	03/24/2009		9.6	MG/L	
Magnesium, dissolved	MW-13A	06/17/2009		9.6	MG/L	
Magnesium, dissolved	MW-13A	09/10/2009		9.3	MG/L	
Magnesium, dissolved	MW-13A	12/03/2009		9.1	MG/L	
Magnesium, dissolved	MW-13A	03/25/2010		8.7	MG/L	
Magnesium, dissolved	MW-13A	06/23/2010		9.7	MG/L	
Magnesium, dissolved	MW-13A	09/23/2010		9.4	MG/L	
Magnesium, dissolved	MW-13A	12/08/2010		8.1	MG/L	
Magnesium, dissolved	MW-13A	03/30/2011		9.6	MG/L	
Magnesium, dissolved	MW-13A	06/06/2011		10	MG/L	
Magnesium, dissolved	MW-13A	09/27/2011		9.7	MG/L	
Magnesium, dissolved	MW-13A	12/14/2011		9.3	MG/L	
Magnesium, dissolved	MW-13A	03/21/2012		9.9	MG/L	
Magnesium, dissolved	MW-13A	06/08/2012		8.9	MG/L	
Magnesium, dissolved	MW-13A	09/26/2012		9.6	MG/L	
Magnesium, dissolved	MW-13A	12/03/2012		9.2	MG/L	
Magnesium, dissolved	MW-13A	03/11/2013		9.4	MG/L	
Magnesium, dissolved	MW-13A	06/05/2013		9.8	MG/L	
Magnesium, dissolved	MW-13A	12/03/2013		9.4	MG/L	
Magnesium, dissolved	MW-13A	03/04/2014		9.8	MG/L	
Magnesium, dissolved	MW-13A	06/02/2014		9.2	MG/L	
Magnesium, dissolved	MW-13A	09/22/2014		8.7	MG/L	
Magnesium, dissolved	MW-13A	11/17/2014		9.3	MG/L	
Magnesium, dissolved	MW-13A	02/23/2015		9.2	MG/L	
Magnesium, dissolved	MW-13A	05/19/2015		9.5	MG/L	
Magnesium, dissolved	MW-13A	08/26/2015		9.3	MG/L	
Magnesium, dissolved	MW-13A	11/10/2015		9.1	MG/L	
Magnesium, dissolved	MW-13A	02/22/2016		9.7	MG/L	
Magnesium, dissolved	MW-13A	05/16/2016		9.5	MG/L	
Magnesium, dissolved	MW-13A	08/31/2016		8.6	MG/L	
Magnesium, dissolved	MW-13A	11/14/2016		10	MG/L	
Magnesium, dissolved	MW-13A	02/22/2017		10	MG/L	
Magnesium, dissolved	MW-13A	05/24/2017		8.9	MG/L	
Magnesium, dissolved	MW-13A	08/30/2017		8.8	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Magnesium, dissolved	MW-13A	11/13/2017		8.6	MG/L	
Magnesium, dissolved	MW-13B	03/22/2005		8.6	MG/L	
Magnesium, dissolved	MW-13B	06/15/2005		8	MG/L	
Magnesium, dissolved	MW-13B	09/27/2005		8.7	MG/L	
Magnesium, dissolved	MW-13B	12/15/2005		8	MG/L	
Magnesium, dissolved	MW-13B	03/29/2006		8.1	MG/L	
Magnesium, dissolved	MW-13B	06/21/2006		8.3	MG/L	
Magnesium, dissolved	MW-13B	09/26/2006		8.5	MG/L	
Magnesium, dissolved	MW-13B	12/13/2006		8.7	MG/L	
Magnesium, dissolved	MW-13B	03/27/2007		8.4	MG/L	
Magnesium, dissolved	MW-13B	06/19/2007		7.9	MG/L	
Magnesium, dissolved	MW-13B	09/18/2007		8.7	MG/L	
Magnesium, dissolved	MW-13B	12/19/2007		7.6	MG/L	
Magnesium, dissolved	MW-13B	03/25/2008		8	MG/L	
Magnesium, dissolved	MW-13B	06/18/2008		8.2	MG/L	
Magnesium, dissolved	MW-13B	09/17/2008		8.3	MG/L	
Magnesium, dissolved	MW-13B	12/16/2008		8.3	MG/L	
Magnesium, dissolved	MW-13B	03/24/2009		8.5	MG/L	
Magnesium, dissolved	MW-13B	06/17/2009		8.5	MG/L	
Magnesium, dissolved	MW-13B	09/10/2009		8.3	MG/L	
Magnesium, dissolved	MW-13B	12/03/2009		8	MG/L	
Magnesium, dissolved	MW-13B	03/25/2010		8.1	MG/L	
Magnesium, dissolved	MW-13B	06/23/2010		8.7	MG/L	
Magnesium, dissolved	MW-13B	09/23/2010		8.3	MG/L	
Magnesium, dissolved	MW-13B	12/08/2010		9.3	MG/L	
Magnesium, dissolved	MW-13B	03/30/2011		8.2	MG/L	
Magnesium, dissolved	MW-13B	06/06/2011		9	MG/L	
Magnesium, dissolved	MW-13B	09/27/2011		8.4	MG/L	
Magnesium, dissolved	MW-13B	12/14/2011		8.1	MG/L	
Magnesium, dissolved	MW-13B	03/21/2012		8.5	MG/L	
Magnesium, dissolved	MW-13B	06/08/2012		8.1	MG/L	
Magnesium, dissolved	MW-13B	09/26/2012		8.6	MG/L	
Magnesium, dissolved	MW-13B	12/03/2012		8.2	MG/L	
Magnesium, dissolved	MW-13B	03/11/2013		8.6	MG/L	
Magnesium, dissolved	MW-13B	06/05/2013		8.9	MG/L	
Magnesium, dissolved	MW-13B	12/03/2013		8.9	MG/L	
Magnesium, dissolved	MW-13B	03/04/2014		8.7	MG/L	
Magnesium, dissolved	MW-13B	06/02/2014		8.3	MG/L	
Magnesium, dissolved	MW-13B	09/22/2014		7.7	MG/L	
Magnesium, dissolved	MW-13B	11/17/2014		8.7	MG/L	
Magnesium, dissolved	MW-13B	02/23/2015		8.6	MG/L	
Magnesium, dissolved	MW-13B	05/19/2015		8.9	MG/L	
Magnesium, dissolved	MW-13B	08/26/2015		8.8	MG/L	
Magnesium, dissolved	MW-13B	11/10/2015		8.6	MG/L	
Magnesium, dissolved	MW-13B	02/22/2016		9.1	MG/L	
Magnesium, dissolved	MW-13B	05/16/2016		8.6	MG/L	
Magnesium, dissolved	MW-13B	08/31/2016		8.1	MG/L	
Magnesium, dissolved	MW-13B	11/14/2016		9.3	MG/L	
Magnesium, dissolved	MW-13B	02/22/2017		9.3	MG/L	
Magnesium, dissolved	MW-13B	05/24/2017		8.6	MG/L	
Magnesium, dissolved	MW-13B	08/30/2017		8.5	MG/L	
Magnesium, dissolved	MW-13B	11/13/2017		8.3	MG/L	
Magnesium, dissolved	MW-16	03/24/2009		7.2	MG/L	
Magnesium, dissolved	MW-16	06/16/2009		5.9	MG/L	
Magnesium, dissolved	MW-16	09/09/2009		6.9	MG/L	
Magnesium, dissolved	MW-16	12/03/2009		8	MG/L	
Magnesium, dissolved	MW-16	03/25/2010		5.1	MG/L	
Magnesium, dissolved	MW-16	06/24/2010		6.9	MG/L	
Magnesium, dissolved	MW-16	09/24/2010		7.4	MG/L	
Magnesium, dissolved	MW-16	12/09/2010		8.3	MG/L	
Magnesium, dissolved	MW-16	03/30/2011		5.8	MG/L	
Magnesium, dissolved	MW-16	06/07/2011		5.6	MG/L	
Magnesium, dissolved	MW-16	09/27/2011		6.6	MG/L	
Magnesium, dissolved	MW-16	12/13/2011		6.2	MG/L	
Magnesium, dissolved	MW-16	03/21/2012		5.5	MG/L	
Magnesium, dissolved	MW-16	06/08/2012		5	MG/L	
Magnesium, dissolved	MW-16	09/27/2012		6.4	MG/L	
Magnesium, dissolved	MW-16	12/04/2012		6.6	MG/L	
Magnesium, dissolved	MW-16	03/12/2013		5.6	MG/L	
Magnesium, dissolved	MW-16	06/04/2013		5.8	MG/L	
Magnesium, dissolved	MW-16	09/05/2013		6	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit



**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Magnesium, dissolved	MW-16	12/16/2013		5.9	MG/L	
Magnesium, dissolved	MW-16	03/05/2014		6.6	MG/L	
Magnesium, dissolved	MW-16	06/02/2014		5	MG/L	
Magnesium, dissolved	MW-16	09/22/2014		5.5	MG/L	
Magnesium, dissolved	MW-16	11/18/2014		6.4	MG/L	
Magnesium, dissolved	MW-16	02/23/2015		5.7	MG/L	
Magnesium, dissolved	MW-16	05/20/2015		5.7	MG/L	
Magnesium, dissolved	MW-16	08/26/2015		5.9	MG/L	
Magnesium, dissolved	MW-16	11/11/2015		6.7	MG/L	
Magnesium, dissolved	MW-16	02/24/2016		4.5	MG/L	
Magnesium, dissolved	MW-16	05/16/2016		5	MG/L	
Magnesium, dissolved	MW-16	08/31/2016		5.4	MG/L	
Magnesium, dissolved	MW-16	11/14/2016		5.9	MG/L	
Magnesium, dissolved	MW-16	02/22/2017		5	MG/L	
Magnesium, dissolved	MW-16	05/24/2017		4.2	MG/L	
Magnesium, dissolved	MW-16	08/30/2017		4.9	MG/L	
Magnesium, dissolved	MW-16	11/13/2017		4.8	MG/L	
Magnesium, dissolved	MW-35	03/22/2005		8.6	MG/L	
Magnesium, dissolved	MW-35	06/14/2005		8.1	MG/L	
Magnesium, dissolved	MW-35	09/27/2005		9.2	MG/L	
Magnesium, dissolved	MW-35	12/15/2005		8	MG/L	
Magnesium, dissolved	MW-35	03/28/2006		8.3	MG/L	
Magnesium, dissolved	MW-35	06/21/2006		8.4	MG/L	
Magnesium, dissolved	MW-35	09/26/2006		8.2	MG/L	
Magnesium, dissolved	MW-35	12/12/2006		8.8	MG/L	
Magnesium, dissolved	MW-35	03/27/2007		8.6	MG/L	
Magnesium, dissolved	MW-35	06/20/2007		8.4	MG/L	
Magnesium, dissolved	MW-35	09/18/2007		9.1	MG/L	
Magnesium, dissolved	MW-35	12/20/2007		8.1	MG/L	
Magnesium, dissolved	MW-35	03/25/2008		8.2	MG/L	
Magnesium, dissolved	MW-35	06/18/2008		8.1	MG/L	
Magnesium, dissolved	MW-35	09/18/2008		8.1	MG/L	
Magnesium, dissolved	MW-35	12/19/2008		8.1	MG/L	
Magnesium, dissolved	MW-35	03/24/2009		8.7	MG/L	
Magnesium, dissolved	MW-35	06/16/2009		8.1	MG/L	
Magnesium, dissolved	MW-35	09/10/2009		8.1	MG/L	
Magnesium, dissolved	MW-35	12/03/2009		8.3	MG/L	
Magnesium, dissolved	MW-35	03/25/2010		7.9	MG/L	
Magnesium, dissolved	MW-35	06/23/2010		8.8	MG/L	
Magnesium, dissolved	MW-35	09/23/2010		8.7	MG/L	
Magnesium, dissolved	MW-35	12/09/2010		9.3	MG/L	
Magnesium, dissolved	MW-35	03/30/2011		8.8	MG/L	
Magnesium, dissolved	MW-35	06/06/2011		9	MG/L	
Magnesium, dissolved	MW-35	09/26/2011		8.7	MG/L	
Magnesium, dissolved	MW-35	12/13/2011		8.8	MG/L	
Magnesium, dissolved	MW-35	03/21/2012		9	MG/L	
Magnesium, dissolved	MW-35	06/06/2012		8.3	MG/L	
Magnesium, dissolved	MW-35	09/26/2012		8.9	MG/L	
Magnesium, dissolved	MW-35	12/04/2012		8.6	MG/L	
Magnesium, dissolved	MW-35	03/13/2013		9.2	MG/L	
Magnesium, dissolved	MW-35	06/06/2013		8.5	MG/L	
Magnesium, dissolved	MW-35	09/05/2013		8.1	MG/L	
Magnesium, dissolved	MW-35	12/16/2013		8.4	MG/L	
Magnesium, dissolved	MW-35	03/04/2014		9.2	MG/L	
Magnesium, dissolved	MW-35	06/02/2014		8.6	MG/L	
Magnesium, dissolved	MW-35	09/22/2014		8.2	MG/L	
Magnesium, dissolved	MW-35	11/17/2014		8.7	MG/L	
Magnesium, dissolved	MW-35	02/25/2015		9.3	MG/L	
Magnesium, dissolved	MW-35	05/19/2015		8.5	MG/L	
Magnesium, dissolved	MW-35	08/26/2015		9	MG/L	
Magnesium, dissolved	MW-35	11/10/2015		9.3	MG/L	
Magnesium, dissolved	MW-35	02/22/2016		9.3	MG/L	
Magnesium, dissolved	MW-35	05/16/2016		9	MG/L	
Magnesium, dissolved	MW-35	08/31/2016		8.1	MG/L	
Magnesium, dissolved	MW-35	11/15/2016		10	MG/L	
Magnesium, dissolved	MW-35	02/22/2017		9.9	MG/L	
Magnesium, dissolved	MW-35	05/24/2017		8.6	MG/L	
Magnesium, dissolved	MW-35	08/30/2017		8.9	MG/L	
Magnesium, dissolved	MW-35	11/15/2017		8.5	MG/L	
Manganese, total	MW-13A	12/03/2013	ND	0.001	MG/L	
Manganese, total	MW-13A	03/04/2014	ND	0.001	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Manganese, total	MW-13A	06/02/2014	ND	0.001	MG/L	
Manganese, total	MW-13A	09/22/2014	ND	0.001	MG/L	
Manganese, total	MW-13A	11/17/2014	ND	0.001	MG/L	
Manganese, total	MW-13A	02/23/2015	ND	0.001	MG/L	
Manganese, total	MW-13A	05/19/2015	ND	0.001	MG/L	
Manganese, total	MW-13A	08/26/2015	ND	0.001	MG/L	
Manganese, total	MW-13A	11/10/2015	ND	0.001	MG/L	
Manganese, total	MW-13A	02/22/2016	ND	0.001	MG/L	
Manganese, total	MW-13A	05/16/2016	ND	0.001	MG/L	
Manganese, total	MW-13A	08/31/2016	ND	0.001	MG/L	
Manganese, total	MW-13A	11/14/2016	ND	0.001	MG/L	
Manganese, total	MW-13A	02/22/2017	ND	0.001	MG/L	
Manganese, total	MW-13A	05/24/2017	ND	0.001	MG/L	
Manganese, total	MW-13A	08/30/2017	ND	0.001	MG/L	
Manganese, total	MW-13A	11/13/2017	ND	0.001	MG/L	
Manganese, total	MW-13B	12/03/2013	ND	0.001	MG/L	
Manganese, total	MW-13B	03/04/2014	ND	0.001	MG/L	
Manganese, total	MW-13B	06/02/2014		0.002	MG/L	
Manganese, total	MW-13B	09/22/2014	ND	0.001	MG/L	
Manganese, total	MW-13B	11/17/2014	ND	0.001	MG/L	
Manganese, total	MW-13B	02/23/2015	ND	0.001	MG/L	
Manganese, total	MW-13B	05/19/2015	ND	0.001	MG/L	
Manganese, total	MW-13B	08/26/2015	ND	0.001	MG/L	
Manganese, total	MW-13B	11/10/2015	ND	0.001	MG/L	
Manganese, total	MW-13B	02/22/2016	ND	0.001	MG/L	
Manganese, total	MW-13B	05/16/2016	ND	0.001	MG/L	
Manganese, total	MW-13B	08/31/2016	ND	0.001	MG/L	
Manganese, total	MW-13B	11/14/2016	ND	0.001	MG/L	
Manganese, total	MW-13B	02/22/2017	ND	0.001	MG/L	
Manganese, total	MW-13B	05/24/2017	ND	0.001	MG/L	
Manganese, total	MW-13B	08/30/2017	ND	0.001	MG/L	
Manganese, total	MW-13B	11/13/2017	ND	0.001	MG/L	
Manganese, total	MW-16	09/05/2013		0.016	MG/L	
Manganese, total	MW-16	12/16/2013		0.013	MG/L	
Manganese, total	MW-16	03/05/2014		0.02	MG/L	
Manganese, total	MW-16	06/02/2014		0.0049	MG/L	
Manganese, total	MW-16	09/22/2014		0.014	MG/L	
Manganese, total	MW-16	11/18/2014		0.032	MG/L	
Manganese, total	MW-16	02/23/2015		0.062	MG/L	*
Manganese, total	MW-16	05/20/2015		0.0035	MG/L	
Manganese, total	MW-16	08/26/2015		0.0012	MG/L	
Manganese, total	MW-16	11/11/2015		0.0014	MG/L	
Manganese, total	MW-16	02/24/2016		0.0019	MG/L	
Manganese, total	MW-16	05/16/2016	ND	0.001	MG/L	
Manganese, total	MW-16	08/31/2016		0.0024	MG/L	
Manganese, total	MW-16	11/14/2016		0.017	MG/L	
Manganese, total	MW-16	02/22/2017		0.0045	MG/L	
Manganese, total	MW-16	05/24/2017		0.01	MG/L	
Manganese, total	MW-16	08/30/2017		0.0016	MG/L	
Manganese, total	MW-16	11/13/2017		0.0011	MG/L	
Manganese, total	MW-35	09/05/2013	ND	0.001	MG/L	
Manganese, total	MW-35	12/16/2013	ND	0.001	MG/L	
Manganese, total	MW-35	03/04/2014	ND	0.001	MG/L	
Manganese, total	MW-35	06/02/2014	ND	0.001	MG/L	
Manganese, total	MW-35	09/22/2014	ND	0.001	MG/L	
Manganese, total	MW-35	11/17/2014	ND	0.001	MG/L	
Manganese, total	MW-35	02/25/2015	ND	0.001	MG/L	
Manganese, total	MW-35	05/19/2015		0.0014	MG/L	
Manganese, total	MW-35	08/26/2015	ND	0.001	MG/L	
Manganese, total	MW-35	11/10/2015	ND	0.001	MG/L	
Manganese, total	MW-35	02/22/2016	ND	0.001	MG/L	
Manganese, total	MW-35	05/16/2016	ND	0.001	MG/L	
Manganese, total	MW-35	08/31/2016	ND	0.001	MG/L	
Manganese, total	MW-35	11/15/2016	ND	0.001	MG/L	
Manganese, total	MW-35	02/22/2017	ND	0.001	MG/L	
Manganese, total	MW-35	05/24/2017	ND	0.001	MG/L	
Manganese, total	MW-35	08/30/2017	ND	0.001	MG/L	
Manganese, total	MW-35	11/15/2017	ND	0.001	MG/L	
Nickel, total	MW-13A	12/03/2013	ND	0.004	MG/L	
Nickel, total	MW-13A	03/04/2014	ND	0.004	MG/L	
Nickel, total	MW-13A	06/02/2014	ND	0.004	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

<b>Constituent</b>	<b>Well</b>	<b>Date</b>	<b>ND</b>	<b>Result</b>	<b>Unit</b>	<b>Outlier</b>
Nickel, total	MW-13A	09/22/2014	ND	0.004	MG/L	
Nickel, total	MW-13A	11/17/2014	ND	0.004	MG/L	
Nickel, total	MW-13A	02/23/2015	ND	0.004	MG/L	
Nickel, total	MW-13A	05/19/2015	ND	0.004	MG/L	
Nickel, total	MW-13A	08/26/2015	ND	0.004	MG/L	
Nickel, total	MW-13A	11/10/2015	ND	0.004	MG/L	
Nickel, total	MW-13A	02/22/2016	ND	0.004	MG/L	
Nickel, total	MW-13A	05/16/2016	ND	0.004	MG/L	
Nickel, total	MW-13A	08/31/2016	ND	0.004	MG/L	
Nickel, total	MW-13A	11/14/2016	ND	0.004	MG/L	
Nickel, total	MW-13A	02/22/2017	ND	0.004	MG/L	
Nickel, total	MW-13A	05/24/2017	ND	0.004	MG/L	
Nickel, total	MW-13A	08/30/2017	ND	0.004	MG/L	
Nickel, total	MW-13A	11/13/2017	ND	0.004	MG/L	
Nickel, total	MW-13B	12/03/2013	ND	0.004	MG/L	
Nickel, total	MW-13B	03/04/2014	ND	0.004	MG/L	
Nickel, total	MW-13B	06/02/2014	ND	0.004	MG/L	
Nickel, total	MW-13B	09/22/2014	ND	0.004	MG/L	
Nickel, total	MW-13B	11/17/2014	ND	0.004	MG/L	
Nickel, total	MW-13B	02/23/2015	ND	0.004	MG/L	
Nickel, total	MW-13B	05/19/2015	ND	0.004	MG/L	
Nickel, total	MW-13B	08/26/2015	ND	0.004	MG/L	
Nickel, total	MW-13B	11/10/2015	ND	0.004	MG/L	
Nickel, total	MW-13B	02/22/2016	ND	0.004	MG/L	
Nickel, total	MW-13B	05/16/2016	ND	0.004	MG/L	
Nickel, total	MW-13B	08/31/2016	ND	0.004	MG/L	
Nickel, total	MW-13B	11/14/2016	ND	0.004	MG/L	
Nickel, total	MW-13B	02/22/2017	ND	0.004	MG/L	
Nickel, total	MW-13B	05/24/2017	ND	0.004	MG/L	
Nickel, total	MW-13B	08/30/2017	ND	0.004	MG/L	
Nickel, total	MW-13B	11/13/2017	ND	0.004	MG/L	
Nickel, total	MW-16	09/05/2013	ND	0.004	MG/L	
Nickel, total	MW-16	12/16/2013	ND	0.004	MG/L	
Nickel, total	MW-16	03/05/2014	ND	0.004	MG/L	
Nickel, total	MW-16	06/02/2014	ND	0.004	MG/L	
Nickel, total	MW-16	09/22/2014	ND	0.004	MG/L	
Nickel, total	MW-16	11/18/2014	ND	0.004	MG/L	
Nickel, total	MW-16	02/23/2015		0.0041	MG/L	
Nickel, total	MW-16	05/20/2015	ND	0.004	MG/L	
Nickel, total	MW-16	08/26/2015	ND	0.004	MG/L	
Nickel, total	MW-16	11/11/2015	ND	0.004	MG/L	
Nickel, total	MW-16	02/24/2016	ND	0.004	MG/L	
Nickel, total	MW-16	05/16/2016	ND	0.004	MG/L	
Nickel, total	MW-16	08/31/2016	ND	0.004	MG/L	
Nickel, total	MW-16	11/14/2016	ND	0.004	MG/L	
Nickel, total	MW-16	02/22/2017	ND	0.004	MG/L	
Nickel, total	MW-16	05/24/2017	ND	0.004	MG/L	
Nickel, total	MW-16	08/30/2017	ND	0.004	MG/L	
Nickel, total	MW-16	11/13/2017	ND	0.004	MG/L	
Nickel, total	MW-35	09/05/2013	ND	0.004	MG/L	
Nickel, total	MW-35	12/16/2013	ND	0.004	MG/L	
Nickel, total	MW-35	03/04/2014	ND	0.004	MG/L	
Nickel, total	MW-35	06/02/2014	ND	0.004	MG/L	
Nickel, total	MW-35	09/22/2014	ND	0.004	MG/L	
Nickel, total	MW-35	11/17/2014	ND	0.004	MG/L	
Nickel, total	MW-35	02/25/2015	ND	0.004	MG/L	
Nickel, total	MW-35	05/19/2015	ND	0.004	MG/L	
Nickel, total	MW-35	08/26/2015	ND	0.004	MG/L	
Nickel, total	MW-35	11/10/2015	ND	0.004	MG/L	
Nickel, total	MW-35	02/22/2016	ND	0.004	MG/L	
Nickel, total	MW-35	05/16/2016	ND	0.004	MG/L	
Nickel, total	MW-35	08/31/2016	ND	0.004	MG/L	
Nickel, total	MW-35	11/15/2016	ND	0.004	MG/L	
Nickel, total	MW-35	02/22/2017	ND	0.004	MG/L	
Nickel, total	MW-35	05/24/2017	ND	0.004	MG/L	
Nickel, total	MW-35	08/30/2017	ND	0.004	MG/L	
Nickel, total	MW-35	11/15/2017	ND	0.004	MG/L	
Nitrate (as n)	MW-13A	03/22/2005		0.51	MG/L	
Nitrate (as n)	MW-13A	06/15/2005		0.44	MG/L	
Nitrate (as n)	MW-13A	09/27/2005		1.8	MG/L	
Nitrate (as n)	MW-13A	12/15/2005		0.47	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3**  
**Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Nitrate (as n)	MW-13A	03/28/2006		0.44	MG/L	
Nitrate (as n)	MW-13A	06/21/2006		0.54	MG/L	
Nitrate (as n)	MW-13A	09/26/2006		0.44	MG/L	
Nitrate (as n)	MW-13A	12/13/2006		0.46	MG/L	
Nitrate (as n)	MW-13A	03/27/2007		0.42	MG/L	
Nitrate (as n)	MW-13A	06/19/2007		0.46	MG/L	
Nitrate (as n)	MW-13A	09/19/2007		0.46	MG/L	
Nitrate (as n)	MW-13A	12/19/2007		0.41	MG/L	
Nitrate (as n)	MW-13A	03/25/2008		0.49	MG/L	
Nitrate (as n)	MW-13A	06/18/2008		0.51	MG/L	
Nitrate (as n)	MW-13A	09/17/2008		0.44	MG/L	
Nitrate (as n)	MW-13A	12/17/2008		0.48	MG/L	
Nitrate (as n)	MW-13A	03/24/2009		0.47	MG/L	
Nitrate (as n)	MW-13A	06/17/2009		0.49	MG/L	
Nitrate (as n)	MW-13A	09/10/2009		0.45	MG/L	
Nitrate (as n)	MW-13A	12/03/2009		0.41	MG/L	
Nitrate (as n)	MW-13A	03/25/2010		0.48	MG/L	
Nitrate (as n)	MW-13A	06/23/2010		0.47	MG/L	
Nitrate (as n)	MW-13A	09/23/2010		0.51	MG/L	
Nitrate (as n)	MW-13A	12/08/2010		0.49	MG/L	
Nitrate (as n)	MW-13A	03/30/2011		0.53	MG/L	
Nitrate (as n)	MW-13A	06/06/2011		0.46	MG/L	
Nitrate (as n)	MW-13A	09/27/2011		0.48	MG/L	
Nitrate (as n)	MW-13A	12/14/2011		0.48	MG/L	
Nitrate (as n)	MW-13A	03/21/2012		9.4	MG/L	*
Nitrate (as n)	MW-13A	06/08/2012		0.45	MG/L	
Nitrate (as n)	MW-13A	09/26/2012		0.42	MG/L	
Nitrate (as n)	MW-13A	12/03/2012		0.54	MG/L	
Nitrate (as n)	MW-13A	03/11/2013		0.46	MG/L	
Nitrate (as n)	MW-13A	06/05/2013		0.49	MG/L	
Nitrate (as n)	MW-13A	12/03/2013		0.47	MG/L	
Nitrate (as n)	MW-13A	03/04/2014		0.48	MG/L	
Nitrate (as n)	MW-13A	06/02/2014		0.48	MG/L	
Nitrate (as n)	MW-13A	09/22/2014		0.44	MG/L	
Nitrate (as n)	MW-13A	11/17/2014		0.46	MG/L	
Nitrate (as n)	MW-13A	02/23/2015		0.47	MG/L	
Nitrate (as n)	MW-13A	05/19/2015		0.45	MG/L	
Nitrate (as n)	MW-13A	08/26/2015		0.41	MG/L	
Nitrate (as n)	MW-13A	11/10/2015		0.44	MG/L	
Nitrate (as n)	MW-13A	02/22/2016		0.42	MG/L	
Nitrate (as n)	MW-13A	05/16/2016		0.45	MG/L	
Nitrate (as n)	MW-13A	08/31/2016		0.45	MG/L	
Nitrate (as n)	MW-13A	11/14/2016		0.48	MG/L	
Nitrate (as n)	MW-13A	05/24/2017		0.45	MG/L	
Nitrate (as n)	MW-13A	11/13/2017		0.42	MG/L	
Nitrate (as n)	MW-13B	03/22/2005		0.5	MG/L	
Nitrate (as n)	MW-13B	06/15/2005		0.74	MG/L	
Nitrate (as n)	MW-13B	09/27/2005		0.46	MG/L	
Nitrate (as n)	MW-13B	12/15/2005		0.49	MG/L	
Nitrate (as n)	MW-13B	03/29/2006		0.44	MG/L	
Nitrate (as n)	MW-13B	06/21/2006		0.56	MG/L	
Nitrate (as n)	MW-13B	09/26/2006		0.44	MG/L	
Nitrate (as n)	MW-13B	12/13/2006		0.4	MG/L	
Nitrate (as n)	MW-13B	03/27/2007		0.43	MG/L	
Nitrate (as n)	MW-13B	06/19/2007		0.48	MG/L	
Nitrate (as n)	MW-13B	09/18/2007		0.48	MG/L	
Nitrate (as n)	MW-13B	12/19/2007		0.89	MG/L	
Nitrate (as n)	MW-13B	03/25/2008		0.48	MG/L	
Nitrate (as n)	MW-13B	06/18/2008		0.95	MG/L	
Nitrate (as n)	MW-13B	09/17/2008		0.46	MG/L	
Nitrate (as n)	MW-13B	12/16/2008		0.53	MG/L	
Nitrate (as n)	MW-13B	03/24/2009		0.46	MG/L	
Nitrate (as n)	MW-13B	06/17/2009		0.49	MG/L	
Nitrate (as n)	MW-13B	09/10/2009		0.46	MG/L	
Nitrate (as n)	MW-13B	12/03/2009		0.4	MG/L	
Nitrate (as n)	MW-13B	03/25/2010		0.46	MG/L	
Nitrate (as n)	MW-13B	06/23/2010		0.45	MG/L	
Nitrate (as n)	MW-13B	09/23/2010		0.48	MG/L	
Nitrate (as n)	MW-13B	12/08/2010		0.5	MG/L	
Nitrate (as n)	MW-13B	03/30/2011		0.51	MG/L	
Nitrate (as n)	MW-13B	06/06/2011		0.43	MG/L	

\* = outlier for that constituent/well  
ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Nitrate (as n)	MW-13B	09/27/2011		0.46	MG/L	
Nitrate (as n)	MW-13B	12/14/2011		0.47	MG/L	
Nitrate (as n)	MW-13B	03/21/2012		9.7	MG/L	*
Nitrate (as n)	MW-13B	06/08/2012		0.45	MG/L	
Nitrate (as n)	MW-13B	09/26/2012		0.4	MG/L	
Nitrate (as n)	MW-13B	12/03/2012		0.42	MG/L	
Nitrate (as n)	MW-13B	03/11/2013		0.43	MG/L	
Nitrate (as n)	MW-13B	06/05/2013		0.49	MG/L	
Nitrate (as n)	MW-13B	12/03/2013		0.51	MG/L	
Nitrate (as n)	MW-13B	03/04/2014		0.45	MG/L	
Nitrate (as n)	MW-13B	06/02/2014		0.53	MG/L	
Nitrate (as n)	MW-13B	09/22/2014		0.45	MG/L	
Nitrate (as n)	MW-13B	11/17/2014		0.47	MG/L	
Nitrate (as n)	MW-13B	02/23/2015		0.45	MG/L	
Nitrate (as n)	MW-13B	05/19/2015		0.45	MG/L	
Nitrate (as n)	MW-13B	08/26/2015		0.44	MG/L	
Nitrate (as n)	MW-13B	11/10/2015		0.45	MG/L	
Nitrate (as n)	MW-13B	02/22/2016		0.43	MG/L	
Nitrate (as n)	MW-13B	05/16/2016		0.46	MG/L	
Nitrate (as n)	MW-13B	08/31/2016		0.45	MG/L	
Nitrate (as n)	MW-13B	11/14/2016		0.64	MG/L	
Nitrate (as n)	MW-13B	05/24/2017		0.48	MG/L	
Nitrate (as n)	MW-13B	11/13/2017		0.44	MG/L	
Nitrate (as n)	MW-16	03/24/2009		0.28	MG/L	
Nitrate (as n)	MW-16	06/16/2009		0.33	MG/L	
Nitrate (as n)	MW-16	09/09/2009		0.31	MG/L	
Nitrate (as n)	MW-16	12/03/2009		0.4	MG/L	
Nitrate (as n)	MW-16	03/25/2010		0.29	MG/L	
Nitrate (as n)	MW-16	06/24/2010		0.16	MG/L	
Nitrate (as n)	MW-16	09/24/2010		0.51	MG/L	
Nitrate (as n)	MW-16	12/09/2010		0.9	MG/L	
Nitrate (as n)	MW-16	03/30/2011		0.52	MG/L	
Nitrate (as n)	MW-16	06/07/2011		0.46	MG/L	
Nitrate (as n)	MW-16	09/27/2011		0.73	MG/L	
Nitrate (as n)	MW-16	12/13/2011		1.1	MG/L	
Nitrate (as n)	MW-16	03/21/2012		0.89	MG/L	*
Nitrate (as n)	MW-16	06/08/2012		1.4	MG/L	
Nitrate (as n)	MW-16	09/27/2012		0.96	MG/L	
Nitrate (as n)	MW-16	12/04/2012		0.86	MG/L	
Nitrate (as n)	MW-16	03/12/2013		1.6	MG/L	
Nitrate (as n)	MW-16	06/04/2013		1.5	MG/L	
Nitrate (as n)	MW-16	09/05/2013		0.72	MG/L	
Nitrate (as n)	MW-16	12/16/2013		0.75	MG/L	
Nitrate (as n)	MW-16	03/05/2014		0.55	MG/L	
Nitrate (as n)	MW-16	06/02/2014		1.2	MG/L	
Nitrate (as n)	MW-16	09/22/2014		0.36	MG/L	
Nitrate (as n)	MW-16	11/18/2014		0.28	MG/L	
Nitrate (as n)	MW-16	02/23/2015		0.26	MG/L	
Nitrate (as n)	MW-16	05/20/2015		0.55	MG/L	
Nitrate (as n)	MW-16	08/26/2015		0.38	MG/L	
Nitrate (as n)	MW-16	11/11/2015		0.19	MG/L	
Nitrate (as n)	MW-16	02/24/2016		0.5	MG/L	
Nitrate (as n)	MW-16	05/16/2016		0.69	MG/L	
Nitrate (as n)	MW-16	08/31/2016		0.27	MG/L	
Nitrate (as n)	MW-16	11/14/2016		0.24	MG/L	
Nitrate (as n)	MW-16	05/24/2017		0.55	MG/L	
Nitrate (as n)	MW-16	11/13/2017		0.28	MG/L	
Nitrate (as n)	MW-35	03/22/2005		0.37	MG/L	
Nitrate (as n)	MW-35	06/14/2005		0.33	MG/L	
Nitrate (as n)	MW-35	09/27/2005		0.96	MG/L	
Nitrate (as n)	MW-35	12/15/2005		0.29	MG/L	
Nitrate (as n)	MW-35	03/28/2006		0.34	MG/L	
Nitrate (as n)	MW-35	06/21/2006		0.4	MG/L	
Nitrate (as n)	MW-35	09/26/2006		0.31	MG/L	
Nitrate (as n)	MW-35	12/12/2006		0.35	MG/L	
Nitrate (as n)	MW-35	03/27/2007		0.3	MG/L	
Nitrate (as n)	MW-35	06/20/2007		0.34	MG/L	
Nitrate (as n)	MW-35	09/18/2007		0.32	MG/L	
Nitrate (as n)	MW-35	12/20/2007		0.32	MG/L	
Nitrate (as n)	MW-35	03/25/2008		0.3	MG/L	
Nitrate (as n)	MW-35	06/18/2008		1	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Nitrate (as n)	MW-35	09/18/2008		0.35	MG/L	
Nitrate (as n)	MW-35	12/19/2008		0.37	MG/L	
Nitrate (as n)	MW-35	03/24/2009		0.35	MG/L	
Nitrate (as n)	MW-35	06/16/2009		0.37	MG/L	
Nitrate (as n)	MW-35	09/10/2009		0.35	MG/L	
Nitrate (as n)	MW-35	12/03/2009		0.52	MG/L	
Nitrate (as n)	MW-35	03/25/2010		0.36	MG/L	
Nitrate (as n)	MW-35	06/23/2010		0.32	MG/L	
Nitrate (as n)	MW-35	09/23/2010		0.4	MG/L	
Nitrate (as n)	MW-35	12/09/2010		0.39	MG/L	
Nitrate (as n)	MW-35	03/30/2011		0.39	MG/L	
Nitrate (as n)	MW-35	06/06/2011		0.39	MG/L	
Nitrate (as n)	MW-35	09/26/2011		0.4	MG/L	
Nitrate (as n)	MW-35	12/13/2011		0.39	MG/L	
Nitrate (as n)	MW-35	03/21/2012		0.45	MG/L	*
Nitrate (as n)	MW-35	06/06/2012		0.43	MG/L	
Nitrate (as n)	MW-35	09/26/2012		0.37	MG/L	
Nitrate (as n)	MW-35	12/04/2012		0.42	MG/L	
Nitrate (as n)	MW-35	03/13/2013		0.47	MG/L	
Nitrate (as n)	MW-35	06/06/2013		0.45	MG/L	
Nitrate (as n)	MW-35	09/05/2013		0.42	MG/L	
Nitrate (as n)	MW-35	12/16/2013		0.4	MG/L	
Nitrate (as n)	MW-35	03/04/2014		0.42	MG/L	
Nitrate (as n)	MW-35	06/02/2014		0.42	MG/L	
Nitrate (as n)	MW-35	09/22/2014		0.42	MG/L	
Nitrate (as n)	MW-35	11/17/2014		0.42	MG/L	
Nitrate (as n)	MW-35	02/25/2015		0.41	MG/L	
Nitrate (as n)	MW-35	05/19/2015		0.4	MG/L	
Nitrate (as n)	MW-35	08/26/2015		0.4	MG/L	
Nitrate (as n)	MW-35	11/10/2015		0.41	MG/L	
Nitrate (as n)	MW-35	02/22/2016		0.41	MG/L	
Nitrate (as n)	MW-35	05/16/2016		0.44	MG/L	
Nitrate (as n)	MW-35	08/31/2016		0.43	MG/L	
Nitrate (as n)	MW-35	11/15/2016		0.47	MG/L	
Nitrate (as n)	MW-35	05/24/2017		0.49	MG/L	
Nitrate (as n)	MW-35	11/15/2017		0.51	MG/L	
pH	MW-13A	03/22/2005		7.01	pH Units	
pH	MW-13A	06/15/2005		7.21	pH Units	
pH	MW-13A	09/27/2005		7.1	pH Units	
pH	MW-13A	12/15/2005		6.34	pH Units	
pH	MW-13A	03/28/2006		6.9	pH Units	
pH	MW-13A	06/21/2006		7.25	pH Units	
pH	MW-13A	09/26/2006		7.25	pH Units	
pH	MW-13A	12/13/2006		6.87	pH Units	
pH	MW-13A	03/27/2007		7.32	pH Units	
pH	MW-13A	09/19/2007		6.68	pH Units	
pH	MW-13A	12/19/2007		7.29	pH Units	
pH	MW-13A	03/25/2008		7.12	pH Units	
pH	MW-13A	06/18/2008		7.19	pH Units	
pH	MW-13A	09/17/2008		7	pH Units	
pH	MW-13A	12/17/2008		6.51	pH Units	
pH	MW-13A	03/24/2009		6.85	pH Units	
pH	MW-13A	06/17/2009		7.07	pH Units	
pH	MW-13A	12/03/2009		7.03	pH Units	
pH	MW-13A	03/25/2010		6.96	pH Units	
pH	MW-13A	06/23/2010		6.99	pH Units	
pH	MW-13A	09/23/2010		6.78	pH Units	
pH	MW-13A	12/08/2010		7.48	pH Units	
pH	MW-13A	03/30/2011		6.95	pH Units	
pH	MW-13A	06/06/2011		7.45	pH Units	
pH	MW-13A	09/27/2011		6.91	pH Units	
pH	MW-13A	12/14/2011		7.13	pH Units	
pH	MW-13A	03/21/2012		6.78	pH Units	
pH	MW-13A	06/08/2012		6.72	pH Units	
pH	MW-13A	09/26/2012		7.35	pH Units	
pH	MW-13A	12/03/2012		6.95	pH Units	
pH	MW-13A	03/11/2013		7.18	pH Units	
pH	MW-13A	06/05/2013		7.33	pH Units	
pH	MW-13A	12/03/2013		7.16	pH Units	
pH	MW-13A	03/04/2014		7.48	pH Units	
pH	MW-13A	06/02/2014		7.26	pH Units	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
pH	MW-13A	09/22/2014		7.26	pH Units	
pH	MW-13A	11/17/2014		6.99	pH Units	
pH	MW-13A	05/19/2015		7.03	pH Units	
pH	MW-13A	08/26/2015		7.07	pH Units	
pH	MW-13A	11/10/2015		6.68	pH Units	
pH	MW-13A	02/22/2016		6.69	pH Units	
pH	MW-13A	05/16/2016		6.87	pH Units	
pH	MW-13A	08/31/2016		6.65	pH Units	
pH	MW-13A	11/14/2016		6.5	pH Units	
pH	MW-13A	02/22/2017		6.97	pH Units	
pH	MW-13A	05/24/2017		7.17	pH Units	
pH	MW-13A	08/30/2017		7	pH Units	
pH	MW-13A	11/13/2017		6.79	pH Units	
pH	MW-13B	03/22/2005		7.49	pH Units	
pH	MW-13B	06/15/2005		7.81	pH Units	
pH	MW-13B	09/27/2005		7.73	pH Units	
pH	MW-13B	12/15/2005		6.93	pH Units	
pH	MW-13B	03/29/2006		7.45	pH Units	
pH	MW-13B	06/21/2006		7.76	pH Units	
pH	MW-13B	09/26/2006		7.78	pH Units	
pH	MW-13B	12/13/2006		7.32	pH Units	
pH	MW-13B	03/27/2007		7.76	pH Units	
pH	MW-13B	09/18/2007		7.48	pH Units	
pH	MW-13B	12/19/2007		7.85	pH Units	
pH	MW-13B	03/25/2008		7.78	pH Units	
pH	MW-13B	06/18/2008		7.74	pH Units	
pH	MW-13B	09/17/2008		7.57	pH Units	
pH	MW-13B	12/16/2008		7.23	pH Units	
pH	MW-13B	03/24/2009		7.37	pH Units	
pH	MW-13B	06/17/2009		7.56	pH Units	
pH	MW-13B	12/03/2009		6.93	pH Units	
pH	MW-13B	03/25/2010		7.49	pH Units	
pH	MW-13B	06/23/2010		7.27	pH Units	
pH	MW-13B	09/23/2010		7.11	pH Units	
pH	MW-13B	12/08/2010		7.05	pH Units	
pH	MW-13B	03/30/2011		7.51	pH Units	
pH	MW-13B	06/06/2011		7.58	pH Units	
pH	MW-13B	09/27/2011		7.08	pH Units	
pH	MW-13B	12/14/2011		7.53	pH Units	
pH	MW-13B	03/21/2012		7.09	pH Units	
pH	MW-13B	06/08/2012		7.15	pH Units	
pH	MW-13B	09/26/2012		7.32	pH Units	
pH	MW-13B	12/03/2012		7.32	pH Units	
pH	MW-13B	03/11/2013		7.42	pH Units	
pH	MW-13B	06/05/2013		7.27	pH Units	
pH	MW-13B	12/03/2013		7.34	pH Units	
pH	MW-13B	03/04/2014		7.4	pH Units	
pH	MW-13B	06/02/2014		7.35	pH Units	
pH	MW-13B	09/22/2014		7.68	pH Units	
pH	MW-13B	11/17/2014		7.08	pH Units	
pH	MW-13B	05/19/2015		7.65	pH Units	
pH	MW-13B	08/26/2015		7.59	pH Units	
pH	MW-13B	11/10/2015		7.28	pH Units	
pH	MW-13B	02/22/2016		7.01	pH Units	
pH	MW-13B	05/16/2016		7.31	pH Units	
pH	MW-13B	08/31/2016		7.23	pH Units	
pH	MW-13B	11/14/2016		7.17	pH Units	
pH	MW-13B	02/22/2017		7.65	pH Units	
pH	MW-13B	05/24/2017		7.76	pH Units	
pH	MW-13B	08/30/2017		7.41	pH Units	
pH	MW-13B	11/13/2017		7.49	pH Units	
pH	MW-16	03/24/2009		6.27	pH Units	
pH	MW-16	06/16/2009		6.33	pH Units	
pH	MW-16	12/03/2009		6.27	pH Units	
pH	MW-16	03/25/2010		6.26	pH Units	
pH	MW-16	06/24/2010		6.04	pH Units	
pH	MW-16	09/24/2010		5.9	pH Units	
pH	MW-16	12/09/2010		6.17	pH Units	
pH	MW-16	03/30/2011		6.31	pH Units	
pH	MW-16	06/07/2011		6.15	pH Units	
pH	MW-16	09/27/2011		6.44	pH Units	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
pH	MW-16	12/13/2011		6.3	pH Units	
pH	MW-16	03/21/2012		6.32	pH Units	
pH	MW-16	06/08/2012		6.25	pH Units	
pH	MW-16	09/27/2012		6.26	pH Units	
pH	MW-16	12/04/2012		6.22	pH Units	
pH	MW-16	03/12/2013		6.35	pH Units	
pH	MW-16	06/04/2013		6.45	pH Units	
pH	MW-16	09/05/2013		6.62	pH Units	
pH	MW-16	12/16/2013		6.32	pH Units	
pH	MW-16	03/05/2014		6.5	pH Units	
pH	MW-16	06/02/2014		6.61	pH Units	
pH	MW-16	09/22/2014		6.4	pH Units	
pH	MW-16	11/18/2014		6.38	pH Units	
pH	MW-16	02/23/2015		6.48	pH Units	
pH	MW-16	05/20/2015		6.51	pH Units	
pH	MW-16	08/26/2015		6.35	pH Units	
pH	MW-16	11/11/2015		6.13	pH Units	
pH	MW-16	02/24/2016		6.49	pH Units	
pH	MW-16	05/16/2016		6.11	pH Units	
pH	MW-16	08/31/2016		5.93	pH Units	
pH	MW-16	11/14/2016		5.89	pH Units	
pH	MW-16	02/22/2017		6.42	pH Units	
pH	MW-16	05/24/2017		6.35	pH Units	
pH	MW-16	08/30/2017		6.17	pH Units	
pH	MW-16	11/13/2017		6.35	pH Units	
pH	MW-35	03/22/2005		7.06	pH Units	
pH	MW-35	06/14/2005		7.43	pH Units	
pH	MW-35	09/27/2005		7.39	pH Units	
pH	MW-35	12/15/2005		6.41	pH Units	
pH	MW-35	03/28/2006		7.1	pH Units	
pH	MW-35	06/21/2006		7.46	pH Units	
pH	MW-35	09/26/2006		7.5	pH Units	
pH	MW-35	12/12/2006		6.99	pH Units	
pH	MW-35	03/27/2007		7.51	pH Units	
pH	MW-35	09/18/2007		6.97	pH Units	
pH	MW-35	12/20/2007		7.25	pH Units	
pH	MW-35	03/25/2008		7.4	pH Units	
pH	MW-35	06/18/2008		7.44	pH Units	
pH	MW-35	09/18/2008		7.42	pH Units	
pH	MW-35	12/19/2008		7.19	pH Units	
pH	MW-35	03/24/2009		7.21	pH Units	
pH	MW-35	06/16/2009		7.15	pH Units	
pH	MW-35	12/03/2009		7.22	pH Units	
pH	MW-35	03/25/2010		7.24	pH Units	
pH	MW-35	06/23/2010		7.37	pH Units	
pH	MW-35	09/23/2010		6.85	pH Units	
pH	MW-35	12/09/2010		7.39	pH Units	
pH	MW-35	03/30/2011		7.37	pH Units	
pH	MW-35	06/06/2011		7.23	pH Units	
pH	MW-35	09/26/2011		6.86	pH Units	
pH	MW-35	12/13/2011		7	pH Units	
pH	MW-35	03/21/2012		7.02	pH Units	
pH	MW-35	06/06/2012		6.98	pH Units	
pH	MW-35	09/26/2012		7.11	pH Units	
pH	MW-35	12/04/2012		7.16	pH Units	
pH	MW-35	03/13/2013		7.06	pH Units	
pH	MW-35	06/06/2013		7.37	pH Units	
pH	MW-35	09/05/2013		7.1	pH Units	
pH	MW-35	12/16/2013		7.15	pH Units	
pH	MW-35	03/04/2014		7.53	pH Units	
pH	MW-35	06/02/2014		7.17	pH Units	
pH	MW-35	09/22/2014		6.62	pH Units	
pH	MW-35	11/17/2014		7.48	pH Units	
pH	MW-35	02/25/2015		7.77	pH Units	
pH	MW-35	05/19/2015		6.72	pH Units	
pH	MW-35	08/26/2015		7.25	pH Units	
pH	MW-35	11/10/2015		6.92	pH Units	
pH	MW-35	02/22/2016		6.58	pH Units	
pH	MW-35	05/16/2016		6.95	pH Units	
pH	MW-35	08/31/2016		7.09	pH Units	
pH	MW-35	11/15/2016		6.61	pH Units	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit



**TABLE 2-3**  
**Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
pH	MW-35	02/22/2017		7.38	pH Units	
pH	MW-35	05/24/2017		7.23	pH Units	
pH	MW-35	08/30/2017		7.29	pH Units	
pH	MW-35	11/15/2017		6.98	pH Units	
Potassium, dissolved	MW-13A	03/22/2005		0.57	MG/L	
Potassium, dissolved	MW-13A	06/15/2005		0.52	MG/L	
Potassium, dissolved	MW-13A	09/27/2005		0.48	MG/L	
Potassium, dissolved	MW-13A	12/15/2005		0.5	MG/L	
Potassium, dissolved	MW-13A	03/28/2006	ND	1	MG/L	
Potassium, dissolved	MW-13A	06/21/2006	ND	1	MG/L	
Potassium, dissolved	MW-13A	09/26/2006	ND	1	MG/L	
Potassium, dissolved	MW-13A	12/13/2006	ND	1	MG/L	
Potassium, dissolved	MW-13A	03/27/2007	ND	1	MG/L	
Potassium, dissolved	MW-13A	06/19/2007	ND	1	MG/L	
Potassium, dissolved	MW-13A	09/19/2007	ND	1	MG/L	
Potassium, dissolved	MW-13A	12/19/2007	ND	1	MG/L	
Potassium, dissolved	MW-13A	03/25/2008	ND	1	MG/L	
Potassium, dissolved	MW-13A	06/18/2008	ND	1	MG/L	
Potassium, dissolved	MW-13A	09/17/2008	ND	1	MG/L	
Potassium, dissolved	MW-13A	12/17/2008	ND	1	MG/L	
Potassium, dissolved	MW-13A	03/24/2009	ND	1	MG/L	
Potassium, dissolved	MW-13A	06/17/2009	ND	1	MG/L	
Potassium, dissolved	MW-13A	09/10/2009	ND	1	MG/L	
Potassium, dissolved	MW-13A	12/03/2009	ND	1	MG/L	
Potassium, dissolved	MW-13A	03/25/2010	ND	1	MG/L	
Potassium, dissolved	MW-13A	06/23/2010	ND	1	MG/L	
Potassium, dissolved	MW-13A	09/23/2010	ND	1	MG/L	
Potassium, dissolved	MW-13A	12/08/2010	ND	1	MG/L	
Potassium, dissolved	MW-13A	03/30/2011	ND	1	MG/L	
Potassium, dissolved	MW-13A	06/06/2011	ND	1	MG/L	
Potassium, dissolved	MW-13A	09/27/2011	ND	1	MG/L	
Potassium, dissolved	MW-13A	12/14/2011	ND	1	MG/L	
Potassium, dissolved	MW-13A	03/21/2012	ND	1	MG/L	
Potassium, dissolved	MW-13A	06/08/2012	ND	1	MG/L	
Potassium, dissolved	MW-13A	09/26/2012	ND	1	MG/L	
Potassium, dissolved	MW-13A	12/03/2012	ND	1	MG/L	
Potassium, dissolved	MW-13A	03/11/2013	ND	1	MG/L	
Potassium, dissolved	MW-13A	06/05/2013	ND	1	MG/L	
Potassium, dissolved	MW-13A	12/03/2013	ND	1	MG/L	
Potassium, dissolved	MW-13A	03/04/2014	ND	1	MG/L	
Potassium, dissolved	MW-13A	06/02/2014	ND	1	MG/L	
Potassium, dissolved	MW-13A	09/22/2014	ND	1	MG/L	
Potassium, dissolved	MW-13A	11/17/2014	ND	1	MG/L	
Potassium, dissolved	MW-13A	02/23/2015	ND	1	MG/L	
Potassium, dissolved	MW-13A	05/19/2015	ND	1	MG/L	
Potassium, dissolved	MW-13A	08/26/2015	ND	1	MG/L	
Potassium, dissolved	MW-13A	11/10/2015	ND	1	MG/L	
Potassium, dissolved	MW-13A	02/22/2016	ND	1	MG/L	
Potassium, dissolved	MW-13A	05/16/2016	ND	1	MG/L	
Potassium, dissolved	MW-13A	08/31/2016	ND	1	MG/L	
Potassium, dissolved	MW-13A	11/14/2016	ND	1	MG/L	
Potassium, dissolved	MW-13A	02/22/2017	ND	1	MG/L	
Potassium, dissolved	MW-13A	05/24/2017		1.4	MG/L	
Potassium, dissolved	MW-13A	08/30/2017	ND	1	MG/L	
Potassium, dissolved	MW-13A	11/13/2017	ND	1	MG/L	
Potassium, dissolved	MW-13B	03/22/2005		0.6	MG/L	
Potassium, dissolved	MW-13B	06/15/2005		0.55	MG/L	
Potassium, dissolved	MW-13B	09/27/2005		0.55	MG/L	
Potassium, dissolved	MW-13B	12/15/2005		0.52	MG/L	
Potassium, dissolved	MW-13B	03/29/2006	ND	1	MG/L	
Potassium, dissolved	MW-13B	06/21/2006	ND	1	MG/L	
Potassium, dissolved	MW-13B	09/26/2006	ND	1	MG/L	
Potassium, dissolved	MW-13B	12/13/2006	ND	1	MG/L	
Potassium, dissolved	MW-13B	03/27/2007	ND	1	MG/L	
Potassium, dissolved	MW-13B	06/19/2007	ND	1	MG/L	
Potassium, dissolved	MW-13B	09/18/2007	ND	1	MG/L	
Potassium, dissolved	MW-13B	12/19/2007	ND	1	MG/L	
Potassium, dissolved	MW-13B	03/25/2008	ND	1	MG/L	
Potassium, dissolved	MW-13B	06/18/2008	ND	1	MG/L	
Potassium, dissolved	MW-13B	09/17/2008	ND	1	MG/L	
Potassium, dissolved	MW-13B	12/16/2008	ND	1	MG/L	

\* = outlier for that constituent/well  
ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Potassium, dissolved	MW-13B	03/24/2009	ND	1	MG/L	
Potassium, dissolved	MW-13B	06/17/2009	ND	1	MG/L	
Potassium, dissolved	MW-13B	09/10/2009	ND	1	MG/L	
Potassium, dissolved	MW-13B	12/03/2009	ND	1	MG/L	
Potassium, dissolved	MW-13B	03/25/2010	ND	1	MG/L	
Potassium, dissolved	MW-13B	06/23/2010	ND	1	MG/L	
Potassium, dissolved	MW-13B	09/23/2010	ND	1	MG/L	
Potassium, dissolved	MW-13B	12/08/2010	ND	1	MG/L	
Potassium, dissolved	MW-13B	03/30/2011	ND	1	MG/L	
Potassium, dissolved	MW-13B	06/06/2011	ND	1	MG/L	
Potassium, dissolved	MW-13B	09/27/2011	ND	1	MG/L	
Potassium, dissolved	MW-13B	12/14/2011	ND	1	MG/L	
Potassium, dissolved	MW-13B	03/21/2012	ND	1	MG/L	
Potassium, dissolved	MW-13B	06/08/2012	ND	1	MG/L	
Potassium, dissolved	MW-13B	09/26/2012	ND	1	MG/L	
Potassium, dissolved	MW-13B	12/03/2012	ND	1	MG/L	
Potassium, dissolved	MW-13B	03/11/2013	ND	1	MG/L	
Potassium, dissolved	MW-13B	06/05/2013	ND	1	MG/L	
Potassium, dissolved	MW-13B	12/03/2013	ND	1	MG/L	
Potassium, dissolved	MW-13B	03/04/2014	ND	1	MG/L	
Potassium, dissolved	MW-13B	06/02/2014	ND	1	MG/L	
Potassium, dissolved	MW-13B	09/22/2014	ND	1	MG/L	
Potassium, dissolved	MW-13B	11/17/2014	ND	1	MG/L	
Potassium, dissolved	MW-13B	02/23/2015	ND	1	MG/L	
Potassium, dissolved	MW-13B	05/19/2015	ND	1	MG/L	
Potassium, dissolved	MW-13B	08/26/2015	ND	1	MG/L	
Potassium, dissolved	MW-13B	11/10/2015	ND	1	MG/L	
Potassium, dissolved	MW-13B	02/22/2016	ND	1	MG/L	
Potassium, dissolved	MW-13B	05/16/2016	ND	1	MG/L	
Potassium, dissolved	MW-13B	08/31/2016	ND	1	MG/L	
Potassium, dissolved	MW-13B	11/14/2016	ND	1	MG/L	
Potassium, dissolved	MW-13B	02/22/2017	ND	1	MG/L	
Potassium, dissolved	MW-13B	05/24/2017	ND	1	MG/L	
Potassium, dissolved	MW-13B	08/30/2017	ND	1	MG/L	
Potassium, dissolved	MW-13B	11/13/2017	ND	1	MG/L	
Potassium, dissolved	MW-16	03/24/2009	ND	1	MG/L	
Potassium, dissolved	MW-16	06/16/2009	ND	1	MG/L	
Potassium, dissolved	MW-16	09/09/2009	ND	1	MG/L	
Potassium, dissolved	MW-16	12/03/2009	ND	1	MG/L	
Potassium, dissolved	MW-16	03/25/2010	ND	1	MG/L	
Potassium, dissolved	MW-16	06/24/2010	ND	1	MG/L	
Potassium, dissolved	MW-16	09/24/2010	ND	1	MG/L	
Potassium, dissolved	MW-16	12/09/2010	ND	1	MG/L	
Potassium, dissolved	MW-16	03/30/2011	ND	1	MG/L	
Potassium, dissolved	MW-16	06/07/2011	ND	1	MG/L	
Potassium, dissolved	MW-16	09/27/2011	ND	1	MG/L	
Potassium, dissolved	MW-16	12/13/2011	ND	1	MG/L	
Potassium, dissolved	MW-16	03/21/2012	ND	1	MG/L	
Potassium, dissolved	MW-16	06/08/2012	ND	1	MG/L	
Potassium, dissolved	MW-16	09/27/2012	ND	1	MG/L	
Potassium, dissolved	MW-16	12/04/2012	ND	1	MG/L	
Potassium, dissolved	MW-16	03/12/2013	ND	1	MG/L	
Potassium, dissolved	MW-16	06/04/2013	ND	1	MG/L	
Potassium, dissolved	MW-16	09/05/2013	ND	1	MG/L	
Potassium, dissolved	MW-16	12/16/2013	ND	1	MG/L	
Potassium, dissolved	MW-16	03/05/2014	ND	1	MG/L	
Potassium, dissolved	MW-16	06/02/2014		1.2	MG/L	
Potassium, dissolved	MW-16	09/22/2014	ND	1	MG/L	
Potassium, dissolved	MW-16	11/18/2014	ND	1	MG/L	
Potassium, dissolved	MW-16	02/23/2015	ND	1	MG/L	
Potassium, dissolved	MW-16	05/20/2015	ND	1	MG/L	
Potassium, dissolved	MW-16	08/26/2015	ND	1	MG/L	
Potassium, dissolved	MW-16	11/11/2015	ND	1	MG/L	
Potassium, dissolved	MW-16	02/24/2016	ND	1	MG/L	
Potassium, dissolved	MW-16	05/16/2016	ND	1	MG/L	
Potassium, dissolved	MW-16	08/31/2016	ND	1	MG/L	
Potassium, dissolved	MW-16	11/14/2016	ND	1	MG/L	
Potassium, dissolved	MW-16	02/22/2017	ND	1	MG/L	
Potassium, dissolved	MW-16	05/24/2017	ND	1	MG/L	
Potassium, dissolved	MW-16	08/30/2017	ND	1	MG/L	
Potassium, dissolved	MW-16	11/13/2017	ND	1	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Potassium, dissolved	MW-35	03/22/2005		0.52	MG/L	
Potassium, dissolved	MW-35	06/14/2005		0.48	MG/L	
Potassium, dissolved	MW-35	09/27/2005		0.52	MG/L	
Potassium, dissolved	MW-35	12/15/2005		0.46	MG/L	
Potassium, dissolved	MW-35	03/28/2006	ND	1	MG/L	
Potassium, dissolved	MW-35	06/21/2006	ND	1	MG/L	
Potassium, dissolved	MW-35	09/26/2006	ND	1	MG/L	
Potassium, dissolved	MW-35	12/12/2006	ND	1	MG/L	
Potassium, dissolved	MW-35	03/27/2007	ND	1	MG/L	
Potassium, dissolved	MW-35	06/20/2007	ND	1	MG/L	
Potassium, dissolved	MW-35	09/18/2007	ND	1	MG/L	
Potassium, dissolved	MW-35	12/20/2007	ND	1	MG/L	
Potassium, dissolved	MW-35	03/25/2008	ND	1	MG/L	
Potassium, dissolved	MW-35	06/18/2008	ND	1	MG/L	
Potassium, dissolved	MW-35	09/18/2008	ND	1	MG/L	
Potassium, dissolved	MW-35	12/19/2008	ND	1	MG/L	
Potassium, dissolved	MW-35	03/24/2009	ND	1	MG/L	
Potassium, dissolved	MW-35	06/16/2009	ND	1	MG/L	
Potassium, dissolved	MW-35	09/10/2009	ND	1	MG/L	
Potassium, dissolved	MW-35	12/03/2009	ND	1	MG/L	
Potassium, dissolved	MW-35	03/25/2010	ND	1	MG/L	
Potassium, dissolved	MW-35	06/23/2010	ND	1	MG/L	
Potassium, dissolved	MW-35	09/23/2010	ND	1	MG/L	
Potassium, dissolved	MW-35	12/09/2010	ND	1	MG/L	
Potassium, dissolved	MW-35	03/30/2011	ND	1	MG/L	
Potassium, dissolved	MW-35	06/06/2011	ND	1	MG/L	
Potassium, dissolved	MW-35	09/26/2011	ND	1	MG/L	
Potassium, dissolved	MW-35	12/13/2011	ND	1	MG/L	
Potassium, dissolved	MW-35	03/21/2012	ND	1	MG/L	
Potassium, dissolved	MW-35	06/06/2012	ND	1	MG/L	
Potassium, dissolved	MW-35	09/26/2012	ND	1	MG/L	
Potassium, dissolved	MW-35	12/04/2012	ND	1	MG/L	
Potassium, dissolved	MW-35	03/13/2013	ND	1	MG/L	
Potassium, dissolved	MW-35	06/06/2013	ND	1	MG/L	
Potassium, dissolved	MW-35	09/05/2013	ND	1	MG/L	
Potassium, dissolved	MW-35	12/16/2013	ND	1	MG/L	
Potassium, dissolved	MW-35	03/04/2014	ND	1	MG/L	
Potassium, dissolved	MW-35	06/02/2014	ND	1	MG/L	
Potassium, dissolved	MW-35	09/22/2014	ND	1	MG/L	
Potassium, dissolved	MW-35	11/17/2014	ND	1	MG/L	
Potassium, dissolved	MW-35	02/25/2015	ND	1	MG/L	
Potassium, dissolved	MW-35	05/19/2015	ND	1	MG/L	
Potassium, dissolved	MW-35	08/26/2015	ND	1	MG/L	
Potassium, dissolved	MW-35	11/10/2015	ND	1	MG/L	
Potassium, dissolved	MW-35	02/22/2016	ND	1	MG/L	
Potassium, dissolved	MW-35	05/16/2016	ND	1	MG/L	
Potassium, dissolved	MW-35	08/31/2016	ND	1	MG/L	
Potassium, dissolved	MW-35	11/15/2016	ND	1	MG/L	
Potassium, dissolved	MW-35	02/22/2017	ND	1	MG/L	
Potassium, dissolved	MW-35	05/24/2017	ND	1	MG/L	
Potassium, dissolved	MW-35	08/30/2017	ND	1	MG/L	
Potassium, dissolved	MW-35	11/15/2017	ND	1	MG/L	
Selenium, total	MW-13A	12/03/2013	ND	0.001	MG/L	
Selenium, total	MW-13A	03/04/2014	ND	0.001	MG/L	
Selenium, total	MW-13A	06/02/2014	ND	0.001	MG/L	
Selenium, total	MW-13A	09/22/2014	ND	0.001	MG/L	
Selenium, total	MW-13A	11/17/2014	ND	0.001	MG/L	
Selenium, total	MW-13A	02/23/2015	ND	0.001	MG/L	
Selenium, total	MW-13A	05/19/2015	ND	0.001	MG/L	
Selenium, total	MW-13A	08/26/2015	ND	0.001	MG/L	
Selenium, total	MW-13A	11/10/2015	ND	0.001	MG/L	
Selenium, total	MW-13A	02/22/2016	ND	0.001	MG/L	
Selenium, total	MW-13A	05/16/2016	ND	0.001	MG/L	
Selenium, total	MW-13A	08/31/2016	ND	0.001	MG/L	
Selenium, total	MW-13A	11/14/2016	ND	0.001	MG/L	
Selenium, total	MW-13A	02/22/2017	ND	0.001	MG/L	
Selenium, total	MW-13A	05/24/2017	ND	0.001	MG/L	
Selenium, total	MW-13A	08/30/2017	ND	0.001	MG/L	
Selenium, total	MW-13A	11/13/2017	ND	0.001	MG/L	
Selenium, total	MW-13B	12/03/2013	ND	0.001	MG/L	
Selenium, total	MW-13B	03/04/2014	ND	0.001	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

<b>Constituent</b>	<b>Well</b>	<b>Date</b>	<b>ND</b>	<b>Result</b>	<b>Unit</b>	<b>Outlier</b>
Selenium, total	MW-13B	06/02/2014	ND	0.001	MG/L	
Selenium, total	MW-13B	09/22/2014	ND	0.001	MG/L	
Selenium, total	MW-13B	11/17/2014	ND	0.001	MG/L	
Selenium, total	MW-13B	02/23/2015	ND	0.001	MG/L	
Selenium, total	MW-13B	05/19/2015	ND	0.001	MG/L	
Selenium, total	MW-13B	08/26/2015	ND	0.001	MG/L	
Selenium, total	MW-13B	11/10/2015	ND	0.001	MG/L	
Selenium, total	MW-13B	02/22/2016	ND	0.001	MG/L	
Selenium, total	MW-13B	05/16/2016	ND	0.001	MG/L	
Selenium, total	MW-13B	08/31/2016	ND	0.001	MG/L	
Selenium, total	MW-13B	11/14/2016	ND	0.001	MG/L	
Selenium, total	MW-13B	02/22/2017	ND	0.001	MG/L	
Selenium, total	MW-13B	05/24/2017	ND	0.001	MG/L	
Selenium, total	MW-13B	08/30/2017	ND	0.001	MG/L	
Selenium, total	MW-13B	11/13/2017	ND	0.001	MG/L	
Selenium, total	MW-16	09/05/2013	ND	0.001	MG/L	
Selenium, total	MW-16	12/16/2013	ND	0.001	MG/L	
Selenium, total	MW-16	03/05/2014	ND	0.001	MG/L	
Selenium, total	MW-16	06/02/2014	ND	0.001	MG/L	
Selenium, total	MW-16	09/22/2014	ND	0.001	MG/L	
Selenium, total	MW-16	11/18/2014	ND	0.001	MG/L	
Selenium, total	MW-16	02/23/2015	ND	0.001	MG/L	
Selenium, total	MW-16	05/20/2015	ND	0.001	MG/L	
Selenium, total	MW-16	08/26/2015	ND	0.001	MG/L	
Selenium, total	MW-16	11/11/2015	ND	0.001	MG/L	
Selenium, total	MW-16	02/24/2016	ND	0.001	MG/L	
Selenium, total	MW-16	05/16/2016	ND	0.001	MG/L	
Selenium, total	MW-16	08/31/2016	ND	0.001	MG/L	
Selenium, total	MW-16	11/14/2016	ND	0.001	MG/L	
Selenium, total	MW-16	02/22/2017	ND	0.001	MG/L	
Selenium, total	MW-16	05/24/2017	ND	0.001	MG/L	
Selenium, total	MW-16	08/30/2017	ND	0.001	MG/L	
Selenium, total	MW-16	11/13/2017	ND	0.001	MG/L	
Selenium, total	MW-35	09/05/2013	ND	0.001	MG/L	
Selenium, total	MW-35	12/16/2013	ND	0.001	MG/L	
Selenium, total	MW-35	03/04/2014	ND	0.001	MG/L	
Selenium, total	MW-35	06/02/2014	ND	0.001	MG/L	
Selenium, total	MW-35	09/22/2014	ND	0.001	MG/L	
Selenium, total	MW-35	11/17/2014	ND	0.001	MG/L	
Selenium, total	MW-35	02/25/2015	ND	0.001	MG/L	
Selenium, total	MW-35	05/19/2015	ND	0.001	MG/L	
Selenium, total	MW-35	08/26/2015	ND	0.001	MG/L	
Selenium, total	MW-35	11/10/2015	ND	0.001	MG/L	
Selenium, total	MW-35	02/22/2016	ND	0.001	MG/L	
Selenium, total	MW-35	05/16/2016	ND	0.001	MG/L	
Selenium, total	MW-35	08/31/2016	ND	0.001	MG/L	
Selenium, total	MW-35	11/15/2016	ND	0.001	MG/L	
Selenium, total	MW-35	02/22/2017	ND	0.001	MG/L	
Selenium, total	MW-35	05/24/2017	ND	0.001	MG/L	
Selenium, total	MW-35	08/30/2017	ND	0.001	MG/L	
Selenium, total	MW-35	11/15/2017	ND	0.001	MG/L	
Silver, total	MW-13A	12/03/2013	ND	0.002	MG/L	
Silver, total	MW-13A	03/04/2014	ND	0.002	MG/L	
Silver, total	MW-13A	06/02/2014	ND	0.002	MG/L	
Silver, total	MW-13A	09/22/2014	ND	0.002	MG/L	
Silver, total	MW-13A	11/17/2014	ND	0.002	MG/L	
Silver, total	MW-13A	02/23/2015	ND	0.002	MG/L	
Silver, total	MW-13A	05/19/2015	ND	0.002	MG/L	
Silver, total	MW-13A	08/26/2015	ND	0.002	MG/L	
Silver, total	MW-13A	11/10/2015	ND	0.002	MG/L	
Silver, total	MW-13A	02/22/2016	ND	0.002	MG/L	
Silver, total	MW-13A	05/16/2016	ND	0.002	MG/L	
Silver, total	MW-13A	08/31/2016	ND	0.002	MG/L	
Silver, total	MW-13A	11/14/2016	ND	0.002	MG/L	
Silver, total	MW-13A	02/22/2017	ND	0.002	MG/L	
Silver, total	MW-13A	05/24/2017	ND	0.002	MG/L	
Silver, total	MW-13A	08/30/2017	ND	0.002	MG/L	
Silver, total	MW-13A	11/13/2017	ND	0.002	MG/L	
Silver, total	MW-13B	12/03/2013	ND	0.002	MG/L	
Silver, total	MW-13B	03/04/2014	ND	0.002	MG/L	
Silver, total	MW-13B	06/02/2014	ND	0.002	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3**  
**Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Silver, total	MW-13B	09/22/2014	ND	0.002	MG/L	
Silver, total	MW-13B	11/17/2014	ND	0.002	MG/L	
Silver, total	MW-13B	02/23/2015	ND	0.002	MG/L	
Silver, total	MW-13B	05/19/2015	ND	0.002	MG/L	
Silver, total	MW-13B	08/26/2015	ND	0.002	MG/L	
Silver, total	MW-13B	11/10/2015	ND	0.002	MG/L	
Silver, total	MW-13B	02/22/2016	ND	0.002	MG/L	
Silver, total	MW-13B	05/16/2016	ND	0.002	MG/L	
Silver, total	MW-13B	08/31/2016	ND	0.002	MG/L	
Silver, total	MW-13B	11/14/2016	ND	0.002	MG/L	
Silver, total	MW-13B	02/22/2017	ND	0.002	MG/L	
Silver, total	MW-13B	05/24/2017	ND	0.002	MG/L	
Silver, total	MW-13B	08/30/2017	ND	0.002	MG/L	
Silver, total	MW-13B	11/13/2017	ND	0.002	MG/L	
Silver, total	MW-16	09/05/2013	ND	0.002	MG/L	
Silver, total	MW-16	12/16/2013	ND	0.002	MG/L	
Silver, total	MW-16	03/05/2014	ND	0.002	MG/L	
Silver, total	MW-16	06/02/2014	ND	0.002	MG/L	
Silver, total	MW-16	09/22/2014	ND	0.002	MG/L	
Silver, total	MW-16	11/18/2014	ND	0.002	MG/L	
Silver, total	MW-16	02/23/2015	ND	0.002	MG/L	
Silver, total	MW-16	05/20/2015	ND	0.002	MG/L	
Silver, total	MW-16	08/26/2015	ND	0.002	MG/L	
Silver, total	MW-16	11/11/2015	ND	0.002	MG/L	
Silver, total	MW-16	02/24/2016	ND	0.002	MG/L	
Silver, total	MW-16	05/16/2016	ND	0.002	MG/L	
Silver, total	MW-16	08/31/2016	ND	0.002	MG/L	
Silver, total	MW-16	11/14/2016	ND	0.002	MG/L	
Silver, total	MW-16	02/22/2017	ND	0.002	MG/L	
Silver, total	MW-16	05/24/2017	ND	0.002	MG/L	
Silver, total	MW-16	08/30/2017	ND	0.002	MG/L	
Silver, total	MW-16	11/13/2017	ND	0.002	MG/L	
Silver, total	MW-35	09/05/2013	ND	0.002	MG/L	
Silver, total	MW-35	12/16/2013	ND	0.002	MG/L	
Silver, total	MW-35	03/04/2014	ND	0.002	MG/L	
Silver, total	MW-35	06/02/2014	ND	0.002	MG/L	
Silver, total	MW-35	09/22/2014	ND	0.002	MG/L	
Silver, total	MW-35	11/17/2014	ND	0.002	MG/L	
Silver, total	MW-35	02/25/2015	ND	0.002	MG/L	
Silver, total	MW-35	05/19/2015	ND	0.002	MG/L	
Silver, total	MW-35	08/26/2015	ND	0.002	MG/L	
Silver, total	MW-35	11/10/2015	ND	0.002	MG/L	
Silver, total	MW-35	02/22/2016	ND	0.002	MG/L	
Silver, total	MW-35	05/16/2016	ND	0.002	MG/L	
Silver, total	MW-35	08/31/2016	ND	0.002	MG/L	
Silver, total	MW-35	11/15/2016	ND	0.002	MG/L	
Silver, total	MW-35	02/22/2017	ND	0.002	MG/L	
Silver, total	MW-35	05/24/2017	ND	0.002	MG/L	
Silver, total	MW-35	08/30/2017	ND	0.002	MG/L	
Silver, total	MW-35	11/15/2017	ND	0.002	MG/L	
Sodium, dissolved	MW-13A	03/22/2005		5.4	MG/L	
Sodium, dissolved	MW-13A	06/15/2005		4.4	MG/L	
Sodium, dissolved	MW-13A	09/27/2005		4.5	MG/L	
Sodium, dissolved	MW-13A	12/15/2005		4.8	MG/L	
Sodium, dissolved	MW-13A	03/28/2006		5.4	MG/L	
Sodium, dissolved	MW-13A	06/21/2006		5.2	MG/L	
Sodium, dissolved	MW-13A	09/26/2006		5.5	MG/L	
Sodium, dissolved	MW-13A	12/13/2006		4.8	MG/L	
Sodium, dissolved	MW-13A	03/27/2007		5.4	MG/L	
Sodium, dissolved	MW-13A	06/19/2007		5.5	MG/L	
Sodium, dissolved	MW-13A	09/19/2007		5.4	MG/L	
Sodium, dissolved	MW-13A	12/19/2007		4.9	MG/L	
Sodium, dissolved	MW-13A	03/25/2008		5.5	MG/L	
Sodium, dissolved	MW-13A	06/18/2008		5.5	MG/L	
Sodium, dissolved	MW-13A	09/17/2008		5.2	MG/L	
Sodium, dissolved	MW-13A	12/17/2008		5.5	MG/L	
Sodium, dissolved	MW-13A	03/24/2009		5.3	MG/L	
Sodium, dissolved	MW-13A	06/17/2009		5.4	MG/L	
Sodium, dissolved	MW-13A	09/10/2009		5.2	MG/L	
Sodium, dissolved	MW-13A	12/03/2009		5.6	MG/L	
Sodium, dissolved	MW-13A	03/25/2010		6.1	MG/L	

\* = outlier for that constituent/well  
ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Sodium, dissolved	MW-13A	06/23/2010		5.7	MG/L	
Sodium, dissolved	MW-13A	09/23/2010		5	MG/L	
Sodium, dissolved	MW-13A	12/08/2010		5.2	MG/L	
Sodium, dissolved	MW-13A	03/30/2011		5.4	MG/L	
Sodium, dissolved	MW-13A	06/06/2011		5.4	MG/L	
Sodium, dissolved	MW-13A	09/27/2011		5.6	MG/L	
Sodium, dissolved	MW-13A	12/14/2011		5.5	MG/L	
Sodium, dissolved	MW-13A	03/21/2012		5.3	MG/L	
Sodium, dissolved	MW-13A	06/08/2012		5.2	MG/L	
Sodium, dissolved	MW-13A	09/26/2012		5.2	MG/L	
Sodium, dissolved	MW-13A	12/03/2012		5.5	MG/L	
Sodium, dissolved	MW-13A	03/11/2013		5.7	MG/L	
Sodium, dissolved	MW-13A	06/05/2013		5.6	MG/L	
Sodium, dissolved	MW-13A	12/03/2013		5.5	MG/L	
Sodium, dissolved	MW-13A	03/04/2014		5.4	MG/L	
Sodium, dissolved	MW-13A	06/02/2014		5.2	MG/L	
Sodium, dissolved	MW-13A	09/22/2014		5.2	MG/L	
Sodium, dissolved	MW-13A	11/17/2014		5.4	MG/L	
Sodium, dissolved	MW-13A	02/23/2015		5.2	MG/L	
Sodium, dissolved	MW-13A	05/19/2015		5.5	MG/L	
Sodium, dissolved	MW-13A	08/26/2015		5.3	MG/L	
Sodium, dissolved	MW-13A	11/10/2015		5.4	MG/L	
Sodium, dissolved	MW-13A	02/22/2016		5.9	MG/L	
Sodium, dissolved	MW-13A	05/16/2016		5.5	MG/L	
Sodium, dissolved	MW-13A	08/31/2016		5.4	MG/L	
Sodium, dissolved	MW-13A	11/14/2016		5.4	MG/L	
Sodium, dissolved	MW-13A	02/22/2017		5.4	MG/L	
Sodium, dissolved	MW-13A	05/24/2017		7.7	MG/L	
Sodium, dissolved	MW-13A	08/30/2017		5.4	MG/L	
Sodium, dissolved	MW-13A	11/13/2017		5.1	MG/L	
Sodium, dissolved	MW-13B	03/22/2005		5.3	MG/L	
Sodium, dissolved	MW-13B	06/15/2005		4.8	MG/L	
Sodium, dissolved	MW-13B	09/27/2005		5	MG/L	
Sodium, dissolved	MW-13B	12/15/2005		4.8	MG/L	
Sodium, dissolved	MW-13B	03/29/2006		4.9	MG/L	
Sodium, dissolved	MW-13B	06/21/2006		5	MG/L	
Sodium, dissolved	MW-13B	09/26/2006		5.5	MG/L	
Sodium, dissolved	MW-13B	12/13/2006		4.8	MG/L	
Sodium, dissolved	MW-13B	03/27/2007		5.2	MG/L	
Sodium, dissolved	MW-13B	06/19/2007		5.2	MG/L	
Sodium, dissolved	MW-13B	09/18/2007		5.2	MG/L	
Sodium, dissolved	MW-13B	12/19/2007		4.9	MG/L	
Sodium, dissolved	MW-13B	03/25/2008		5.3	MG/L	
Sodium, dissolved	MW-13B	06/18/2008		5.3	MG/L	
Sodium, dissolved	MW-13B	09/17/2008		5	MG/L	
Sodium, dissolved	MW-13B	12/16/2008		5.1	MG/L	
Sodium, dissolved	MW-13B	03/24/2009		5.1	MG/L	
Sodium, dissolved	MW-13B	06/17/2009		5.3	MG/L	
Sodium, dissolved	MW-13B	09/10/2009		5.1	MG/L	
Sodium, dissolved	MW-13B	12/03/2009		5.3	MG/L	
Sodium, dissolved	MW-13B	03/25/2010		5.3	MG/L	
Sodium, dissolved	MW-13B	06/23/2010		5.3	MG/L	
Sodium, dissolved	MW-13B	09/23/2010		4.8	MG/L	
Sodium, dissolved	MW-13B	12/08/2010		5.6	MG/L	
Sodium, dissolved	MW-13B	03/30/2011		5.1	MG/L	
Sodium, dissolved	MW-13B	06/06/2011		5.2	MG/L	
Sodium, dissolved	MW-13B	09/27/2011		5.2	MG/L	
Sodium, dissolved	MW-13B	12/14/2011		5.1	MG/L	
Sodium, dissolved	MW-13B	03/21/2012		4.9	MG/L	
Sodium, dissolved	MW-13B	06/08/2012		5.1	MG/L	
Sodium, dissolved	MW-13B	09/26/2012		5	MG/L	
Sodium, dissolved	MW-13B	12/03/2012		5.7	MG/L	
Sodium, dissolved	MW-13B	03/11/2013		5.3	MG/L	
Sodium, dissolved	MW-13B	06/05/2013		5.4	MG/L	
Sodium, dissolved	MW-13B	12/03/2013		5.4	MG/L	
Sodium, dissolved	MW-13B	03/04/2014		5.1	MG/L	
Sodium, dissolved	MW-13B	06/02/2014		4.9	MG/L	
Sodium, dissolved	MW-13B	09/22/2014		5	MG/L	
Sodium, dissolved	MW-13B	11/17/2014		5.3	MG/L	
Sodium, dissolved	MW-13B	02/23/2015		5	MG/L	
Sodium, dissolved	MW-13B	05/19/2015		5.5	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Sodium, dissolved	MW-13B	08/26/2015		5.2	MG/L	
Sodium, dissolved	MW-13B	11/10/2015		5.2	MG/L	
Sodium, dissolved	MW-13B	02/22/2016		5.8	MG/L	
Sodium, dissolved	MW-13B	05/16/2016		5.2	MG/L	
Sodium, dissolved	MW-13B	08/31/2016		5.8	MG/L	
Sodium, dissolved	MW-13B	11/14/2016		5.1	MG/L	
Sodium, dissolved	MW-13B	02/22/2017		4.9	MG/L	
Sodium, dissolved	MW-13B	05/24/2017		5.4	MG/L	
Sodium, dissolved	MW-13B	08/30/2017		5.4	MG/L	
Sodium, dissolved	MW-13B	11/13/2017		5.1	MG/L	
Sodium, dissolved	MW-16	03/24/2009		5.4	MG/L	
Sodium, dissolved	MW-16	06/16/2009		5.3	MG/L	
Sodium, dissolved	MW-16	09/09/2009		5.4	MG/L	
Sodium, dissolved	MW-16	12/03/2009		6.2	MG/L	
Sodium, dissolved	MW-16	03/25/2010		4.9	MG/L	
Sodium, dissolved	MW-16	06/24/2010		5.7	MG/L	
Sodium, dissolved	MW-16	09/24/2010		5.7	MG/L	
Sodium, dissolved	MW-16	12/09/2010		5.2	MG/L	
Sodium, dissolved	MW-16	03/30/2011		4.7	MG/L	
Sodium, dissolved	MW-16	06/07/2011		5	MG/L	
Sodium, dissolved	MW-16	09/27/2011		5.8	MG/L	
Sodium, dissolved	MW-16	12/13/2011		5.3	MG/L	
Sodium, dissolved	MW-16	03/21/2012		4.7	MG/L	
Sodium, dissolved	MW-16	06/08/2012		4.8	MG/L	
Sodium, dissolved	MW-16	09/27/2012		5.4	MG/L	
Sodium, dissolved	MW-16	12/04/2012		4.7	MG/L	
Sodium, dissolved	MW-16	03/12/2013		5.1	MG/L	
Sodium, dissolved	MW-16	06/04/2013		5.3	MG/L	
Sodium, dissolved	MW-16	09/05/2013		6.2	MG/L	
Sodium, dissolved	MW-16	12/16/2013		5.7	MG/L	
Sodium, dissolved	MW-16	03/05/2014		4.9	MG/L	
Sodium, dissolved	MW-16	06/02/2014		4.5	MG/L	
Sodium, dissolved	MW-16	09/22/2014		4.9	MG/L	
Sodium, dissolved	MW-16	11/18/2014		4.8	MG/L	
Sodium, dissolved	MW-16	02/23/2015		4.7	MG/L	
Sodium, dissolved	MW-16	05/20/2015		4.6	MG/L	
Sodium, dissolved	MW-16	08/26/2015		4.9	MG/L	
Sodium, dissolved	MW-16	11/11/2015		5.7	MG/L	
Sodium, dissolved	MW-16	02/24/2016		4.4	MG/L	
Sodium, dissolved	MW-16	05/16/2016		4.8	MG/L	
Sodium, dissolved	MW-16	08/31/2016		5.4	MG/L	
Sodium, dissolved	MW-16	11/14/2016		5	MG/L	
Sodium, dissolved	MW-16	02/22/2017		4.2	MG/L	
Sodium, dissolved	MW-16	05/24/2017		4.4	MG/L	
Sodium, dissolved	MW-16	08/30/2017		4.9	MG/L	
Sodium, dissolved	MW-16	11/13/2017		4.9	MG/L	
Sodium, dissolved	MW-35	03/22/2005		5.1	MG/L	
Sodium, dissolved	MW-35	06/14/2005		4.5	MG/L	
Sodium, dissolved	MW-35	09/27/2005		5.1	MG/L	
Sodium, dissolved	MW-35	12/15/2005		4.6	MG/L	
Sodium, dissolved	MW-35	03/28/2006		5	MG/L	
Sodium, dissolved	MW-35	06/21/2006		4.9	MG/L	
Sodium, dissolved	MW-35	09/26/2006		5.1	MG/L	
Sodium, dissolved	MW-35	12/12/2006		4.7	MG/L	
Sodium, dissolved	MW-35	03/27/2007		5.1	MG/L	
Sodium, dissolved	MW-35	06/20/2007		5.2	MG/L	
Sodium, dissolved	MW-35	09/18/2007		5.2	MG/L	
Sodium, dissolved	MW-35	12/20/2007		4.8	MG/L	
Sodium, dissolved	MW-35	03/25/2008		5.1	MG/L	
Sodium, dissolved	MW-35	06/18/2008		4.9	MG/L	
Sodium, dissolved	MW-35	09/18/2008		4.8	MG/L	
Sodium, dissolved	MW-35	12/19/2008		4.7	MG/L	
Sodium, dissolved	MW-35	03/24/2009		5	MG/L	
Sodium, dissolved	MW-35	06/16/2009		5.1	MG/L	
Sodium, dissolved	MW-35	09/10/2009		4.9	MG/L	
Sodium, dissolved	MW-35	12/03/2009		5.3	MG/L	
Sodium, dissolved	MW-35	03/25/2010		5	MG/L	
Sodium, dissolved	MW-35	06/23/2010		5.1	MG/L	
Sodium, dissolved	MW-35	09/23/2010		4.7	MG/L	
Sodium, dissolved	MW-35	12/09/2010		4.8	MG/L	
Sodium, dissolved	MW-35	03/30/2011		4.9	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Sodium, dissolved	MW-35	06/06/2011		5.1	MG/L	
Sodium, dissolved	MW-35	09/26/2011		5.2	MG/L	
Sodium, dissolved	MW-35	12/13/2011		5.1	MG/L	
Sodium, dissolved	MW-35	03/21/2012		5	MG/L	
Sodium, dissolved	MW-35	06/06/2012		4.8	MG/L	
Sodium, dissolved	MW-35	09/26/2012		4.9	MG/L	
Sodium, dissolved	MW-35	12/04/2012		4.5	MG/L	
Sodium, dissolved	MW-35	03/13/2013		4.9	MG/L	
Sodium, dissolved	MW-35	06/06/2013		4.9	MG/L	
Sodium, dissolved	MW-35	09/05/2013		4.9	MG/L	
Sodium, dissolved	MW-35	12/16/2013		5.9	MG/L	
Sodium, dissolved	MW-35	03/04/2014		5.1	MG/L	
Sodium, dissolved	MW-35	06/02/2014		4.9	MG/L	
Sodium, dissolved	MW-35	09/22/2014		5.1	MG/L	
Sodium, dissolved	MW-35	11/17/2014		5.2	MG/L	
Sodium, dissolved	MW-35	02/25/2015		5.2	MG/L	
Sodium, dissolved	MW-35	05/19/2015		4.8	MG/L	
Sodium, dissolved	MW-35	08/26/2015		5.1	MG/L	
Sodium, dissolved	MW-35	11/10/2015		5.5	MG/L	
Sodium, dissolved	MW-35	02/22/2016		5.6	MG/L	
Sodium, dissolved	MW-35	05/16/2016		5.2	MG/L	
Sodium, dissolved	MW-35	08/31/2016		5.1	MG/L	
Sodium, dissolved	MW-35	11/15/2016		6.3	MG/L	
Sodium, dissolved	MW-35	02/22/2017		4.9	MG/L	
Sodium, dissolved	MW-35	05/24/2017		5	MG/L	
Sodium, dissolved	MW-35	08/30/2017		5.4	MG/L	
Sodium, dissolved	MW-35	11/15/2017		5	MG/L	
Specific conductivity	MW-13A	03/22/2005		0.158	mS/cm	
Specific conductivity	MW-13A	06/15/2005		0.167	mS/cm	
Specific conductivity	MW-13A	09/27/2005		0.161	mS/cm	
Specific conductivity	MW-13A	12/15/2005		0.159	mS/cm	
Specific conductivity	MW-13A	03/28/2006		0.152	mS/cm	
Specific conductivity	MW-13A	06/21/2006		0.169	mS/cm	
Specific conductivity	MW-13A	09/26/2006		0.171	mS/cm	
Specific conductivity	MW-13A	12/13/2006		0.17	mS/cm	
Specific conductivity	MW-13A	03/27/2007		0.167	mS/cm	
Specific conductivity	MW-13A	09/19/2007		0.167	mS/cm	
Specific conductivity	MW-13A	12/19/2007		0.169	mS/cm	
Specific conductivity	MW-13A	03/25/2008		0.166	mS/cm	
Specific conductivity	MW-13A	06/18/2008		0.17	mS/cm	
Specific conductivity	MW-13A	09/17/2008		0.168	mS/cm	
Specific conductivity	MW-13A	12/17/2008		0.139	mS/cm	
Specific conductivity	MW-13A	03/24/2009		0.168	mS/cm	
Specific conductivity	MW-13A	06/17/2009		0.174	mS/cm	
Specific conductivity	MW-13A	12/03/2009		0.173	mS/cm	
Specific conductivity	MW-13A	03/25/2010		0.093	mS/cm	
Specific conductivity	MW-13A	06/23/2010		0.145	mS/cm	
Specific conductivity	MW-13A	09/23/2010		0.17	mS/cm	
Specific conductivity	MW-13A	12/08/2010		0.07	mS/cm	
Specific conductivity	MW-13A	03/30/2011		0.151	mS/cm	
Specific conductivity	MW-13A	06/06/2011		0.158	mS/cm	
Specific conductivity	MW-13A	09/27/2011		0.158	mS/cm	
Specific conductivity	MW-13A	12/14/2011		0.176	mS/cm	
Specific conductivity	MW-13A	03/21/2012		0.171	mS/cm	
Specific conductivity	MW-13A	06/08/2012		0.18	mS/cm	
Specific conductivity	MW-13A	09/26/2012		0.15	mS/cm	
Specific conductivity	MW-13A	12/03/2012		0.107	mS/cm	
Specific conductivity	MW-13A	03/11/2013		0.145	mS/cm	
Specific conductivity	MW-13A	06/05/2013		0.147	mS/cm	
Specific conductivity	MW-13A	12/03/2013		0.156	mS/cm	
Specific conductivity	MW-13A	03/04/2014		0.141	mS/cm	
Specific conductivity	MW-13A	06/02/2014		0.154	mS/cm	
Specific conductivity	MW-13A	09/22/2014		0.166	mS/cm	
Specific conductivity	MW-13A	11/17/2014		0.172	mS/cm	
Specific conductivity	MW-13A	02/23/2015		0.165	mS/cm	
Specific conductivity	MW-13A	05/19/2015		0.164	mS/cm	
Specific conductivity	MW-13A	08/26/2015		0.166	mS/cm	
Specific conductivity	MW-13A	11/10/2015		0.169	mS/cm	
Specific conductivity	MW-13A	02/22/2016		0.177	mS/cm	
Specific conductivity	MW-13A	05/16/2016		0.169	mS/cm	
Specific conductivity	MW-13A	08/31/2016		0.171	mS/cm	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit



**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Specific conductivity	MW-13A	11/14/2016		0.169	mS/cm	
Specific conductivity	MW-13A	02/22/2017		0.17	mS/cm	
Specific conductivity	MW-13A	05/24/2017		0.175	mS/cm	
Specific conductivity	MW-13A	08/30/2017		0.175	mS/cm	
Specific conductivity	MW-13A	11/13/2017		0.171	mS/cm	
Specific conductivity	MW-13B	03/22/2005		0.155	mS/cm	
Specific conductivity	MW-13B	06/15/2005		0.165	mS/cm	
Specific conductivity	MW-13B	09/27/2005		0.159	mS/cm	
Specific conductivity	MW-13B	12/15/2005		0.157	mS/cm	
Specific conductivity	MW-13B	03/29/2006		0.151	mS/cm	
Specific conductivity	MW-13B	06/21/2006		0.165	mS/cm	
Specific conductivity	MW-13B	09/26/2006		0.168	mS/cm	
Specific conductivity	MW-13B	12/13/2006		0.165	mS/cm	
Specific conductivity	MW-13B	03/27/2007		0.161	mS/cm	
Specific conductivity	MW-13B	09/18/2007		0.168	mS/cm	
Specific conductivity	MW-13B	12/19/2007		0.164	mS/cm	
Specific conductivity	MW-13B	03/25/2008		0.162	mS/cm	
Specific conductivity	MW-13B	06/18/2008		0.165	mS/cm	
Specific conductivity	MW-13B	09/17/2008		0.164	mS/cm	
Specific conductivity	MW-13B	12/16/2008		0.163	mS/cm	
Specific conductivity	MW-13B	03/24/2009		0.167	mS/cm	
Specific conductivity	MW-13B	06/17/2009		0.169	mS/cm	
Specific conductivity	MW-13B	12/03/2009		0.167	mS/cm	
Specific conductivity	MW-13B	03/25/2010		0.09	mS/cm	
Specific conductivity	MW-13B	06/23/2010		0.141	mS/cm	
Specific conductivity	MW-13B	09/23/2010		0.162	mS/cm	
Specific conductivity	MW-13B	12/08/2010		0.073	mS/cm	
Specific conductivity	MW-13B	03/30/2011		0.144	mS/cm	
Specific conductivity	MW-13B	06/06/2011		0.135	mS/cm	
Specific conductivity	MW-13B	09/27/2011		0.151	mS/cm	
Specific conductivity	MW-13B	12/14/2011		0.169	mS/cm	
Specific conductivity	MW-13B	03/21/2012		0.165	mS/cm	
Specific conductivity	MW-13B	06/08/2012		0.175	mS/cm	
Specific conductivity	MW-13B	09/26/2012		0.148	mS/cm	
Specific conductivity	MW-13B	12/03/2012		0.14	mS/cm	
Specific conductivity	MW-13B	03/11/2013		0.144	mS/cm	
Specific conductivity	MW-13B	06/05/2013		0.144	mS/cm	
Specific conductivity	MW-13B	12/03/2013		0.154	mS/cm	
Specific conductivity	MW-13B	03/04/2014		0.139	mS/cm	
Specific conductivity	MW-13B	06/02/2014		0.154	mS/cm	
Specific conductivity	MW-13B	09/22/2014		0.167	mS/cm	
Specific conductivity	MW-13B	11/17/2014		0.172	mS/cm	
Specific conductivity	MW-13B	02/23/2015		0.164	mS/cm	
Specific conductivity	MW-13B	05/19/2015		0.165	mS/cm	
Specific conductivity	MW-13B	08/26/2015		0.164	mS/cm	
Specific conductivity	MW-13B	11/10/2015		0.169	mS/cm	
Specific conductivity	MW-13B	02/22/2016		0.176	mS/cm	
Specific conductivity	MW-13B	05/16/2016		0.168	mS/cm	
Specific conductivity	MW-13B	08/31/2016		0.171	mS/cm	
Specific conductivity	MW-13B	11/14/2016		0.171	mS/cm	
Specific conductivity	MW-13B	02/22/2017		0.171	mS/cm	
Specific conductivity	MW-13B	05/24/2017		0.175	mS/cm	
Specific conductivity	MW-13B	08/30/2017		0.178	mS/cm	
Specific conductivity	MW-13B	11/13/2017		0.17	mS/cm	
Specific conductivity	MW-16	03/24/2009		0.135	mS/cm	
Specific conductivity	MW-16	06/16/2009		0.123	mS/cm	
Specific conductivity	MW-16	12/03/2009		0.16	mS/cm	
Specific conductivity	MW-16	03/25/2010		0.118	mS/cm	
Specific conductivity	MW-16	06/24/2010		0.155	mS/cm	
Specific conductivity	MW-16	09/24/2010		0.148	mS/cm	
Specific conductivity	MW-16	12/09/2010		0.15	mS/cm	
Specific conductivity	MW-16	03/30/2011		0.102	mS/cm	
Specific conductivity	MW-16	06/07/2011		0.096	mS/cm	
Specific conductivity	MW-16	09/27/2011		0.068	mS/cm	
Specific conductivity	MW-16	12/13/2011		0.12	mS/cm	
Specific conductivity	MW-16	03/21/2012		0.079	mS/cm	
Specific conductivity	MW-16	06/08/2012		0.118	mS/cm	
Specific conductivity	MW-16	09/27/2012		0.106	mS/cm	
Specific conductivity	MW-16	12/04/2012		0.085	mS/cm	
Specific conductivity	MW-16	03/12/2013		0.118	mS/cm	
Specific conductivity	MW-16	06/04/2013		0.103	mS/cm	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Specific conductivity	MW-16	09/05/2013		0.11	mS/cm	
Specific conductivity	MW-16	12/16/2013		0.096	mS/cm	
Specific conductivity	MW-16	03/05/2014		0.099	mS/cm	
Specific conductivity	MW-16	06/02/2014		0.094	mS/cm	
Specific conductivity	MW-16	09/22/2014		0.122	mS/cm	
Specific conductivity	MW-16	11/18/2014		0.126	mS/cm	
Specific conductivity	MW-16	02/23/2015		0.08	mS/cm	
Specific conductivity	MW-16	05/20/2015		0.101	mS/cm	
Specific conductivity	MW-16	08/26/2015		0.097	mS/cm	
Specific conductivity	MW-16	11/11/2015		0.136	mS/cm	
Specific conductivity	MW-16	02/24/2016		0.091	mS/cm	
Specific conductivity	MW-16	05/16/2016		0.102	mS/cm	
Specific conductivity	MW-16	08/31/2016		0.123	mS/cm	
Specific conductivity	MW-16	11/14/2016		0.11	mS/cm	
Specific conductivity	MW-16	02/22/2017		0.097	mS/cm	
Specific conductivity	MW-16	05/24/2017		0.047	mS/cm	
Specific conductivity	MW-16	08/30/2017		0.114	mS/cm	
Specific conductivity	MW-16	11/13/2017		0.104	mS/cm	
Specific conductivity	MW-35	03/22/2005		0.143	mS/cm	
Specific conductivity	MW-35	06/14/2005		0.153	mS/cm	
Specific conductivity	MW-35	09/27/2005		0.148	mS/cm	
Specific conductivity	MW-35	12/15/2005		0.145	mS/cm	
Specific conductivity	MW-35	03/28/2006		0.136	mS/cm	
Specific conductivity	MW-35	06/21/2006		0.152	mS/cm	
Specific conductivity	MW-35	09/26/2006		0.155	mS/cm	
Specific conductivity	MW-35	12/12/2006		0.151	mS/cm	
Specific conductivity	MW-35	03/27/2007		0.148	mS/cm	
Specific conductivity	MW-35	09/18/2007		0.152	mS/cm	
Specific conductivity	MW-35	12/20/2007		0.152	mS/cm	
Specific conductivity	MW-35	03/25/2008		0.147	mS/cm	
Specific conductivity	MW-35	06/18/2008		0.151	mS/cm	
Specific conductivity	MW-35	09/18/2008		0.142	mS/cm	
Specific conductivity	MW-35	12/19/2008		0.144	mS/cm	
Specific conductivity	MW-35	03/24/2009		0.15	mS/cm	
Specific conductivity	MW-35	06/16/2009		0.155	mS/cm	
Specific conductivity	MW-35	12/03/2009		0.152	mS/cm	
Specific conductivity	MW-35	03/25/2010		0.084	mS/cm	
Specific conductivity	MW-35	06/23/2010		0.128	mS/cm	
Specific conductivity	MW-35	09/23/2010		0.151	mS/cm	
Specific conductivity	MW-35	12/09/2010		0.15	mS/cm	
Specific conductivity	MW-35	03/30/2011		0.132	mS/cm	
Specific conductivity	MW-35	06/06/2011		0.123	mS/cm	
Specific conductivity	MW-35	09/26/2011		0.131	mS/cm	
Specific conductivity	MW-35	12/13/2011		0.148	mS/cm	
Specific conductivity	MW-35	03/21/2012		0.152	mS/cm	
Specific conductivity	MW-35	06/06/2012		0.138	mS/cm	
Specific conductivity	MW-35	09/26/2012		0.135	mS/cm	
Specific conductivity	MW-35	12/04/2012		0.148	mS/cm	
Specific conductivity	MW-35	03/13/2013		0.132	mS/cm	
Specific conductivity	MW-35	06/06/2013		0.133	mS/cm	
Specific conductivity	MW-35	09/05/2013		0.132	mS/cm	
Specific conductivity	MW-35	12/16/2013		0.121	mS/cm	
Specific conductivity	MW-35	03/04/2014		0.129	mS/cm	
Specific conductivity	MW-35	06/02/2014		0.14	mS/cm	
Specific conductivity	MW-35	09/22/2014		0.161	mS/cm	
Specific conductivity	MW-35	11/17/2014		0.16	mS/cm	
Specific conductivity	MW-35	02/25/2015		0.152	mS/cm	
Specific conductivity	MW-35	05/19/2015		0.135	mS/cm	
Specific conductivity	MW-35	08/26/2015		0.153	mS/cm	
Specific conductivity	MW-35	11/10/2015		0.156	mS/cm	
Specific conductivity	MW-35	02/22/2016		0.164	mS/cm	
Specific conductivity	MW-35	05/16/2016		0.156	mS/cm	
Specific conductivity	MW-35	08/31/2016		0.159	mS/cm	
Specific conductivity	MW-35	11/15/2016		0.158	mS/cm	
Specific conductivity	MW-35	02/22/2017		0.161	mS/cm	
Specific conductivity	MW-35	05/24/2017		0.166	mS/cm	
Specific conductivity	MW-35	08/30/2017		0.167	mS/cm	
Specific conductivity	MW-35	11/15/2017		0.161	mS/cm	
Sulfate	MW-13A	03/22/2005		2.8	MG/L	
Sulfate	MW-13A	06/15/2005		2.9	MG/L	
Sulfate	MW-13A	09/27/2005		3.2	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Sulfate	MW-13A	12/15/2005		2.1	MG/L	
Sulfate	MW-13A	03/28/2006		3.2	MG/L	
Sulfate	MW-13A	06/21/2006		3.1	MG/L	
Sulfate	MW-13A	09/26/2006		2.5	MG/L	
Sulfate	MW-13A	12/13/2006		2.3	MG/L	
Sulfate	MW-13A	03/27/2007		2.5	MG/L	
Sulfate	MW-13A	06/19/2007		2.5	MG/L	
Sulfate	MW-13A	09/19/2007		2.5	MG/L	
Sulfate	MW-13A	12/19/2007		2.5	MG/L	
Sulfate	MW-13A	03/25/2008		2.4	MG/L	
Sulfate	MW-13A	06/18/2008		2.6	MG/L	
Sulfate	MW-13A	09/17/2008		2.4	MG/L	
Sulfate	MW-13A	12/17/2008		2.4	MG/L	
Sulfate	MW-13A	03/24/2009		2.5	MG/L	
Sulfate	MW-13A	06/17/2009		2.1	MG/L	
Sulfate	MW-13A	09/10/2009		2.2	MG/L	
Sulfate	MW-13A	12/03/2009		2.3	MG/L	
Sulfate	MW-13A	03/25/2010		2.3	MG/L	
Sulfate	MW-13A	06/23/2010		2.1	MG/L	
Sulfate	MW-13A	09/23/2010		2.3	MG/L	
Sulfate	MW-13A	12/08/2010		3.7	MG/L	
Sulfate	MW-13A	03/30/2011		2.2	MG/L	
Sulfate	MW-13A	06/06/2011		2.2	MG/L	
Sulfate	MW-13A	09/27/2011		2.3	MG/L	
Sulfate	MW-13A	12/14/2011		2.5	MG/L	
Sulfate	MW-13A	03/21/2012		1.9	MG/L	
Sulfate	MW-13A	06/08/2012		2.1	MG/L	
Sulfate	MW-13A	09/26/2012		2.1	MG/L	
Sulfate	MW-13A	12/03/2012		2.2	MG/L	
Sulfate	MW-13A	03/11/2013		1.9	MG/L	
Sulfate	MW-13A	06/05/2013		1.7	MG/L	
Sulfate	MW-13A	12/03/2013		1.6	MG/L	
Sulfate	MW-13A	03/04/2014		2.1	MG/L	
Sulfate	MW-13A	06/02/2014		2.2	MG/L	
Sulfate	MW-13A	09/22/2014		2.2	MG/L	
Sulfate	MW-13A	11/17/2014		2.1	MG/L	
Sulfate	MW-13A	02/23/2015		2.1	MG/L	
Sulfate	MW-13A	05/19/2015		2.1	MG/L	
Sulfate	MW-13A	08/26/2015		2.3	MG/L	
Sulfate	MW-13A	11/10/2015		2.1	MG/L	
Sulfate	MW-13A	02/22/2016		2.1	MG/L	
Sulfate	MW-13A	05/16/2016		2.2	MG/L	
Sulfate	MW-13A	08/31/2016		2.3	MG/L	
Sulfate	MW-13A	11/14/2016		2	MG/L	
Sulfate	MW-13A	02/22/2017		2	MG/L	
Sulfate	MW-13A	05/24/2017		2.1	MG/L	
Sulfate	MW-13A	08/30/2017		1.8	MG/L	
Sulfate	MW-13A	11/13/2017		1.8	MG/L	
Sulfate	MW-13B	03/22/2005		4.6	MG/L	
Sulfate	MW-13B	06/15/2005		4.7	MG/L	
Sulfate	MW-13B	09/27/2005		4.5	MG/L	
Sulfate	MW-13B	12/15/2005		3.6	MG/L	
Sulfate	MW-13B	03/29/2006		4.5	MG/L	
Sulfate	MW-13B	06/21/2006		4.4	MG/L	
Sulfate	MW-13B	09/26/2006		4.1	MG/L	
Sulfate	MW-13B	12/13/2006		3.9	MG/L	
Sulfate	MW-13B	03/27/2007		4.1	MG/L	
Sulfate	MW-13B	06/19/2007		4.1	MG/L	
Sulfate	MW-13B	09/18/2007		4.2	MG/L	
Sulfate	MW-13B	12/19/2007		4.1	MG/L	
Sulfate	MW-13B	03/25/2008		4	MG/L	
Sulfate	MW-13B	06/18/2008		4.1	MG/L	
Sulfate	MW-13B	09/17/2008		4.2	MG/L	
Sulfate	MW-13B	12/16/2008		4.2	MG/L	
Sulfate	MW-13B	03/24/2009		4.2	MG/L	
Sulfate	MW-13B	06/17/2009		3.7	MG/L	
Sulfate	MW-13B	09/10/2009		3.7	MG/L	
Sulfate	MW-13B	12/03/2009		4.1	MG/L	
Sulfate	MW-13B	03/25/2010		3.9	MG/L	
Sulfate	MW-13B	06/23/2010		3.6	MG/L	
Sulfate	MW-13B	09/23/2010		3.8	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Sulfate	MW-13B	12/08/2010		2.4	MG/L	
Sulfate	MW-13B	03/30/2011		4.4	MG/L	
Sulfate	MW-13B	06/06/2011		3.7	MG/L	
Sulfate	MW-13B	09/27/2011		3.7	MG/L	
Sulfate	MW-13B	12/14/2011		3.5	MG/L	
Sulfate	MW-13B	03/21/2012		3.2	MG/L	
Sulfate	MW-13B	06/08/2012		3.5	MG/L	
Sulfate	MW-13B	09/26/2012		3.6	MG/L	
Sulfate	MW-13B	12/03/2012		3.5	MG/L	
Sulfate	MW-13B	03/11/2013		3	MG/L	
Sulfate	MW-13B	06/05/2013		3.5	MG/L	
Sulfate	MW-13B	12/03/2013		3.1	MG/L	
Sulfate	MW-13B	03/04/2014		3.7	MG/L	
Sulfate	MW-13B	06/02/2014		3.6	MG/L	
Sulfate	MW-13B	09/22/2014		4.1	MG/L	
Sulfate	MW-13B	11/17/2014		3.7	MG/L	
Sulfate	MW-13B	02/23/2015		3.4	MG/L	
Sulfate	MW-13B	05/19/2015		3.1	MG/L	
Sulfate	MW-13B	08/26/2015		3.7	MG/L	
Sulfate	MW-13B	11/10/2015		3.2	MG/L	
Sulfate	MW-13B	02/22/2016		3.4	MG/L	
Sulfate	MW-13B	05/16/2016		3.5	MG/L	
Sulfate	MW-13B	08/31/2016		3.7	MG/L	
Sulfate	MW-13B	11/14/2016		3	MG/L	
Sulfate	MW-13B	02/22/2017		3.5	MG/L	
Sulfate	MW-13B	05/24/2017		3.4	MG/L	
Sulfate	MW-13B	08/30/2017		3.8	MG/L	
Sulfate	MW-13B	11/13/2017		2.9	MG/L	
Sulfate	MW-16	03/24/2009		3	MG/L	
Sulfate	MW-16	06/16/2009		2.2	MG/L	
Sulfate	MW-16	09/09/2009		4.3	MG/L	
Sulfate	MW-16	12/03/2009		3.6	MG/L	
Sulfate	MW-16	03/25/2010		9.9	MG/L	
Sulfate	MW-16	06/24/2010		2.5	MG/L	
Sulfate	MW-16	09/24/2010		2.3	MG/L	
Sulfate	MW-16	12/09/2010		2.7	MG/L	
Sulfate	MW-16	03/30/2011		7.1	MG/L	
Sulfate	MW-16	06/07/2011		2.4	MG/L	
Sulfate	MW-16	09/27/2011		4.1	MG/L	
Sulfate	MW-16	12/13/2011		2.3	MG/L	
Sulfate	MW-16	03/21/2012		1.6	MG/L	
Sulfate	MW-16	06/08/2012		3	MG/L	
Sulfate	MW-16	09/27/2012		3.1	MG/L	
Sulfate	MW-16	12/04/2012		3	MG/L	
Sulfate	MW-16	03/12/2013		1.9	MG/L	
Sulfate	MW-16	06/04/2013		2.7	MG/L	
Sulfate	MW-16	09/05/2013		1.7	MG/L	
Sulfate	MW-16	12/16/2013		2.3	MG/L	
Sulfate	MW-16	03/05/2014		2.8	MG/L	
Sulfate	MW-16	06/02/2014		3.8	MG/L	
Sulfate	MW-16	09/22/2014		2.9	MG/L	
Sulfate	MW-16	11/18/2014		3.3	MG/L	
Sulfate	MW-16	02/23/2015		2.9	MG/L	
Sulfate	MW-16	05/20/2015		2.1	MG/L	
Sulfate	MW-16	08/26/2015		3.4	MG/L	
Sulfate	MW-16	11/11/2015		2.8	MG/L	
Sulfate	MW-16	02/24/2016		2.9	MG/L	
Sulfate	MW-16	05/16/2016		2.6	MG/L	
Sulfate	MW-16	08/31/2016		1.7	MG/L	
Sulfate	MW-16	11/14/2016		1.6	MG/L	
Sulfate	MW-16	02/22/2017		2.5	MG/L	
Sulfate	MW-16	05/24/2017		2.7	MG/L	
Sulfate	MW-16	08/30/2017		1.6	MG/L	
Sulfate	MW-16	11/13/2017		1	MG/L	
Sulfate	MW-35	03/22/2005		2.5	MG/L	
Sulfate	MW-35	06/14/2005		1.6	MG/L	
Sulfate	MW-35	09/27/2005		1.3	MG/L	
Sulfate	MW-35	12/15/2005	ND	1	MG/L	
Sulfate	MW-35	03/28/2006		3	MG/L	
Sulfate	MW-35	06/21/2006		3	MG/L	
Sulfate	MW-35	09/26/2006		2.4	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Sulfate	MW-35	12/12/2006		2.2	MG/L	
Sulfate	MW-35	03/27/2007		2.5	MG/L	
Sulfate	MW-35	06/20/2007		2.4	MG/L	
Sulfate	MW-35	09/18/2007		2.6	MG/L	
Sulfate	MW-35	12/20/2007		2.4	MG/L	
Sulfate	MW-35	03/25/2008		2.4	MG/L	
Sulfate	MW-35	06/18/2008		2.6	MG/L	
Sulfate	MW-35	09/18/2008		2.3	MG/L	
Sulfate	MW-35	12/19/2008		2.6	MG/L	
Sulfate	MW-35	03/24/2009		2.7	MG/L	
Sulfate	MW-35	06/16/2009		2.2	MG/L	
Sulfate	MW-35	09/10/2009		2.4	MG/L	
Sulfate	MW-35	12/03/2009		2.5	MG/L	
Sulfate	MW-35	03/25/2010		2.6	MG/L	
Sulfate	MW-35	06/23/2010		2.3	MG/L	
Sulfate	MW-35	09/23/2010		2.5	MG/L	
Sulfate	MW-35	12/09/2010		2.2	MG/L	
Sulfate	MW-35	03/30/2011		2.6	MG/L	
Sulfate	MW-35	06/06/2011		2.5	MG/L	
Sulfate	MW-35	09/26/2011		2.6	MG/L	
Sulfate	MW-35	12/13/2011		2.5	MG/L	
Sulfate	MW-35	03/21/2012		2.1	MG/L	
Sulfate	MW-35	06/06/2012		2.4	MG/L	
Sulfate	MW-35	09/26/2012		2.4	MG/L	
Sulfate	MW-35	12/04/2012		2.5	MG/L	
Sulfate	MW-35	03/13/2013		2.3	MG/L	
Sulfate	MW-35	06/06/2013		2	MG/L	
Sulfate	MW-35	09/05/2013		2.1	MG/L	
Sulfate	MW-35	12/16/2013		2.6	MG/L	
Sulfate	MW-35	03/04/2014		2.7	MG/L	
Sulfate	MW-35	06/02/2014		2.5	MG/L	
Sulfate	MW-35	09/22/2014		3.2	MG/L	
Sulfate	MW-35	11/17/2014		2.5	MG/L	
Sulfate	MW-35	02/25/2015		2.4	MG/L	
Sulfate	MW-35	05/19/2015		2.3	MG/L	
Sulfate	MW-35	08/26/2015		2.4	MG/L	
Sulfate	MW-35	11/10/2015		2.5	MG/L	
Sulfate	MW-35	02/22/2016		2.6	MG/L	
Sulfate	MW-35	05/16/2016		2.5	MG/L	
Sulfate	MW-35	08/31/2016		2.8	MG/L	
Sulfate	MW-35	11/15/2016		2.2	MG/L	
Sulfate	MW-35	02/22/2017		2.5	MG/L	
Sulfate	MW-35	05/24/2017		2.3	MG/L	
Sulfate	MW-35	08/30/2017		2.2	MG/L	
Sulfate	MW-35	11/15/2017		2.8	MG/L	
Temperature	MW-13A	03/22/2005		9.08	deg C	
Temperature	MW-13A	06/15/2005		9.37	deg C	
Temperature	MW-13A	09/27/2005		9.65	deg C	
Temperature	MW-13A	12/15/2005		8.6	deg C	
Temperature	MW-13A	03/28/2006		9.44	deg C	
Temperature	MW-13A	06/21/2006		9.41	deg C	
Temperature	MW-13A	09/26/2006		9.71	deg C	
Temperature	MW-13A	12/13/2006		8.79	deg C	
Temperature	MW-13A	03/27/2007		9.14	deg C	
Temperature	MW-13A	09/19/2007		9.26	deg C	
Temperature	MW-13A	12/19/2007		8.17	deg C	
Temperature	MW-13A	03/25/2008		8.47	deg C	
Temperature	MW-13A	06/18/2008		9.3	deg C	
Temperature	MW-13A	09/17/2008		8.8	deg C	
Temperature	MW-13A	12/17/2008		8.75	deg C	
Temperature	MW-13A	03/24/2009		8.32	deg C	
Temperature	MW-13A	06/17/2009		9.85	deg C	
Temperature	MW-13A	12/03/2009		8.92	deg C	
Temperature	MW-13A	03/25/2010		9.22	deg C	
Temperature	MW-13A	06/23/2010		9.58	deg C	
Temperature	MW-13A	09/23/2010		9.42	deg C	
Temperature	MW-13A	12/08/2010		9.45	deg C	
Temperature	MW-13A	03/30/2011		9.37	deg C	
Temperature	MW-13A	06/06/2011		10.4	deg C	
Temperature	MW-13A	09/27/2011		9.58	deg C	
Temperature	MW-13A	12/14/2011		8.92	deg C	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Temperature	MW-13A	03/21/2012		8.74	deg C	
Temperature	MW-13A	06/08/2012		9.3	deg C	
Temperature	MW-13A	09/26/2012		10.04	deg C	
Temperature	MW-13A	12/03/2012		9.2	deg C	
Temperature	MW-13A	03/11/2013		9.22	deg C	
Temperature	MW-13A	06/05/2013		11.96	deg C	
Temperature	MW-13A	12/03/2013		8.93	deg C	
Temperature	MW-13A	03/04/2014		8.98	deg C	
Temperature	MW-13A	06/02/2014		11.15	deg C	
Temperature	MW-13A	09/22/2014		10.58	deg C	
Temperature	MW-13A	11/17/2014		9.4	deg C	
Temperature	MW-13A	02/23/2015		9.41	deg C	
Temperature	MW-13A	05/19/2015		9.89	deg C	
Temperature	MW-13A	08/26/2015		10.69	deg C	
Temperature	MW-13A	11/10/2015		9.49	deg C	
Temperature	MW-13A	02/22/2016		9.59	deg C	
Temperature	MW-13A	05/16/2016		9.77	deg C	
Temperature	MW-13A	08/31/2016		9.98	deg C	
Temperature	MW-13A	11/14/2016		9.57	deg C	
Temperature	MW-13A	02/22/2017		9.11	deg C	
Temperature	MW-13A	05/24/2017		4.59	deg C	
Temperature	MW-13A	08/30/2017		9.85	deg C	
Temperature	MW-13A	11/13/2017		9.41	deg C	
Temperature	MW-13B	03/22/2005		9.55	deg C	
Temperature	MW-13B	06/15/2005		9.92	deg C	
Temperature	MW-13B	09/27/2005		10.79	deg C	
Temperature	MW-13B	12/15/2005		8.11	deg C	
Temperature	MW-13B	03/29/2006		8.8	deg C	
Temperature	MW-13B	06/21/2006		9.76	deg C	
Temperature	MW-13B	09/26/2006		10.32	deg C	
Temperature	MW-13B	12/13/2006		8.85	deg C	
Temperature	MW-13B	03/27/2007		9.04	deg C	
Temperature	MW-13B	09/18/2007		10.01	deg C	
Temperature	MW-13B	12/19/2007		8.08	deg C	
Temperature	MW-13B	03/25/2008		8.09	deg C	
Temperature	MW-13B	06/18/2008		9.23	deg C	
Temperature	MW-13B	09/17/2008		9.01	deg C	
Temperature	MW-13B	12/16/2008		8.43	deg C	
Temperature	MW-13B	03/24/2009		8.37	deg C	
Temperature	MW-13B	06/17/2009		10.81	deg C	
Temperature	MW-13B	12/03/2009		8.79	deg C	
Temperature	MW-13B	03/25/2010		9.23	deg C	
Temperature	MW-13B	06/23/2010		9.97	deg C	
Temperature	MW-13B	09/23/2010		9.6	deg C	
Temperature	MW-13B	12/08/2010		9.25	deg C	
Temperature	MW-13B	03/30/2011		9.32	deg C	
Temperature	MW-13B	06/06/2011		11.3	deg C	
Temperature	MW-13B	09/27/2011		10.57	deg C	
Temperature	MW-13B	12/14/2011		8.76	deg C	
Temperature	MW-13B	03/21/2012		8.5	deg C	
Temperature	MW-13B	06/08/2012		9.4	deg C	
Temperature	MW-13B	09/26/2012		10.59	deg C	
Temperature	MW-13B	12/03/2012		9.2	deg C	
Temperature	MW-13B	03/11/2013		9.15	deg C	
Temperature	MW-13B	06/05/2013		11.41	deg C	
Temperature	MW-13B	12/03/2013		9.44	deg C	
Temperature	MW-13B	03/04/2014		9	deg C	
Temperature	MW-13B	06/02/2014		14.32	deg C	
Temperature	MW-13B	09/22/2014		11.02	deg C	
Temperature	MW-13B	11/17/2014		9.4	deg C	
Temperature	MW-13B	02/23/2015		9.76	deg C	
Temperature	MW-13B	05/19/2015		10.23	deg C	
Temperature	MW-13B	08/26/2015		10.53	deg C	
Temperature	MW-13B	11/10/2015		9.59	deg C	
Temperature	MW-13B	02/22/2016		9.3	deg C	
Temperature	MW-13B	05/16/2016		9.93	deg C	
Temperature	MW-13B	08/31/2016		10.43	deg C	
Temperature	MW-13B	11/14/2016		10.41	deg C	
Temperature	MW-13B	02/22/2017		9.06	deg C	
Temperature	MW-13B	05/24/2017		9.76	deg C	
Temperature	MW-13B	08/30/2017		10.27	deg C	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Temperature	MW-13B	11/13/2017		9.54	deg C	
Temperature	MW-16	03/24/2009		9.08	deg C	
Temperature	MW-16	06/16/2009		9.98	deg C	
Temperature	MW-16	12/03/2009		9.08	deg C	
Temperature	MW-16	03/25/2010		9.11	deg C	
Temperature	MW-16	06/24/2010		9.39	deg C	
Temperature	MW-16	09/24/2010		9.44	deg C	
Temperature	MW-16	12/09/2010		9.13	deg C	
Temperature	MW-16	03/30/2011		9.14	deg C	
Temperature	MW-16	06/07/2011		9.46	deg C	
Temperature	MW-16	09/27/2011		9.43	deg C	
Temperature	MW-16	12/13/2011		8.84	deg C	
Temperature	MW-16	03/21/2012		8.82	deg C	
Temperature	MW-16	06/08/2012		9.2	deg C	
Temperature	MW-16	09/27/2012		9.06	deg C	
Temperature	MW-16	12/04/2012		9.1	deg C	
Temperature	MW-16	03/12/2013		9.02	deg C	
Temperature	MW-16	06/04/2013		9.47	deg C	
Temperature	MW-16	09/05/2013		9.36	deg C	
Temperature	MW-16	12/16/2013		9.04	deg C	
Temperature	MW-16	03/05/2014		9.4	deg C	
Temperature	MW-16	06/02/2014		9.56	deg C	
Temperature	MW-16	09/22/2014		10.73	deg C	
Temperature	MW-16	11/18/2014		8.9	deg C	
Temperature	MW-16	02/23/2015		9.02	deg C	
Temperature	MW-16	05/20/2015		9.3	deg C	
Temperature	MW-16	08/26/2015		9.48	deg C	
Temperature	MW-16	11/11/2015		9.01	deg C	
Temperature	MW-16	02/24/2016		9.02	deg C	
Temperature	MW-16	05/16/2016		9.38	deg C	
Temperature	MW-16	08/31/2016		9.66	deg C	
Temperature	MW-16	11/14/2016		9.81	deg C	
Temperature	MW-16	02/22/2017		9.01	deg C	
Temperature	MW-16	05/24/2017		9.35	deg C	
Temperature	MW-16	08/30/2017		9.7	deg C	
Temperature	MW-16	11/13/2017		9.3	deg C	
Temperature	MW-35	03/22/2005		9.8	deg C	
Temperature	MW-35	06/14/2005		10.28	deg C	
Temperature	MW-35	09/27/2005		10.49	deg C	
Temperature	MW-35	12/15/2005		8.86	deg C	
Temperature	MW-35	03/28/2006		9.53	deg C	
Temperature	MW-35	06/21/2006		10.31	deg C	
Temperature	MW-35	09/26/2006		10.62	deg C	
Temperature	MW-35	12/12/2006		9.26	deg C	
Temperature	MW-35	03/27/2007		9.4	deg C	
Temperature	MW-35	09/18/2007		10.24	deg C	
Temperature	MW-35	12/20/2007		8.69	deg C	
Temperature	MW-35	03/25/2008		8.75	deg C	
Temperature	MW-35	06/18/2008		9.73	deg C	
Temperature	MW-35	09/18/2008		9.98	deg C	
Temperature	MW-35	12/19/2008		8.5	deg C	
Temperature	MW-35	03/24/2009		9.32	deg C	
Temperature	MW-35	06/16/2009		11.76	deg C	
Temperature	MW-35	12/03/2009		9.57	deg C	
Temperature	MW-35	03/25/2010		9.82	deg C	
Temperature	MW-35	06/23/2010		10.07	deg C	
Temperature	MW-35	09/23/2010		10.09	deg C	
Temperature	MW-35	12/09/2010		9.85	deg C	
Temperature	MW-35	03/30/2011		9.72	deg C	
Temperature	MW-35	06/06/2011		10.2	deg C	
Temperature	MW-35	09/26/2011		10.14	deg C	
Temperature	MW-35	12/13/2011		9.41	deg C	
Temperature	MW-35	03/21/2012		9.78	deg C	
Temperature	MW-35	06/06/2012		10.3	deg C	
Temperature	MW-35	09/26/2012		10.2	deg C	
Temperature	MW-35	12/04/2012		9.8	deg C	
Temperature	MW-35	03/13/2013		9.75	deg C	
Temperature	MW-35	06/06/2013		10.83	deg C	
Temperature	MW-35	09/05/2013		10.09	deg C	
Temperature	MW-35	12/16/2013		9.84	deg C	
Temperature	MW-35	03/04/2014		9.76	deg C	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Temperature	MW-35	06/02/2014		11.79	deg C	
Temperature	MW-35	09/22/2014		13.7	deg C	
Temperature	MW-35	11/17/2014		10.4	deg C	
Temperature	MW-35	02/25/2015		9.9	deg C	
Temperature	MW-35	05/19/2015		10.3	deg C	
Temperature	MW-35	08/26/2015		13.09	deg C	
Temperature	MW-35	11/10/2015		10.34	deg C	
Temperature	MW-35	02/22/2016		10.31	deg C	
Temperature	MW-35	05/16/2016		10.12	deg C	
Temperature	MW-35	08/31/2016		10.78	deg C	
Temperature	MW-35	11/15/2016		10.41	deg C	
Temperature	MW-35	02/22/2017		9.95	deg C	
Temperature	MW-35	05/24/2017		9.99	deg C	
Temperature	MW-35	08/30/2017		11.63	deg C	
Temperature	MW-35	11/15/2017		9.83	deg C	
Thallium, total	MW-13A	12/03/2013	ND	0.001	MG/L	
Thallium, total	MW-13A	03/04/2014	ND	0.001	MG/L	
Thallium, total	MW-13A	06/02/2014	ND	0.001	MG/L	
Thallium, total	MW-13A	09/22/2014	ND	0.001	MG/L	
Thallium, total	MW-13A	11/17/2014	ND	0.001	MG/L	
Thallium, total	MW-13A	02/23/2015	ND	0.001	MG/L	
Thallium, total	MW-13A	05/19/2015	ND	0.001	MG/L	
Thallium, total	MW-13A	08/26/2015	ND	0.001	MG/L	
Thallium, total	MW-13A	11/10/2015	ND	0.001	MG/L	
Thallium, total	MW-13A	02/22/2016	ND	0.001	MG/L	
Thallium, total	MW-13A	05/16/2016	ND	0.001	MG/L	
Thallium, total	MW-13A	08/31/2016	ND	0.001	MG/L	
Thallium, total	MW-13A	11/14/2016	ND	0.001	MG/L	
Thallium, total	MW-13A	02/22/2017	ND	0.001	MG/L	
Thallium, total	MW-13A	05/24/2017	ND	0.001	MG/L	
Thallium, total	MW-13A	08/30/2017	ND	0.001	MG/L	
Thallium, total	MW-13A	11/13/2017	ND	0.001	MG/L	
Thallium, total	MW-13B	12/03/2013	ND	0.001	MG/L	
Thallium, total	MW-13B	03/04/2014	ND	0.001	MG/L	
Thallium, total	MW-13B	06/02/2014	ND	0.001	MG/L	
Thallium, total	MW-13B	09/22/2014	ND	0.001	MG/L	
Thallium, total	MW-13B	11/17/2014	ND	0.001	MG/L	
Thallium, total	MW-13B	02/23/2015	ND	0.001	MG/L	
Thallium, total	MW-13B	05/19/2015	ND	0.001	MG/L	
Thallium, total	MW-13B	08/26/2015	ND	0.001	MG/L	
Thallium, total	MW-13B	11/10/2015	ND	0.001	MG/L	
Thallium, total	MW-13B	02/22/2016	ND	0.001	MG/L	
Thallium, total	MW-13B	05/16/2016	ND	0.001	MG/L	
Thallium, total	MW-13B	08/31/2016	ND	0.001	MG/L	
Thallium, total	MW-13B	11/14/2016	ND	0.001	MG/L	
Thallium, total	MW-13B	02/22/2017	ND	0.001	MG/L	
Thallium, total	MW-13B	05/24/2017	ND	0.001	MG/L	
Thallium, total	MW-13B	08/30/2017	ND	0.001	MG/L	
Thallium, total	MW-13B	11/13/2017	ND	0.001	MG/L	
Thallium, total	MW-16	09/05/2013	ND	0.001	MG/L	
Thallium, total	MW-16	12/16/2013	ND	0.001	MG/L	
Thallium, total	MW-16	03/05/2014	ND	0.001	MG/L	
Thallium, total	MW-16	06/02/2014	ND	0.001	MG/L	
Thallium, total	MW-16	09/22/2014	ND	0.001	MG/L	
Thallium, total	MW-16	11/18/2014	ND	0.001	MG/L	
Thallium, total	MW-16	02/23/2015	ND	0.001	MG/L	
Thallium, total	MW-16	05/20/2015	ND	0.001	MG/L	
Thallium, total	MW-16	08/26/2015	ND	0.001	MG/L	
Thallium, total	MW-16	11/11/2015	ND	0.001	MG/L	
Thallium, total	MW-16	02/24/2016	ND	0.001	MG/L	
Thallium, total	MW-16	05/16/2016	ND	0.001	MG/L	
Thallium, total	MW-16	08/31/2016	ND	0.001	MG/L	
Thallium, total	MW-16	11/14/2016	ND	0.001	MG/L	
Thallium, total	MW-16	02/22/2017	ND	0.001	MG/L	
Thallium, total	MW-16	05/24/2017	ND	0.001	MG/L	
Thallium, total	MW-16	08/30/2017	ND	0.001	MG/L	
Thallium, total	MW-16	11/13/2017	ND	0.001	MG/L	
Thallium, total	MW-35	09/05/2013	ND	0.001	MG/L	
Thallium, total	MW-35	12/16/2013	ND	0.001	MG/L	
Thallium, total	MW-35	03/04/2014	ND	0.001	MG/L	
Thallium, total	MW-35	06/02/2014	ND	0.001	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit



**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Thallium, total	MW-35	09/22/2014	ND	0.001	MG/L	
Thallium, total	MW-35	11/17/2014	ND	0.001	MG/L	
Thallium, total	MW-35	02/25/2015	ND	0.001	MG/L	
Thallium, total	MW-35	05/19/2015	ND	0.001	MG/L	
Thallium, total	MW-35	08/26/2015	ND	0.001	MG/L	
Thallium, total	MW-35	11/10/2015	ND	0.001	MG/L	
Thallium, total	MW-35	02/22/2016	ND	0.001	MG/L	
Thallium, total	MW-35	05/16/2016	ND	0.001	MG/L	
Thallium, total	MW-35	08/31/2016	ND	0.001	MG/L	
Thallium, total	MW-35	11/15/2016	ND	0.001	MG/L	
Thallium, total	MW-35	02/22/2017	ND	0.001	MG/L	
Thallium, total	MW-35	05/24/2017	ND	0.001	MG/L	
Thallium, total	MW-35	08/30/2017	ND	0.001	MG/L	
Thallium, total	MW-35	11/15/2017	ND	0.001	MG/L	
Total dissolved solids (tds)	MW-13A	03/22/2005		113	MG/L	
Total dissolved solids (tds)	MW-13A	06/15/2005		111	MG/L	
Total dissolved solids (tds)	MW-13A	09/27/2005		175	MG/L	
Total dissolved solids (tds)	MW-13A	12/15/2005		166	MG/L	
Total dissolved solids (tds)	MW-13A	03/28/2006		110	MG/L	
Total dissolved solids (tds)	MW-13A	06/21/2006		120	MG/L	
Total dissolved solids (tds)	MW-13A	09/26/2006		110	MG/L	
Total dissolved solids (tds)	MW-13A	12/13/2006		100	MG/L	
Total dissolved solids (tds)	MW-13A	03/27/2007		100	MG/L	
Total dissolved solids (tds)	MW-13A	06/19/2007		100	MG/L	
Total dissolved solids (tds)	MW-13A	09/19/2007		110	MG/L	
Total dissolved solids (tds)	MW-13A	12/19/2007		84	MG/L	
Total dissolved solids (tds)	MW-13A	03/25/2008		99	MG/L	
Total dissolved solids (tds)	MW-13A	06/18/2008		110	MG/L	
Total dissolved solids (tds)	MW-13A	09/17/2008		110	MG/L	
Total dissolved solids (tds)	MW-13A	12/17/2008		90	MG/L	
Total dissolved solids (tds)	MW-13A	03/24/2009		95	MG/L	
Total dissolved solids (tds)	MW-13A	06/17/2009		110	MG/L	
Total dissolved solids (tds)	MW-13A	09/10/2009		100	MG/L	
Total dissolved solids (tds)	MW-13A	12/03/2009		100	MG/L	
Total dissolved solids (tds)	MW-13A	03/25/2010		100	MG/L	
Total dissolved solids (tds)	MW-13A	06/23/2010		120	MG/L	
Total dissolved solids (tds)	MW-13A	09/23/2010		98	MG/L	
Total dissolved solids (tds)	MW-13A	12/08/2010		90	MG/L	
Total dissolved solids (tds)	MW-13A	03/30/2011		110	MG/L	
Total dissolved solids (tds)	MW-13A	06/06/2011		110	MG/L	
Total dissolved solids (tds)	MW-13A	09/27/2011		100	MG/L	
Total dissolved solids (tds)	MW-13A	12/14/2011		97	MG/L	
Total dissolved solids (tds)	MW-13A	03/21/2012		93	MG/L	
Total dissolved solids (tds)	MW-13A	06/08/2012		120	MG/L	
Total dissolved solids (tds)	MW-13A	09/26/2012		120	MG/L	
Total dissolved solids (tds)	MW-13A	12/03/2012		88	MG/L	
Total dissolved solids (tds)	MW-13A	03/11/2013		100	MG/L	
Total dissolved solids (tds)	MW-13A	06/05/2013		100	MG/L	
Total dissolved solids (tds)	MW-13A	12/03/2013		98	MG/L	
Total dissolved solids (tds)	MW-13A	03/04/2014		100	MG/L	
Total dissolved solids (tds)	MW-13A	06/02/2014		100	MG/L	
Total dissolved solids (tds)	MW-13A	09/22/2014		110	MG/L	
Total dissolved solids (tds)	MW-13A	11/17/2014		110	MG/L	
Total dissolved solids (tds)	MW-13A	02/23/2015		99	MG/L	
Total dissolved solids (tds)	MW-13A	05/19/2015		100	MG/L	
Total dissolved solids (tds)	MW-13A	08/26/2015		97	MG/L	
Total dissolved solids (tds)	MW-13A	11/10/2015		100	MG/L	
Total dissolved solids (tds)	MW-13A	02/22/2016		100	MG/L	
Total dissolved solids (tds)	MW-13A	05/16/2016		99	MG/L	
Total dissolved solids (tds)	MW-13A	08/31/2016		130	MG/L	
Total dissolved solids (tds)	MW-13A	11/14/2016		110	MG/L	
Total dissolved solids (tds)	MW-13A	02/22/2017		110	MG/L	
Total dissolved solids (tds)	MW-13A	05/24/2017		100	MG/L	
Total dissolved solids (tds)	MW-13A	08/30/2017		100	MG/L	
Total dissolved solids (tds)	MW-13A	11/13/2017		110	MG/L	
Total dissolved solids (tds)	MW-13B	03/22/2005		108	MG/L	
Total dissolved solids (tds)	MW-13B	06/15/2005		114	MG/L	
Total dissolved solids (tds)	MW-13B	09/27/2005		111	MG/L	
Total dissolved solids (tds)	MW-13B	12/15/2005		130	MG/L	
Total dissolved solids (tds)	MW-13B	03/29/2006		89	MG/L	
Total dissolved solids (tds)	MW-13B	06/21/2006		110	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Total dissolved solids (tds)	MW-13B	09/26/2006		100	MG/L	
Total dissolved solids (tds)	MW-13B	12/13/2006		98	MG/L	
Total dissolved solids (tds)	MW-13B	03/27/2007		100	MG/L	
Total dissolved solids (tds)	MW-13B	06/19/2007		99	MG/L	
Total dissolved solids (tds)	MW-13B	09/18/2007		99	MG/L	
Total dissolved solids (tds)	MW-13B	12/19/2007		91	MG/L	
Total dissolved solids (tds)	MW-13B	03/25/2008		99	MG/L	
Total dissolved solids (tds)	MW-13B	06/18/2008		120	MG/L	
Total dissolved solids (tds)	MW-13B	09/17/2008		110	MG/L	
Total dissolved solids (tds)	MW-13B	12/16/2008		93	MG/L	
Total dissolved solids (tds)	MW-13B	03/24/2009		94	MG/L	
Total dissolved solids (tds)	MW-13B	06/17/2009		100	MG/L	
Total dissolved solids (tds)	MW-13B	09/10/2009		100	MG/L	
Total dissolved solids (tds)	MW-13B	12/03/2009		110	MG/L	
Total dissolved solids (tds)	MW-13B	03/25/2010		100	MG/L	
Total dissolved solids (tds)	MW-13B	06/23/2010		110	MG/L	
Total dissolved solids (tds)	MW-13B	09/23/2010		94	MG/L	
Total dissolved solids (tds)	MW-13B	12/08/2010		94	MG/L	
Total dissolved solids (tds)	MW-13B	03/30/2011		110	MG/L	
Total dissolved solids (tds)	MW-13B	06/06/2011		99	MG/L	
Total dissolved solids (tds)	MW-13B	09/27/2011		100	MG/L	
Total dissolved solids (tds)	MW-13B	12/14/2011		91	MG/L	
Total dissolved solids (tds)	MW-13B	03/21/2012		100	MG/L	
Total dissolved solids (tds)	MW-13B	06/08/2012		110	MG/L	
Total dissolved solids (tds)	MW-13B	09/26/2012		110	MG/L	
Total dissolved solids (tds)	MW-13B	12/03/2012		93	MG/L	
Total dissolved solids (tds)	MW-13B	03/11/2013		100	MG/L	
Total dissolved solids (tds)	MW-13B	06/05/2013		98	MG/L	
Total dissolved solids (tds)	MW-13B	12/03/2013		99	MG/L	
Total dissolved solids (tds)	MW-13B	03/04/2014		99	MG/L	
Total dissolved solids (tds)	MW-13B	06/02/2014		100	MG/L	
Total dissolved solids (tds)	MW-13B	09/22/2014		110	MG/L	
Total dissolved solids (tds)	MW-13B	11/17/2014		110	MG/L	
Total dissolved solids (tds)	MW-13B	02/23/2015		110	MG/L	
Total dissolved solids (tds)	MW-13B	05/19/2015		110	MG/L	
Total dissolved solids (tds)	MW-13B	08/26/2015		98	MG/L	
Total dissolved solids (tds)	MW-13B	11/10/2015		100	MG/L	
Total dissolved solids (tds)	MW-13B	02/22/2016		100	MG/L	
Total dissolved solids (tds)	MW-13B	05/16/2016		99	MG/L	
Total dissolved solids (tds)	MW-13B	08/31/2016		120	MG/L	
Total dissolved solids (tds)	MW-13B	11/14/2016		100	MG/L	
Total dissolved solids (tds)	MW-13B	02/22/2017		110	MG/L	
Total dissolved solids (tds)	MW-13B	05/24/2017		97	MG/L	
Total dissolved solids (tds)	MW-13B	08/30/2017		110	MG/L	
Total dissolved solids (tds)	MW-13B	11/13/2017		110	MG/L	
Total dissolved solids (tds)	MW-16	03/24/2009		87	MG/L	
Total dissolved solids (tds)	MW-16	06/16/2009		85	MG/L	
Total dissolved solids (tds)	MW-16	09/09/2009		89	MG/L	
Total dissolved solids (tds)	MW-16	12/03/2009		97	MG/L	
Total dissolved solids (tds)	MW-16	03/25/2010		83	MG/L	
Total dissolved solids (tds)	MW-16	06/24/2010		95	MG/L	
Total dissolved solids (tds)	MW-16	09/24/2010		120	MG/L	
Total dissolved solids (tds)	MW-16	12/09/2010		100	MG/L	
Total dissolved solids (tds)	MW-16	03/30/2011		91	MG/L	
Total dissolved solids (tds)	MW-16	06/07/2011		94	MG/L	
Total dissolved solids (tds)	MW-16	09/27/2011		100	MG/L	
Total dissolved solids (tds)	MW-16	12/13/2011		93	MG/L	
Total dissolved solids (tds)	MW-16	03/21/2012		71	MG/L	
Total dissolved solids (tds)	MW-16	06/08/2012		95	MG/L	
Total dissolved solids (tds)	MW-16	09/27/2012		87	MG/L	
Total dissolved solids (tds)	MW-16	12/04/2012		100	MG/L	
Total dissolved solids (tds)	MW-16	03/12/2013		100	MG/L	
Total dissolved solids (tds)	MW-16	06/04/2013		68	MG/L	
Total dissolved solids (tds)	MW-16	09/05/2013		100	MG/L	
Total dissolved solids (tds)	MW-16	12/16/2013		92	MG/L	
Total dissolved solids (tds)	MW-16	03/05/2014		82	MG/L	
Total dissolved solids (tds)	MW-16	06/02/2014		79	MG/L	
Total dissolved solids (tds)	MW-16	09/22/2014		93	MG/L	
Total dissolved solids (tds)	MW-16	11/18/2014		100	MG/L	
Total dissolved solids (tds)	MW-16	02/23/2015		80	MG/L	
Total dissolved solids (tds)	MW-16	05/20/2015		99	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Total dissolved solids (tds)	MW-16	08/26/2015		93	MG/L	
Total dissolved solids (tds)	MW-16	11/11/2015		99	MG/L	
Total dissolved solids (tds)	MW-16	02/24/2016		79	MG/L	
Total dissolved solids (tds)	MW-16	05/16/2016		83	MG/L	
Total dissolved solids (tds)	MW-16	08/31/2016		93	MG/L	
Total dissolved solids (tds)	MW-16	11/14/2016		86	MG/L	
Total dissolved solids (tds)	MW-16	02/22/2017		80	MG/L	
Total dissolved solids (tds)	MW-16	05/24/2017		93	MG/L	
Total dissolved solids (tds)	MW-16	08/30/2017		85	MG/L	
Total dissolved solids (tds)	MW-16	11/13/2017		80	MG/L	
Total dissolved solids (tds)	MW-35	03/22/2005		100	MG/L	
Total dissolved solids (tds)	MW-35	06/14/2005		88	MG/L	
Total dissolved solids (tds)	MW-35	09/27/2005		123	MG/L	
Total dissolved solids (tds)	MW-35	12/15/2005		87	MG/L	
Total dissolved solids (tds)	MW-35	03/28/2006		91	MG/L	
Total dissolved solids (tds)	MW-35	06/21/2006		110	MG/L	
Total dissolved solids (tds)	MW-35	09/26/2006		110	MG/L	
Total dissolved solids (tds)	MW-35	12/12/2006		90	MG/L	
Total dissolved solids (tds)	MW-35	03/27/2007		93	MG/L	
Total dissolved solids (tds)	MW-35	06/20/2007		110	MG/L	
Total dissolved solids (tds)	MW-35	09/18/2007		90	MG/L	
Total dissolved solids (tds)	MW-35	12/20/2007		120	MG/L	
Total dissolved solids (tds)	MW-35	03/25/2008		76	MG/L	
Total dissolved solids (tds)	MW-35	06/18/2008		93	MG/L	
Total dissolved solids (tds)	MW-35	09/18/2008		92	MG/L	
Total dissolved solids (tds)	MW-35	12/19/2008		93	MG/L	
Total dissolved solids (tds)	MW-35	03/24/2009		84	MG/L	
Total dissolved solids (tds)	MW-35	06/16/2009		95	MG/L	
Total dissolved solids (tds)	MW-35	09/10/2009		83	MG/L	
Total dissolved solids (tds)	MW-35	12/03/2009		85	MG/L	
Total dissolved solids (tds)	MW-35	03/25/2010		96	MG/L	
Total dissolved solids (tds)	MW-35	06/23/2010		100	MG/L	
Total dissolved solids (tds)	MW-35	09/23/2010		86	MG/L	
Total dissolved solids (tds)	MW-35	12/09/2010		97	MG/L	
Total dissolved solids (tds)	MW-35	03/30/2011		91	MG/L	
Total dissolved solids (tds)	MW-35	06/06/2011		96	MG/L	
Total dissolved solids (tds)	MW-35	09/26/2011		100	MG/L	
Total dissolved solids (tds)	MW-35	12/13/2011		95	MG/L	
Total dissolved solids (tds)	MW-35	03/21/2012		85	MG/L	
Total dissolved solids (tds)	MW-35	06/06/2012		120	MG/L	
Total dissolved solids (tds)	MW-35	09/26/2012		110	MG/L	
Total dissolved solids (tds)	MW-35	12/04/2012		100	MG/L	
Total dissolved solids (tds)	MW-35	03/13/2013		96	MG/L	
Total dissolved solids (tds)	MW-35	06/06/2013		90	MG/L	
Total dissolved solids (tds)	MW-35	09/05/2013		100	MG/L	
Total dissolved solids (tds)	MW-35	12/16/2013		95	MG/L	
Total dissolved solids (tds)	MW-35	03/04/2014		94	MG/L	
Total dissolved solids (tds)	MW-35	06/02/2014		92	MG/L	
Total dissolved solids (tds)	MW-35	09/22/2014		99	MG/L	
Total dissolved solids (tds)	MW-35	11/17/2014		100	MG/L	
Total dissolved solids (tds)	MW-35	02/25/2015		93	MG/L	
Total dissolved solids (tds)	MW-35	05/19/2015		110	MG/L	
Total dissolved solids (tds)	MW-35	08/26/2015		99	MG/L	
Total dissolved solids (tds)	MW-35	11/10/2015		98	MG/L	
Total dissolved solids (tds)	MW-35	02/22/2016		93	MG/L	
Total dissolved solids (tds)	MW-35	05/16/2016		100	MG/L	
Total dissolved solids (tds)	MW-35	08/31/2016		95	MG/L	
Total dissolved solids (tds)	MW-35	11/15/2016		120	MG/L	
Total dissolved solids (tds)	MW-35	02/22/2017		100	MG/L	
Total dissolved solids (tds)	MW-35	05/24/2017		110	MG/L	
Total dissolved solids (tds)	MW-35	08/30/2017		99	MG/L	
Total dissolved solids (tds)	MW-35	11/15/2017		100	MG/L	
Total organic carbon (toc)	MW-13A	03/22/2005	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	06/15/2005	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	09/27/2005	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	12/15/2005	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	03/28/2006	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	06/21/2006		2.2	MG/L	
Total organic carbon (toc)	MW-13A	09/26/2006		6	MG/L	
Total organic carbon (toc)	MW-13A	12/13/2006	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	03/27/2007	ND	1	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Total organic carbon (toc)	MW-13A	06/19/2007	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	09/19/2007	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	12/19/2007	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	03/25/2008	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	06/18/2008	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	09/17/2008	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	12/17/2008		1	MG/L	
Total organic carbon (toc)	MW-13A	03/24/2009	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	06/17/2009	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	09/10/2009	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	12/03/2009	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	03/25/2010	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	06/23/2010	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	09/23/2010	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	12/08/2010	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	03/30/2011	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	06/06/2011	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	09/27/2011	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	12/14/2011	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	03/21/2012	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	06/08/2012	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	09/26/2012	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	12/03/2012	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	03/11/2013	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	06/05/2013	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	12/03/2013	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	03/04/2014	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	06/02/2014	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	09/22/2014	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	11/17/2014	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	05/19/2015	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	02/22/2016	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	05/16/2016	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	08/31/2016	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	11/14/2016	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	02/22/2017	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	05/24/2017	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	08/30/2017	ND	1	MG/L	
Total organic carbon (toc)	MW-13A	11/13/2017	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	03/22/2005	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	06/15/2005	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	09/27/2005	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	12/15/2005	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	03/29/2006	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	06/21/2006	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	09/26/2006		4.8	MG/L	
Total organic carbon (toc)	MW-13B	12/13/2006	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	03/27/2007	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	06/19/2007	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	09/18/2007	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	12/19/2007	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	03/25/2008	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	06/18/2008	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	09/17/2008	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	12/16/2008	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	03/24/2009	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	06/17/2009	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	09/10/2009	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	12/03/2009	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	03/25/2010	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	06/23/2010	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	09/23/2010	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	12/08/2010	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	03/30/2011	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	06/06/2011	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	09/27/2011	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	12/14/2011	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	03/21/2012	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	06/08/2012	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	09/26/2012	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	12/03/2012	ND	1	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Total organic carbon (toc)	MW-13B	03/11/2013	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	06/05/2013	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	12/03/2013	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	03/04/2014	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	06/02/2014	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	09/22/2014	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	11/17/2014	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	05/19/2015	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	02/22/2016	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	05/16/2016	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	08/31/2016	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	11/14/2016	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	02/22/2017	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	05/24/2017	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	08/30/2017	ND	1	MG/L	
Total organic carbon (toc)	MW-13B	11/13/2017	ND	1	MG/L	
Total organic carbon (toc)	MW-16	03/24/2009	ND	1	MG/L	
Total organic carbon (toc)	MW-16	06/16/2009	ND	1	MG/L	
Total organic carbon (toc)	MW-16	09/09/2009	ND	1	MG/L	
Total organic carbon (toc)	MW-16	12/03/2009	ND	1	MG/L	
Total organic carbon (toc)	MW-16	03/25/2010	ND	1	MG/L	
Total organic carbon (toc)	MW-16	06/24/2010	ND	1	MG/L	
Total organic carbon (toc)	MW-16	09/24/2010	ND	1	MG/L	
Total organic carbon (toc)	MW-16	12/09/2010	ND	1	MG/L	
Total organic carbon (toc)	MW-16	03/30/2011	ND	1	MG/L	
Total organic carbon (toc)	MW-16	06/07/2011	ND	1	MG/L	
Total organic carbon (toc)	MW-16	09/27/2011	ND	1	MG/L	
Total organic carbon (toc)	MW-16	12/13/2011	ND	1	MG/L	
Total organic carbon (toc)	MW-16	03/21/2012	ND	1	MG/L	
Total organic carbon (toc)	MW-16	06/08/2012	ND	1	MG/L	
Total organic carbon (toc)	MW-16	09/27/2012	ND	1	MG/L	
Total organic carbon (toc)	MW-16	12/04/2012	ND	1	MG/L	
Total organic carbon (toc)	MW-16	03/12/2013	ND	1	MG/L	
Total organic carbon (toc)	MW-16	06/04/2013	ND	1	MG/L	
Total organic carbon (toc)	MW-16	09/05/2013	ND	1	MG/L	
Total organic carbon (toc)	MW-16	12/16/2013	ND	1	MG/L	
Total organic carbon (toc)	MW-16	03/05/2014	ND	1	MG/L	
Total organic carbon (toc)	MW-16	06/02/2014	ND	1	MG/L	
Total organic carbon (toc)	MW-16	09/22/2014	ND	1	MG/L	
Total organic carbon (toc)	MW-16	11/18/2014	ND	1	MG/L	
Total organic carbon (toc)	MW-16	05/20/2015	ND	1	MG/L	
Total organic carbon (toc)	MW-16	02/24/2016	ND	1	MG/L	
Total organic carbon (toc)	MW-16	05/16/2016	ND	1	MG/L	
Total organic carbon (toc)	MW-16	08/31/2016	ND	1	MG/L	
Total organic carbon (toc)	MW-16	11/14/2016	ND	1	MG/L	
Total organic carbon (toc)	MW-16	02/22/2017	ND	1	MG/L	
Total organic carbon (toc)	MW-16	05/24/2017	ND	1	MG/L	
Total organic carbon (toc)	MW-16	08/30/2017	ND	1	MG/L	
Total organic carbon (toc)	MW-16	11/13/2017	ND	1	MG/L	
Total organic carbon (toc)	MW-35	03/22/2005	ND	1	MG/L	
Total organic carbon (toc)	MW-35	06/14/2005	ND	1	MG/L	
Total organic carbon (toc)	MW-35	09/27/2005	ND	1	MG/L	
Total organic carbon (toc)	MW-35	12/15/2005	ND	1	MG/L	
Total organic carbon (toc)	MW-35	03/28/2006	ND	1	MG/L	
Total organic carbon (toc)	MW-35	06/21/2006		2.1	MG/L	
Total organic carbon (toc)	MW-35	09/26/2006		4.3	MG/L	
Total organic carbon (toc)	MW-35	12/12/2006	ND	1	MG/L	
Total organic carbon (toc)	MW-35	03/27/2007	ND	1	MG/L	
Total organic carbon (toc)	MW-35	06/20/2007	ND	1	MG/L	
Total organic carbon (toc)	MW-35	09/18/2007	ND	1	MG/L	
Total organic carbon (toc)	MW-35	12/20/2007	ND	1	MG/L	
Total organic carbon (toc)	MW-35	03/25/2008	ND	1	MG/L	
Total organic carbon (toc)	MW-35	06/18/2008	ND	1	MG/L	
Total organic carbon (toc)	MW-35	09/18/2008	ND	1	MG/L	
Total organic carbon (toc)	MW-35	12/19/2008		1	MG/L	
Total organic carbon (toc)	MW-35	03/24/2009	ND	1	MG/L	
Total organic carbon (toc)	MW-35	06/16/2009	ND	1	MG/L	
Total organic carbon (toc)	MW-35	09/10/2009	ND	1	MG/L	
Total organic carbon (toc)	MW-35	12/03/2009	ND	1	MG/L	
Total organic carbon (toc)	MW-35	03/25/2010	ND	1	MG/L	
Total organic carbon (toc)	MW-35	06/23/2010	ND	1	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Total organic carbon (toc)	MW-35	09/23/2010	ND	1	MG/L	
Total organic carbon (toc)	MW-35	12/09/2010	ND	1	MG/L	
Total organic carbon (toc)	MW-35	03/30/2011	ND	1	MG/L	
Total organic carbon (toc)	MW-35	06/06/2011	ND	1	MG/L	
Total organic carbon (toc)	MW-35	09/26/2011	ND	1	MG/L	
Total organic carbon (toc)	MW-35	12/13/2011	ND	1	MG/L	
Total organic carbon (toc)	MW-35	03/21/2012	ND	1	MG/L	
Total organic carbon (toc)	MW-35	06/06/2012	ND	1	MG/L	
Total organic carbon (toc)	MW-35	09/26/2012	ND	1	MG/L	
Total organic carbon (toc)	MW-35	12/04/2012	ND	1	MG/L	
Total organic carbon (toc)	MW-35	03/13/2013	ND	1	MG/L	
Total organic carbon (toc)	MW-35	06/06/2013	ND	1	MG/L	
Total organic carbon (toc)	MW-35	09/05/2013	ND	1	MG/L	
Total organic carbon (toc)	MW-35	12/16/2013	ND	1	MG/L	
Total organic carbon (toc)	MW-35	03/04/2014	ND	1	MG/L	
Total organic carbon (toc)	MW-35	06/02/2014	ND	1	MG/L	
Total organic carbon (toc)	MW-35	09/22/2014	ND	1	MG/L	
Total organic carbon (toc)	MW-35	11/17/2014	ND	1	MG/L	
Total organic carbon (toc)	MW-35	05/19/2015	ND	1	MG/L	
Total organic carbon (toc)	MW-35	02/22/2016	ND	1	MG/L	
Total organic carbon (toc)	MW-35	05/16/2016	ND	1	MG/L	
Total organic carbon (toc)	MW-35	08/31/2016	ND	1	MG/L	
Total organic carbon (toc)	MW-35	11/15/2016	ND	1	MG/L	
Total organic carbon (toc)	MW-35	02/22/2017	ND	1	MG/L	
Total organic carbon (toc)	MW-35	05/24/2017	ND	1	MG/L	
Total organic carbon (toc)	MW-35	08/30/2017	ND	1	MG/L	
Total organic carbon (toc)	MW-35	11/15/2017	ND	1	MG/L	
Vanadium, total	MW-13A	12/03/2013		0.0042	MG/L	
Vanadium, total	MW-13A	03/04/2014		0.0042	MG/L	
Vanadium, total	MW-13A	06/02/2014		0.0048	MG/L	
Vanadium, total	MW-13A	09/22/2014		0.0039	MG/L	
Vanadium, total	MW-13A	11/17/2014		0.0042	MG/L	
Vanadium, total	MW-13A	02/23/2015		0.0042	MG/L	
Vanadium, total	MW-13A	05/19/2015		0.0034	MG/L	
Vanadium, total	MW-13A	08/26/2015		0.0039	MG/L	
Vanadium, total	MW-13A	11/10/2015		0.004	MG/L	
Vanadium, total	MW-13A	02/22/2016		0.004	MG/L	
Vanadium, total	MW-13A	05/16/2016		0.0039	MG/L	
Vanadium, total	MW-13A	08/31/2016		0.0041	MG/L	
Vanadium, total	MW-13A	11/14/2016		0.0039	MG/L	
Vanadium, total	MW-13A	02/22/2017		0.0043	MG/L	
Vanadium, total	MW-13A	05/24/2017		0.0033	MG/L	
Vanadium, total	MW-13A	08/30/2017		0.0039	MG/L	
Vanadium, total	MW-13A	11/13/2017		0.0038	MG/L	
Vanadium, total	MW-13B	12/03/2013		0.0058	MG/L	
Vanadium, total	MW-13B	03/04/2014		0.0057	MG/L	
Vanadium, total	MW-13B	06/02/2014		0.0057	MG/L	
Vanadium, total	MW-13B	09/22/2014		0.005	MG/L	
Vanadium, total	MW-13B	11/17/2014		0.0055	MG/L	
Vanadium, total	MW-13B	02/23/2015		0.0054	MG/L	
Vanadium, total	MW-13B	05/19/2015		0.0054	MG/L	
Vanadium, total	MW-13B	08/26/2015		0.0056	MG/L	
Vanadium, total	MW-13B	11/10/2015		0.0058	MG/L	
Vanadium, total	MW-13B	02/22/2016		0.0058	MG/L	
Vanadium, total	MW-13B	05/16/2016		0.0056	MG/L	
Vanadium, total	MW-13B	08/31/2016		0.0054	MG/L	
Vanadium, total	MW-13B	11/14/2016		0.0061	MG/L	
Vanadium, total	MW-13B	02/22/2017		0.0058	MG/L	
Vanadium, total	MW-13B	05/24/2017		0.0044	MG/L	
Vanadium, total	MW-13B	08/30/2017		0.0054	MG/L	
Vanadium, total	MW-13B	11/13/2017		0.0051	MG/L	
Vanadium, total	MW-16	09/05/2013		0.0034	MG/L	
Vanadium, total	MW-16	12/16/2013		0.0039	MG/L	
Vanadium, total	MW-16	03/05/2014		0.0042	MG/L	
Vanadium, total	MW-16	06/02/2014		0.0042	MG/L	
Vanadium, total	MW-16	09/22/2014		0.0042	MG/L	
Vanadium, total	MW-16	11/18/2014		0.004	MG/L	
Vanadium, total	MW-16	02/23/2015		0.0051	MG/L	
Vanadium, total	MW-16	05/20/2015		0.0042	MG/L	
Vanadium, total	MW-16	08/26/2015		0.0032	MG/L	
Vanadium, total	MW-16	11/11/2015		0.0034	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

Constituent	Well	Date	ND	Result	Unit	Outlier
Vanadium, total	MW-16	02/24/2016		0.0043	MG/L	
Vanadium, total	MW-16	05/16/2016		0.0034	MG/L	
Vanadium, total	MW-16	08/31/2016		0.0042	MG/L	
Vanadium, total	MW-16	11/14/2016		0.0049	MG/L	
Vanadium, total	MW-16	02/22/2017		0.0047	MG/L	
Vanadium, total	MW-16	05/24/2017		0.003	MG/L	
Vanadium, total	MW-16	08/30/2017		0.0033	MG/L	
Vanadium, total	MW-16	11/13/2017		0.0031	MG/L	
Vanadium, total	MW-35	09/05/2013		0.0042	MG/L	
Vanadium, total	MW-35	12/16/2013		0.0046	MG/L	
Vanadium, total	MW-35	03/04/2014		0.0047	MG/L	
Vanadium, total	MW-35	06/02/2014		0.0042	MG/L	
Vanadium, total	MW-35	09/22/2014		0.0044	MG/L	
Vanadium, total	MW-35	11/17/2014		0.0042	MG/L	
Vanadium, total	MW-35	02/25/2015		0.0048	MG/L	
Vanadium, total	MW-35	05/19/2015		0.0042	MG/L	
Vanadium, total	MW-35	08/26/2015		0.0041	MG/L	
Vanadium, total	MW-35	11/10/2015		0.0043	MG/L	
Vanadium, total	MW-35	02/22/2016		0.0045	MG/L	
Vanadium, total	MW-35	05/16/2016		0.0046	MG/L	
Vanadium, total	MW-35	08/31/2016		0.0046	MG/L	
Vanadium, total	MW-35	11/15/2016		0.0043	MG/L	
Vanadium, total	MW-35	02/22/2017		0.005	MG/L	
Vanadium, total	MW-35	05/24/2017		0.0034	MG/L	
Vanadium, total	MW-35	08/30/2017		0.0042	MG/L	
Vanadium, total	MW-35	11/15/2017		0.004	MG/L	
Zinc, total	MW-13A	12/03/2013	ND	0.005	MG/L	
Zinc, total	MW-13A	03/04/2014	ND	0.005	MG/L	
Zinc, total	MW-13A	06/02/2014	ND	0.005	MG/L	
Zinc, total	MW-13A	09/22/2014	ND	0.005	MG/L	
Zinc, total	MW-13A	11/17/2014	ND	0.005	MG/L	
Zinc, total	MW-13A	02/23/2015	ND	0.005	MG/L	
Zinc, total	MW-13A	05/19/2015	ND	0.005	MG/L	
Zinc, total	MW-13A	08/26/2015	ND	0.005	MG/L	
Zinc, total	MW-13A	11/10/2015	ND	0.005	MG/L	
Zinc, total	MW-13A	02/22/2016	ND	0.005	MG/L	
Zinc, total	MW-13A	05/16/2016	ND	0.005	MG/L	
Zinc, total	MW-13A	08/31/2016	ND	0.005	MG/L	
Zinc, total	MW-13A	11/14/2016	ND	0.005	MG/L	
Zinc, total	MW-13A	02/22/2017	ND	0.005	MG/L	
Zinc, total	MW-13A	05/24/2017	ND	0.005	MG/L	
Zinc, total	MW-13A	08/30/2017	ND	0.005	MG/L	
Zinc, total	MW-13A	11/13/2017	ND	0.005	MG/L	
Zinc, total	MW-13B	12/03/2013	ND	0.005	MG/L	
Zinc, total	MW-13B	03/04/2014	ND	0.005	MG/L	
Zinc, total	MW-13B	06/02/2014	ND	0.005	MG/L	
Zinc, total	MW-13B	09/22/2014	ND	0.005	MG/L	
Zinc, total	MW-13B	11/17/2014	ND	0.005	MG/L	
Zinc, total	MW-13B	02/23/2015	ND	0.005	MG/L	
Zinc, total	MW-13B	05/19/2015	ND	0.005	MG/L	
Zinc, total	MW-13B	08/26/2015	ND	0.005	MG/L	
Zinc, total	MW-13B	11/10/2015	ND	0.005	MG/L	
Zinc, total	MW-13B	02/22/2016	ND	0.005	MG/L	
Zinc, total	MW-13B	05/16/2016	ND	0.005	MG/L	
Zinc, total	MW-13B	08/31/2016	ND	0.005	MG/L	
Zinc, total	MW-13B	11/14/2016	ND	0.005	MG/L	
Zinc, total	MW-13B	02/22/2017	ND	0.005	MG/L	
Zinc, total	MW-13B	05/24/2017	ND	0.005	MG/L	
Zinc, total	MW-13B	08/30/2017	ND	0.005	MG/L	
Zinc, total	MW-13B	11/13/2017	ND	0.005	MG/L	
Zinc, total	MW-16	09/05/2013	ND	0.005	MG/L	
Zinc, total	MW-16	12/16/2013	ND	0.005	MG/L	
Zinc, total	MW-16	03/05/2014	ND	0.005	MG/L	
Zinc, total	MW-16	06/02/2014	ND	0.005	MG/L	
Zinc, total	MW-16	09/22/2014	ND	0.005	MG/L	
Zinc, total	MW-16	11/18/2014	ND	0.005	MG/L	
Zinc, total	MW-16	02/23/2015	ND	0.005	MG/L	
Zinc, total	MW-16	05/20/2015	ND	0.005	MG/L	
Zinc, total	MW-16	08/26/2015	ND	0.005	MG/L	
Zinc, total	MW-16	11/11/2015	ND	0.005	MG/L	
Zinc, total	MW-16	02/24/2016	ND	0.005	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit

**TABLE 2-3  
Upgradient Data**

<b>Constituent</b>	<b>Well</b>	<b>Date</b>	<b>ND</b>	<b>Result</b>	<b>Unit</b>	<b>Outlier</b>
Zinc, total	MW-16	05/16/2016	ND	0.005	MG/L	
Zinc, total	MW-16	08/31/2016	ND	0.005	MG/L	
Zinc, total	MW-16	11/14/2016		0.0056	MG/L	
Zinc, total	MW-16	02/22/2017	ND	0.005	MG/L	
Zinc, total	MW-16	05/24/2017	ND	0.005	MG/L	
Zinc, total	MW-16	08/30/2017	ND	0.005	MG/L	
Zinc, total	MW-16	11/13/2017	ND	0.005	MG/L	
Zinc, total	MW-35	09/05/2013	ND	0.005	MG/L	
Zinc, total	MW-35	12/16/2013	ND	0.005	MG/L	
Zinc, total	MW-35	03/04/2014	ND	0.005	MG/L	
Zinc, total	MW-35	06/02/2014	ND	0.005	MG/L	
Zinc, total	MW-35	09/22/2014	ND	0.005	MG/L	
Zinc, total	MW-35	11/17/2014	ND	0.005	MG/L	
Zinc, total	MW-35	02/25/2015	ND	0.005	MG/L	
Zinc, total	MW-35	05/19/2015	ND	0.005	MG/L	
Zinc, total	MW-35	08/26/2015	ND	0.005	MG/L	
Zinc, total	MW-35	11/10/2015	ND	0.005	MG/L	
Zinc, total	MW-35	02/22/2016	ND	0.005	MG/L	
Zinc, total	MW-35	05/16/2016	ND	0.005	MG/L	
Zinc, total	MW-35	08/31/2016	ND	0.005	MG/L	
Zinc, total	MW-35	11/15/2016	ND	0.005	MG/L	
Zinc, total	MW-35	02/22/2017	ND	0.005	MG/L	
Zinc, total	MW-35	05/24/2017	ND	0.005	MG/L	
Zinc, total	MW-35	08/30/2017	ND	0.005	MG/L	
Zinc, total	MW-35	11/15/2017	ND	0.005	MG/L	

\* = outlier for that constituent/well  
 ND = not detected; result = detection limit



**TABLE 2-4**  
**Shapiro Wilk Test of Normality for Multiple Groups**

Constituent	N (Detects)	Detect Freq	G raw	G log	Critical Value	Limit Type
Alkalinity, bicarbonate (as caco3)	186	1	3.229	4.259	2.326	nonparametric
Alkalinity, total (as caco3)	190	1	3.186	4.058	2.326	nonparametric
Ammonia (as n)	72	0.387	8.003	7.564	2.326	nonparametric
Antimony, total	3	0.043				nonparametric
Arsenic, total	77	1	1.718	1.54	2.326	normal
Barium, total	70	1	0.896	0.895	2.326	normal
Beryllium, total	0	0				nonparametric
Cadmium, total	0	0				nonparametric
Calcium, dissolved	190	1	6.788	6.51	2.326	nonparametric
Chloride	186	0.979	5.945	4.97	2.326	nonparametric
Chromium, total	31	0.443	0.044	0.043	2.326	nonparametric
Cobalt, total	0	0				nonparametric
Copper, total	1	0.014				nonparametric
Iron, total	9	0.129	0.523	0.358	2.326	nonparametric
Lead, total	1	0.014				nonparametric
Magnesium, dissolved	190	1	1.968	1.261	2.326	normal
Manganese, total	18	0.261	2.409	2.387	2.326	nonparametric
Nickel, total	1	0.014				nonparametric
Nitrate (as n)	178	1	14.515	13.006	2.326	nonparametric
pH	181	1	1.089	1.562	2.326	normal
Potassium, dissolved	14	0.074	2.153	2.019	2.326	nonparametric
Selenium, total	0	0				nonparametric
Silver, total	0	0				nonparametric
Sodium, dissolved	190	1	6.204	5.212	2.326	nonparametric
Specific conductivity	183	1	7.736	7.948	2.326	nonparametric
Sulfate	189	0.995	6.018	5.053	2.326	nonparametric
Temperature	183	1	7.907	7.382	2.326	nonparametric
Thallium, total	0	0				nonparametric
Total dissolved solids (tds)	190	1	6.216	4.96	2.326	nonparametric
Total organic carbon (toc)	7	0.039	0.146	1.287	2.326	nonparametric
Vanadium, total	70	1	2.219	2.221	2.326	normal
Zinc, total	1	0.014				nonparametric

Fit to distribution is confirmed if  $G < \text{critical value}$ .

If detection frequency is  $< 50\%$  nonparametric or Poisson limit is use

Data in this table are based on pooled data shown in Table 2-3, outliers excluded

**TABLE 2-5**  
**COMPARISON OF UPDATED (2018) PREDICTION LIMITS†**  
**TO PREVIOUS YEAR (2017) PREDICTION LIMITS**  
**Olympic View Sanitary Landfill**

Constituent	2017 Pred. Limit	unit	Distributional Assumption	Constituent	2018 Pred. Limit	unit	Distributional Assumption
Alkalinity, bicarbonate (as CaCO3)	96	mg/L	nonparametric	Alkalinity, bicarbonate (as CaCO3)	96	mg/L	nonparametric
Alkalinity, total (as CaCO3)	96	mg/L	nonparametric	Alkalinity, total (as CaCO3)	96	mg/L	nonparametric
Ammonia (as N)	0.30	mg/L	nonparametric	Ammonia (as N)	0.30	mg/L	nonparametric
Antimony, total	0.0013	mg/L	nonparametric	Antimony, total	0.0013	mg/L	nonparametric
Arsenic, total	0.430	ug/L	nonparametric	Arsenic, total	0.466	ug/L	normal
Barium, total	0.0045	mg/L	normal	Barium, total	0.0044	mg/L	normal
Beryllium, total	Current RL*	mg/L	nonparametric	Beryllium, total	Current RL*	mg/L	nonparametric
Cadmium, total	Current RL*	mg/L	nonparametric	Cadmium, total	Current RL*	mg/L	nonparametric
Calcium, dissolved	18.0	mg/L	nonparametric	Calcium, dissolved	18.0	mg/L	nonparametric
Chloride	4.4	mg/L	nonparametric	Chloride	4.4	mg/L	nonparametric
Chromium, total	0.0092	mg/L	nonparametric	Chromium, total	0.0092	mg/L	nonparametric
Cobalt, total	Current RL*	mg/L	nonparametric	Cobalt, total	Current RL*	mg/L	nonparametric
Copper, total	0.0021	mg/L	nonparametric	Copper, total	0.0021	mg/L	nonparametric
Iron, total	0.31	mg/L	nonparametric	Iron, total	0.31	mg/L	nonparametric
Lead, total	0.0014	mg/L	nonparametric	Lead, total	0.0014	mg/L	nonparametric
Magnesium, dissolved	11.2	mg/L	normal	Magnesium, dissolved	11.2	mg/L	normal
Manganese, total	0.062	mg/L	nonparametric	Manganese, total	0.032	mg/L	nonparametric
Nickel, total	0.0041	mg/L	nonparametric	Nickel, total	0.0041	mg/L	nonparametric
Nitrate (as N)	1.8	mg/L	nonparametric	Nitrate (as N)	1.8	mg/L	nonparametric
pH	5.81 - 8.23	units	normal	pH	5.84 - 8.20	units	normal
Potassium, dissolved	1.2	mg/L	nonparametric	Potassium, dissolved	1.4	mg/L	nonparametric
Selenium, total	Current RL*	mg/L	nonparametric	Selenium, total	Current RL*	mg/L	nonparametric
Silver, total	Current RL*	mg/L	nonparametric	Silver, total	Current RL*	mg/L	nonparametric
Sodium, dissolved	6.3	mg/L	nonparametric	Sodium, dissolved	7.7	mg/L	nonparametric
Specific conductivity	0.18	mS/cm	nonparametric	Specific conductivity	0.18	mS/cm	nonparametric
Sulfate	9.9	mg/L	nonparametric	Sulfate	9.9	mg/L	nonparametric
Temperature	14.32	deg C	nonparametric	Temperature	14.32	deg C	nonparametric
Thallium, total	Current RL*	mg/L	nonparametric	Thallium, total	Current RL*	mg/L	nonparametric
Total dissolved solids (tds)	175	mg/L	nonparametric	Total dissolved solids (tds)	175	mg/L	nonparametric
Total organic carbon (toc)	6.0	mg/L	nonparametric	Total organic carbon (toc)	6.0	mg/L	nonparametric
Vanadium, total	0.0063	mg/L	normal	Vanadium, total	0.0062	mg/L	normal
Zinc, total	0.0056	mg/L	nonparametric	Zinc, total	0.0056	mg/L	nonparametric

† Note that beginning in 2016, Prediction Limits for Trace Metals became based on "total" analyses vs "dissolved" previously

\* for background data sets with all non-detected values, a nonparametric prediction limit is the current constituent-specific laboratory reporting limit (RL)

mg/L = milligrams per liter

ug/L = micrograms per liter

mS/cm = milliSiemens per centimeter

deg C = degrees Celsius

### **3. Annual UCL Calculations using Preliminary Groundwater Cleanup Goals**

- 2017 Annual Preliminary Groundwater Cleanup Goals Statistical Evaluation Summary (Table 3-1)

**TABLE 3-1: 2017 Annual Groundwater Cleanup Level Statistical Evaluation Summary**

**Olympic View Sanitary Landfill**

**Statistical Methodology:** calculation of 95% UCL of mean per MTCASat

**Data Input (general):** 3-year "moving window", updated annually

**Data Input (specific):** January 1, 2015 through December 31, 2017

**Wells Evaluated:** (1) Compliance -- MW-15R, MW-34A, MW-34C, MW-39, MW-42, MW-43; (2) Downgradient -- MW-29A, MW-32, MW-33A, MW-33C, MW-36A

Monitoring Well	Monitoring Well Type	Corrective Action Monitoring Parameter	N <sup>[1]</sup>	% Detect	Max <sup>[2]</sup>	95% UCL of Mean <sup>[3]</sup>	Units <sup>[4]</sup>	Note	Groundwater Cleanup Level <sup>[5]</sup>	Units <sup>[4]</sup>	Does 95% UCL Exceed Cleanup Level?	Significant Trend? <sup>[6]</sup>
MW-15R	Compliance	1,1-Dichloroethane	12	0%	0.38 (ND)	0.38	ug/L	B	50	ug/L	No	No
MW-15R	Compliance	1,4-Dichlorobenzene	12	0%	0.84 (ND)	0.84	ug/L	B	2.0	ug/L	No	No
MW-15R	Compliance	Arsenic, total	12	100%	0.258	0.23	ug/L	LN	0.462	ug/L	No	No
MW-15R	Compliance	Iron, total	11 <sup>[7]</sup>	9.1%	0.11	0.11	mg/L	A	0.30	mg/L	No	No
MW-15R	Compliance	Manganese, total	12	100%	0.021	0.01	mg/L	LN	0.05	mg/L	No	No
MW-15R	Compliance	cis-1,2-dichloroethene	12	0%	0.81 (ND)	0.81	ug/L	B	35	ug/L	No	No
MW-15R	Compliance	Ethyl ether	12	0%	0.72 (ND)	0.72	ug/L	B	50	ug/L	No	No
MW-15R	Compliance	Trichloroethene	12	0%	0.46 (ND)	0.46	ug/L	B	1.0	ug/L	No	No
MW-15R	Compliance	Vinyl Chloride	12	0%	0.02 (ND)	0.02	ug/L	B	0.20	ug/L	No	No
MW-15R	Compliance	Ammonia as N	12	0%	0.03 (ND)	0.03	mg/L	B	0.19	mg/L	No	No
MW-34A	Compliance	1,1-Dichloroethane	12	0%	0.38 (ND)	0.38	ug/L	B	50	ug/L	No	No
MW-34A	Compliance	1,4-Dichlorobenzene	12	0%	0.84 (ND)	0.84	ug/L	B	2.0	ug/L	No	No
MW-34A	Compliance	Arsenic, total	12	100%	0.478	0.452	ug/L	LN	0.462	ug/L	No	No
MW-34A	Compliance	Iron, total	12	8.3%	0.06	0.06	mg/L	A	0.30	mg/L	No	No
MW-34A	Compliance	Manganese, total	12	75%	0.0044	0.002	mg/L	LN	0.05	mg/L	No	No
MW-34A	Compliance	cis-1,2-dichloroethene	12	0%	0.81 (ND)	0.81	ug/L	B	35	ug/L	No	No
MW-34A	Compliance	Ethyl ether	12	0%	0.72 (ND)	0.72	ug/L	B	50	ug/L	No	No
MW-34A	Compliance	Trichloroethene	12	0%	0.46 (ND)	0.46	ug/L	B	1.0	ug/L	No	No
MW-34A	Compliance	Vinyl Chloride	12	0%	0.02 (ND)	0.03	ug/L	B	0.20	ug/L	No	No
MW-34A	Compliance	Ammonia as N	12	8.3%	0.035	0.04	mg/L	A	0.19	mg/L	No	No
MW-34C	Compliance	1,1-Dichloroethane	12	0%	0.38 (ND)	0.38	ug/L	B	50	ug/L	No	No
MW-34C	Compliance	1,4-Dichlorobenzene	12	0%	0.84 (ND)	0.84	ug/L	B	2.0	ug/L	No	No
MW-34C	Compliance	Arsenic, total	12	100%	84.6	84.6	ug/L	A**	0.462	ug/L	Yes	No
MW-34C	Compliance	Iron, total	12	100%	100	155	mg/L	LN	0.30	mg/L	Yes	No
MW-34C	Compliance	Manganese, total	12	100%	14	5.5	mg/L	Z	0.05	mg/L	Yes	No
MW-34C	Compliance	cis-1,2-dichloroethene	12	0%	0.81 (ND)	0.81	ug/L	B	35	ug/L	No	No

**TABLE 3-1: 2017 Annual Groundwater Cleanup Level Statistical Evaluation Summary**

**Olympic View Sanitary Landfill**

**Statistical Methodology:** calculation of 95% UCL of mean per MTCASat

**Data Input (general):** 3-year "moving window", updated annually

**Data Input (specific):** January 1, 2015 through December 31, 2017

**Wells Evaluated:** (1) Compliance -- MW-15R, MW-34A, MW-34C, MW-39, MW-42, MW-43; (2) Downgradient -- MW-29A, MW-32, MW-33A, MW-33C, MW-36A

Monitoring Well	Monitoring Well Type	Corrective Action Monitoring Parameter	N <sup>[1]</sup>	% Detect	Max <sup>[2]</sup>	95% UCL of Mean <sup>[3]</sup>	Units <sup>[4]</sup>	Note	Groundwater Cleanup Level <sup>[5]</sup>	Units <sup>[4]</sup>	Does 95% UCL Exceed Cleanup Level?	Significant Trend? <sup>[6]</sup>
MW-34C	Compliance	Ethyl ether	12	0%	0.72 (ND)	0.72	ug/L	B	50	ug/L	No	No
MW-34C	Compliance	Trichloroethene	12	0%	0.46 (ND)	0.46	ug/L	B	1.0	ug/L	No	No
MW-34C	Compliance	Vinyl Chloride	12	100%	0.11	0.09	ug/L	LN	0.20	ug/L	No	Yes (▼)
MW-34C	Compliance	Ammonia as N	12	25%	0.034	0.034	mg/L	A	0.19	mg/L	No	No
MW-39	Compliance	1,1-Dichloroethane	12	0%	0.38 (ND)	0.38	ug/L	B	50	ug/L	No	No
MW-39	Compliance	1,4-Dichlorobenzene	12	0%	0.84 (ND)	0.84	ug/L	B	2.0	ug/L	No	No
MW-39	Compliance	Arsenic, total	12	100%	2.16	1.77	ug/L	Z	0.462	ug/L	Yes	No
MW-39	Compliance	Iron, total	12	100%	40	33.7	mg/L	Z	0.30	mg/L	Yes	No
MW-39	Compliance	Manganese, total	12	100%	0.66	0.46	mg/L	N	0.05	mg/L	Yes	No
MW-39	Compliance	cis-1,2-dichloroethene	12	0%	0.81 (ND)	0.81	ug/L	B	35	ug/L	No	No
MW-39	Compliance	Ethyl ether	12	0%	0.72 (ND)	0.72	ug/L	B	50	ug/L	No	No
MW-39	Compliance	Trichloroethene	12	0%	0.46 (ND)	0.46	ug/L	B	1.0	ug/L	No	No
MW-39	Compliance	Vinyl Chloride	12	0%	0.02 (ND)	0.02	ug/L	B	0.20	ug/L	No	No
MW-39	Compliance	Ammonia as N	12	92%	0.63	0.44	mg/L	Z	0.19	mg/L	Yes	No
MW-42	Compliance	1,1-Dichloroethane	12	0%	0.38 (ND)	0.38	ug/L	B	50	ug/L	No	No
MW-42	Compliance	1,4-Dichlorobenzene	12	0%	0.84 (ND)	0.84	ug/L	B	2.0	ug/L	No	No
MW-42	Compliance	Arsenic, total	12	100%	1.93	1.78	ug/L	LN	0.462	ug/L	Yes	No
MW-42	Compliance	Iron, total	12	100%	27	24.9	mg/L	LN	0.30	mg/L	Yes	No
MW-42	Compliance	Manganese, total	12	100%	4.8	4.5	mg/L	LN	0.05	mg/L	Yes	No
MW-42	Compliance	cis-1,2-dichloroethene	12	0%	0.81 (ND)	0.81	ug/L	B	35	ug/L	No	No
MW-42	Compliance	Ethyl ether	12	0%	0.72 (ND)	0.72	ug/L	B	50	ug/L	No	No
MW-42	Compliance	Trichloroethene	12	8.3%	0.58	0.58	ug/L	A	1.0	ug/L	No	No
MW-42	Compliance	Vinyl Chloride	12	83%	0.12	0.09	ug/L	LN	0.20	ug/L	No	No
MW-42	Compliance	Ammonia as N	12	100%	6.7	5.9	mg/L	LN	0.19	mg/L	Yes	No
MW-43	Compliance	1,1-Dichloroethane	12	0%	0.38 (ND)	0.38	ug/L	B	50	ug/L	No	No
MW-43	Compliance	1,4-Dichlorobenzene	12	0%	0.84 (ND)	0.84	ug/L	B	2.0	ug/L	No	No

**TABLE 3-1: 2017 Annual Groundwater Cleanup Level Statistical Evaluation Summary**

**Olympic View Sanitary Landfill**

**Statistical Methodology:** calculation of 95% UCL of mean per MTCASat

**Data Input (general):** 3-year "moving window", updated annually

**Data Input (specific):** January 1, 2015 through December 31, 2017

**Wells Evaluated:** (1) Compliance -- MW-15R, MW-34A, MW-34C, MW-39, MW-42, MW-43; (2) Downgradient -- MW-29A, MW-32, MW-33A, MW-33C, MW-36A

Monitoring Well	Monitoring Well Type	Corrective Action Monitoring Parameter	N <sup>[1]</sup>	% Detect	Max <sup>[2]</sup>	95% UCL of Mean <sup>[3]</sup>	Units <sup>[4]</sup>	Note	Groundwater Cleanup Level <sup>[5]</sup>	Units <sup>[4]</sup>	Does 95% UCL Exceed Cleanup Level?	Significant Trend? <sup>[6]</sup>
MW-43	Compliance	Arsenic, total	12	17%	0.0562	0.056	ug/L	A	0.462	ug/L	No	No
MW-43	Compliance	Iron, total	12	100%	2.5	1.51	mg/L	LN	0.30	mg/L	Yes	No
MW-43	Compliance	Manganese, total	12	100%	0.12	0.10	mg/L	N	0.05	mg/L	Yes	No
MW-43	Compliance	cis-1,2-dichloroethene	12	0%	0.81 (ND)	0.81	ug/L	B	35	ug/L	No	No
MW-43	Compliance	Ethyl ether	12	0%	0.72 (ND)	0.72	ug/L	B	50	ug/L	No	No
MW-43	Compliance	Trichloroethene	12	0%	0.46 (ND)	0.46	ug/L	B	1.0	ug/L	No	No
MW-43	Compliance	Vinyl Chloride	12	0%	0.02 (ND)	0.02	ug/L	B	0.20	ug/L	No	No
MW-43	Compliance	Ammonia as N	12	67%	0.06	0.05	mg/L	LN	0.19	mg/L	No	Yes (▼)
MW-29A	Downgradient	1,1-Dichloroethane	6	0%	0.38 (ND)	0.38	ug/L	B	50	ug/L	No	No
MW-29A	Downgradient	1,4-Dichlorobenzene	6	0%	0.84 (ND)	0.84	ug/L	B	2.0	ug/L	No	No
MW-29A	Downgradient	Arsenic, total	6	100%	2.13	2.04	ug/L	LN	0.462	ug/L	Yes	No
MW-29A	Downgradient	Iron, total	6	100%	4.6	4.26	mg/L	LN	0.30	mg/L	Yes	No
MW-29A	Downgradient	Manganese, total	6	100%	1.4	1.35	mg/L	Z	0.05	mg/L	Yes	No
MW-29A	Downgradient	cis-1,2-dichloroethene	6	0%	0.81 (ND)	0.81	ug/L	B	35	ug/L	No	No
MW-29A	Downgradient	Ethyl ether	6	0%	0.72 (ND)	0.72	ug/L	B	50	ug/L	No	No
MW-29A	Downgradient	Trichloroethene	6	0%	0.46 (ND)	0.46	ug/L	B	1.0	ug/L	No	No
MW-29A	Downgradient	Vinyl Chloride	6	0%	0.02 (ND)	0.02	ug/L	B	0.20	ug/L	No	No
MW-29A	Downgradient	Ammonia as N	6	100%	0.095	0.08	mg/L	Z	0.19	mg/L	No	Yes (▼)
MW-32	Downgradient	1,1-Dichloroethane	12	0%	0.38 (ND)	0.38	ug/L	B	50	ug/L	No	No
MW-32	Downgradient	1,4-Dichlorobenzene	12	0%	0.84 (ND)	0.84	ug/L	B	2.0	ug/L	No	No
MW-32	Downgradient	Arsenic, total	12	100%	10.7	10.2	ug/L	LN	0.462	ug/L	Yes	No
MW-32	Downgradient	Iron, total	12	100%	0.94	0.75	mg/L	LN	0.30	mg/L	Yes	Yes (▼)
MW-32	Downgradient	Manganese, total	12	100%	2.9	2.3	mg/L	Z	0.05	mg/L	Yes	Yes (▼)
MW-32	Downgradient	cis-1,2-dichloroethene	12	8.3%	0.81 (ND)	0.81	ug/L	A*	35	ug/L	No	No
MW-32	Downgradient	Ethyl ether	11	0%	0.72 (ND)	0.72	ug/L	B	50	ug/L	No	No
MW-32	Downgradient	Trichloroethene	12	42%	0.66	0.66	ug/L	A***	1.0	ug/L	No	No
MW-32	Downgradient	Vinyl Chloride	12	100%	0.46	0.38	ug/L	LN	0.20	ug/L	Yes	Yes (▼)

**TABLE 3-1: 2017 Annual Groundwater Cleanup Level Statistical Evaluation Summary****Olympic View Sanitary Landfill****Statistical Methodology:** calculation of 95% UCL of mean per MTCASat**Data Input (general):** 3-year "moving window", updated annually**Data Input (specific):** January 1, 2015 through December 31, 2017**Wells Evaluated:** (1) Compliance -- MW-15R, MW-34A, MW-34C, MW-39, MW-42, MW-43; (2) Downgradient -- MW-29A, MW-32, MW-33A, MW-33C, MW-36A

Monitoring Well	Monitoring Well Type	Corrective Action Monitoring Parameter	N <sup>[1]</sup>	% Detect	Max <sup>[2]</sup>	95% UCL of Mean <sup>[3]</sup>	Units <sup>[4]</sup>	Note	Groundwater Cleanup Level <sup>[5]</sup>	Units <sup>[4]</sup>	Does 95% UCL Exceed Cleanup Level?	Significant Trend? <sup>[6]</sup>
MW-32	Downgradient	Ammonia as N	11	18%	0.039	0.039	mg/L	A	0.19	mg/L	No	No
MW-33A	Downgradient	1,1-Dichloroethane	6	0%	0.38 (ND)	0.38	ug/L	B	50	ug/L	No	No
MW-33A	Downgradient	1,4-Dichlorobenzene	6	0%	0.84 (ND)	0.84	ug/L	B	2.0	ug/L	No	No
MW-33A	Downgradient	Arsenic, total	6	100%	0.610	0.618	ug/L	LN	0.462	ug/L	Yes	No
MW-33A	Downgradient	Iron, total	6	100%	2.5	2.2	mg/L	Z	0.30	mg/L	Yes	No
MW-33A	Downgradient	Manganese, total	6	100%	0.09	0.20	mg/L	LN	0.05	mg/L	Yes	No
MW-33A	Downgradient	cis-1,2-dichloroethene	6	0%	0.81 (ND)	0.81	ug/L	B	35	ug/L	No	No
MW-33A	Downgradient	Ethyl ether	6	0%	0.72 (ND)	0.72	ug/L	B	50	ug/L	No	No
MW-33A	Downgradient	Trichloroethene	6	0%	0.46 (ND)	0.46	ug/L	B	1.0	ug/L	No	No
MW-33A	Downgradient	Vinyl Chloride	6	0%	0.02 (ND)	0.02	ug/L	B	0.20	ug/L	No	No
MW-33A	Downgradient	Ammonia as N	6	50%	0.30	0.30	mg/L	A	0.19	mg/L	Yes	No
MW-33C	Downgradient	1,1-Dichloroethane	10	0%	0.38 (ND)	0.38	ug/L	B	50	ug/L	No	No
MW-33C	Downgradient	1,4-Dichlorobenzene	10	0%	0.84 (ND)	0.84	ug/L	B	2.0	ug/L	No	No
MW-33C	Downgradient	Arsenic, total	10	100%	2.67	2.60	ug/L	LN	0.462	ug/L	Yes	No
MW-33C	Downgradient	Iron, total	10	80%	0.33	0.29	mg/L	LN	0.3	mg/L	No	No
MW-33C	Downgradient	Manganese, total	10	100%	0.29	0.21	mg/L	Z	0.05	mg/L	Yes	No
MW-33C	Downgradient	cis-1,2-dichloroethene	10	0%	0.81 (ND)	0.81	ug/L	B	35	ug/L	No	No
MW-33C	Downgradient	Ethyl ether	10	0%	0.72 (ND)	0.72	ug/L	B	50	ug/L	No	No
MW-33C	Downgradient	Trichloroethene	10	0%	0.46 (ND)	0.46	ug/L	B	1.0	ug/L	No	No
MW-33C	Downgradient	Vinyl Chloride	10	0%	0.02 (ND)	0.02	ug/L	B	0.20	ug/L	No	No
MW-33C	Downgradient	Ammonia as N	10	0%	0.03 (ND)	0.03	mg/L	B	0.19	mg/L	No	No
MW-36A	Downgradient	1,1-Dichloroethane	10	0%	0.38 (ND)	0.38	ug/L	B	50	ug/L	No	No
MW-36A	Downgradient	1,4-Dichlorobenzene	10	0%	0.84 (ND)	0.84	ug/L	B	2.0	ug/L	No	No
MW-36A	Downgradient	Arsenic, total	10	100%	0.616	0.580	ug/L	LN	0.462	ug/L	Yes	No
MW-36A	Downgradient	Iron, total	10	40%	0.11	0.11	mg/L	A	0.3	mg/L	No	No
MW-36A	Downgradient	Manganese, total	10	70%	0.0034	0.003	mg/L	A***	0.05	mg/L	No	No

**TABLE 3-1: 2017 Annual Groundwater Cleanup Level Statistical Evaluation Summary**

**Olympic View Sanitary Landfill**

**Statistical Methodology:** calculation of 95% UCL of mean per MTCASat

**Data Input (general):** 3-year "moving window", updated annually

**Data Input (specific):** January 1, 2015 through December 31, 2017

**Wells Evaluated:** (1) Compliance -- MW-15R, MW-34A, MW-34C, MW-39, MW-42, MW-43; (2) Downgradient -- MW-29A, MW-32, MW-33A, MW-33C, MW-36A

Monitoring Well	Monitoring Well Type	Corrective Action Monitoring Parameter	N <sup>[1]</sup>	% Detect	Max <sup>[2]</sup>	95% UCL of Mean <sup>[3]</sup>	Units <sup>[4]</sup>	Note	Groundwater Cleanup Level <sup>[5]</sup>	Units <sup>[4]</sup>	Does 95% UCL Exceed Cleanup Level?	Significant Trend? <sup>[6]</sup>
MW-36A	Downgradient	cis-1,2-dichloroethene	10	0%	0.81 (ND)	0.81	ug/L	B	35	ug/L	No	No
MW-36A	Downgradient	Ethyl ether	10	0%	0.72 (ND)	0.72	ug/L	B	50	ug/L	No	No
MW-36A	Downgradient	Trichloroethene	10	0%	0.46 (ND)	0.46	ug/L	B	1.0	ug/L	No	No
MW-36A	Downgradient	Vinyl Chloride	10	0%	0.02 (ND)	0.02	ug/L	B	0.20	ug/L	No	No
MW-36A	Downgradient	Ammonia as N	10	10%	0.03	0.03	mg/L	A	0.19	mg/L	No	No

**NOTES:**

<sup>[1]</sup> N = number of data points used for UCL calculation of the mean; only SIM results used for Vinyl Chloride (e.g., duplicate results with higher RLs by non-SIM were omitted).

<sup>[2]</sup> MAX = maximum detected result in the data set; if no detected results, then = maximum reporting limit for non-detect results (indicated with ND).

<sup>[3]</sup> A 3-year moving data set is used for calculation of the UCL.

<sup>[4]</sup> ug/L - micrograms per liter; mg/L = milligrams per liter.

<sup>[5]</sup> Groundwater Cleanup Levels are listed on Table 3 of the October 2010 Draft Cleanup Action Plan.

<sup>[6]</sup> Trend analysis results are based on data for the period January 2005 through December 2017; arrows indicated increasing (▲) or decreasing (▼) trends.

<sup>[7]</sup> For MW-15R, outlier of 0.41 mg/L from 2-24-15 sampling event was removed prior to UCL calculation

A = Detection frequency of data set too low and/or N too few to calculate 95% UCL of mean; therefore, the highest detected result in the data set used to represent 95% UCL of mean.

A\* = Same as note "A" except that the highest value in the data set is below the reporting limit of one or more non-detected results; therefore, the highest reporting limit is used to represent the 95% UCL of the mean.

A\*\* = MTCASat suggests use of lognormal formula but calculation of 95% UCL of mean by Land's formula provides unrealistic result; therefore, the highest detected result is used to represent the 95% UCL of the mean.

A\*\*\* = MTCASat suggests use of the Z-score method but then cites inability to calculate due to presence of censored values; therefore, the highest detected result is used to represent the 95% UCL of the mean.

B = Detection frequency = 0; therefore, the highest reporting limit in the data set is used to represent the 95% UCL of mean.

LN = The 95% UCL of the mean is calculated using Land's formula since lognormal distribution is indicated.

N = The 95% UCL of the mean is calculated using a normal-based t-statistic since a normal distribution is indicated.

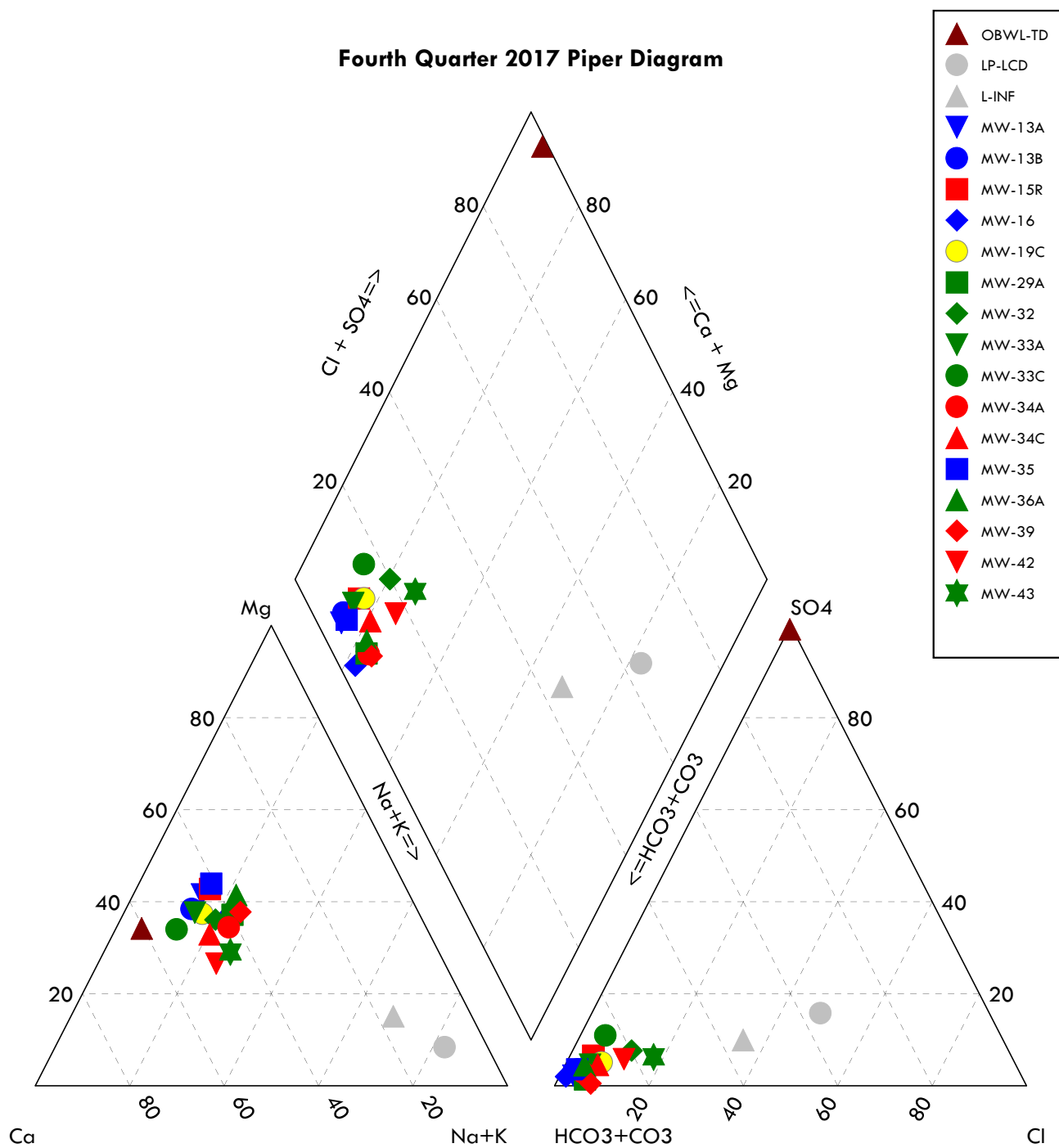
Z = the 95% UCL of the mean is calculated using the Z-score method in MTCASat since neither normal nor lognormal distribution can be determined.



APPENDIX D  
FOURTH QUARTER 2017  
GROUNDWATER GEOCHEMICAL EVALUATION



### Fourth Quarter 2017 Piper Diagram



DESCRIPTION: Piper Diagram, Fourth Quarter 2017 Annual Monitoring Report

	PROJECT: Olympic View Sanitary Landfill	PROJECT NO : 04204027.21
	CLIENT: Waste Management Closed Sites	DATE: February 2018



## Cation/Anion Balance

Location MW-13A  
Sample Date 11/13/2017

Major Ions	Conversion Factor +	mg/l	meq/l
Mn	0.0364	<0.00	<0.000
Fe	0.03581	<0.06	<0.000
Na	0.04350	5.10	0.22
K	0.02258	<1.00	<0.026
Ca	0.04990	15.00	0.75
Mg	0.08229	8.60	0.71
		Sum of Cations	1.704 meq/L
Cl	0.02821	1.70	0.05
SO4	0.02082	1.80	0.04
NO3	0.01613	0.42	0.01
HCO3	0.01639	97.20	1.59
		Sum of Anions	1.685 meq/L
Balance (% difference) *			0.54 %

+ mg/l to meq/l

\*  $[(\text{Total anions} - \text{Total cations}) / (\text{Total anions} + \text{Total cations})] * 100$

## Cation/Anion Balance

Location MW-13B  
Sample Date 11/13/2017

Major Ions	Conversion Factor +	mg/l	meq/l
Mn	0.0364	<0.00	<0.000
Fe	0.03581	<0.06	<0.000
Na	0.04350	5.10	0.22
K	0.02258	<1.00	<0.026
Ca	0.04990	17.00	0.85
Mg	0.08229	8.30	0.68
		Sum of Cations	1.78 meq/L
Cl	0.02821	1.90	0.05
SO4	0.02082	2.90	0.06
NO3	0.01613	0.44	0.01
HCO3	0.01639	97.20	1.59
		Sum of Anions	1.714 meq/L
		Balance (% difference) *	1.85 %

+ mg/l to meq/l

\*  $[(\text{Total anions} - \text{Total cations}) / (\text{Total anions} + \text{Total cations})] * 100$

## Cation/Anion Balance

Location MW-15R  
Sample Date 11/14/2017

Major Ions	Conversion Factor +	mg/l	meq/l
Mn	0.0364	<0.00	<0.000
Fe	0.03581	<0.06	<0.000
Na	0.04350	5.00	0.22
K	0.02258	<1.00	<0.026
Ca	0.04990	13.00	0.65
Mg	0.08229	8.10	0.67
		Sum of Cations	1.558 meq/L
Cl	0.02821	2.60	0.07
SO4	0.02082	4.80	0.10
NO3	0.01613	0.22	0.00
HCO3	0.01639	81.60	1.34
		Sum of Anions	1.514 meq/L
		Balance (% difference) *	1.44 %

+ mg/l to meq/l

\*  $[(\text{Total anions} - \text{Total cations}) / (\text{Total anions} + \text{Total cations})] * 100$

## Cation/Anion Balance

Location MW-16  
Sample Date 11/13/2017

Major Ions	Conversion Factor +	mg/l	meq/l
Mn	0.0364	<0.00	<0.000
Fe	0.03581	<0.06	<0.000
Na	0.04350	4.90	0.21
K	0.02258	<1.00	<0.026
Ca	0.04990	8.90	0.44
Mg	0.08229	4.80	0.39
		Sum of Cations	1.078 meq/L
Cl	0.02821	<1.00	<0.03
SO4	0.02082	1.00	0.02
NO3	0.01613	0.28	0.00
HCO3	0.01639	60.00	0.98
		Sum of Anions	1.037 meq/L
Balance (% difference) *			1.94 %

+ mg/l to meq/l

\*  $[(\text{Total anions} - \text{Total cations}) / (\text{Total anions} + \text{Total cations})] * 100$



## Cation/Anion Balance

Location MW-19C  
Sample Date 11/13/2017

Major Ions	Conversion Factor +	mg/l	meq/l
Mn	0.0364	1.20	0.044
Fe	0.03581	0.14	0.000
Na	0.04350	5.50	0.24
K	0.02258	1.30	0.033
Ca	0.04990	15.00	0.75
Mg	0.08229	7.40	0.61
		Sum of Cations	1.674 meq/L
Cl	0.02821	4.40	0.12
SO4	0.02082	4.10	0.09
NO3	0.01613	<0.05	<0.00
HCO3	0.01639	88.80	1.46
		Sum of Anions	1.666 meq/L
Balance (% difference) *			0.24 %

+ mg/l to meq/l

\*  $[(\text{Total anions} - \text{Total cations}) / (\text{Total anions} + \text{Total cations})] * 100$

## Cation/Anion Balance

Location MW-29A  
Sample Date 11/13/2017

Major Ions	Conversion Factor +	mg/l	meq/l
Mn	0.0364	1.10	0.040
Fe	0.03581	3.50	0.000
Na	0.04350	3.30	0.14
K	0.02258	<1.00	<0.026
Ca	0.04990	5.80	0.29
Mg	0.08229	3.30	0.27
		Sum of Cations	0.77 meq/L
Cl	0.02821	1.50	0.04
SO4	0.02082	<1.00	<0.02
NO3	0.01613	<0.05	<0.00
HCO3	0.01639	42.00	0.69
		Sum of Anions	0.752 meq/L
Balance (% difference) *			1.17 %

+ mg/l to meq/l

\*  $[(\text{Total anions} - \text{Total cations}) / (\text{Total anions} + \text{Total cations})] * 100$

## Cation/Anion Balance

Location MW-32  
Sample Date 11/15/2017

Major Ions	Conversion Factor +	mg/l	meq/l
Mn	0.0364	1.80	0.066
Fe	0.03581	0.56	0.000
Na	0.04350	11.00	0.48
K	0.02258	<1.00	<0.026
Ca	0.04990	22.00	1.10
Mg	0.08229	11.00	0.91
		Sum of Cations	2.573 meq/L
Cl	0.02821	12.00	0.34
SO4	0.02082	10.00	0.21
NO3	0.01613	<0.05	<0.00
HCO3	0.01639	132.00	2.16
		Sum of Anions	2.71 meq/L
Balance (% difference) *			-2.62 %

+ mg/l to meq/l

\*  $[(\text{Total anions} - \text{Total cations}) / (\text{Total anions} + \text{Total cations})] * 100$

## Cation/Anion Balance

Location MW-33A  
Sample Date 11/14/2017

Major Ions	Conversion Factor +	mg/l	meq/l
Mn	0.0364	0.01	0.000
Fe	0.03581	0.08	0.000
Na	0.04350	3.40	0.15
K	0.02258	<1.00	<0.026
Ca	0.04990	11.00	0.55
Mg	0.08229	5.30	0.44
		Sum of Cations	1.16 meq/L
Cl	0.02821	2.10	0.06
SO4	0.02082	2.50	0.05
NO3	0.01613	<0.05	<0.00
HCO3	0.01639	62.40	1.02
		Sum of Anions	1.135 meq/L
Balance (% difference) *			1.05 %

+ mg/l to meq/l

\*  $[(\text{Total anions} - \text{Total cations}) / (\text{Total anions} + \text{Total cations})] * 100$

## Cation/Anion Balance

Location MW-33C  
Sample Date 11/14/2017

Major Ions	Conversion Factor +	mg/l	meq/l
Mn	0.0364	0.14	0.005
Fe	0.03581	<0.06	<0.000
Na	0.04350	4.00	0.17
K	0.02258	1.30	0.033
Ca	0.04990	17.00	0.85
Mg	0.08229	6.60	0.54
		Sum of Cations	1.604 meq/L
Cl	0.02821	3.00	0.08
SO4	0.02082	8.40	0.18
NO3	0.01613	<0.05	<0.00
HCO3	0.01639	81.60	1.34
		Sum of Anions	1.598 meq/L
Balance (% difference) *			0.19 %

+ mg/l to meq/l

\*  $[(\text{Total anions} - \text{Total cations}) / (\text{Total anions} + \text{Total cations})] * 100$

## Cation/Anion Balance

Location MW-34A  
Sample Date 11/14/2017

Major Ions	Conversion Factor +	mg/l	meq/l
Mn	0.0364	<0.00	<0.000
Fe	0.03581	<0.06	<0.000
Na	0.04350	7.90	0.34
K	0.02258	<1.00	<0.026
Ca	0.04990	13.00	0.65
Mg	0.08229	6.50	0.53
		Sum of Cations	1.553 meq/L
Cl	0.02821	2.70	0.08
SO4	0.02082	2.20	0.05
NO3	0.01613	0.19	0.00
HCO3	0.01639	91.20	1.49
		Sum of Anions	1.62 meq/L
Balance (% difference) *			-2.11 %

+ mg/l to meq/l

\*  $[(\text{Total anions} - \text{Total cations}) / (\text{Total anions} + \text{Total cations})] * 100$

## Cation/Anion Balance

Location MW-34C  
Sample Date 11/14/2017

Major Ions	Conversion Factor +	mg/l	meq/l
Mn	0.0364	0.59	0.021
Fe	0.03581	0.58	0.000
Na	0.04350	10.00	0.43
K	0.02258	<1.00	<0.026
Ca	0.04990	21.00	1.05
Mg	0.08229	9.00	0.74
		Sum of Cations	2.27 meq/L
Cl	0.02821	5.40	0.15
SO4	0.02082	4.90	0.10
NO3	0.01613	<0.05	<0.00
HCO3	0.01639	120.00	1.97
		Sum of Anions	2.22 meq/L
		Balance (% difference) *	1.08 %

+ mg/l to meq/l

\*  $[(\text{Total anions} - \text{Total cations}) / (\text{Total anions} + \text{Total cations})] * 100$

## Cation/Anion Balance

Location MW-35  
Sample Date 11/15/2017

Major Ions	Conversion Factor +	mg/l	meq/l
Mn	0.0364	<0.00	<0.000
Fe	0.03581	<0.06	<0.000
Na	0.04350	5.00	0.22
K	0.02258	<1.00	<0.026
Ca	0.04990	13.00	0.65
Mg	0.08229	8.50	0.70
		Sum of Cations	1.59 meq/L
Cl	0.02821	1.70	0.05
SO4	0.02082	2.80	0.06
NO3	0.01613	0.51	0.01
HCO3	0.01639	92.40	1.51
		Sum of Anions	1.63 meq/L
		Balance (% difference) *	-1.17 %

+ mg/l to meq/l

\*  $[(\text{Total anions} - \text{Total cations}) / (\text{Total anions} + \text{Total cations})] * 100$



## Cation/Anion Balance

Location MW-36A  
Sample Date 11/14/2017

Major Ions	Conversion Factor +	mg/l	meq/l
Mn	0.0364	<0.00	<0.000
Fe	0.03581	<0.06	<0.000
Na	0.04350	5.90	0.26
K	0.02258	<1.00	<0.026
Ca	0.04990	9.50	0.47
Mg	0.08229	6.50	0.53
		Sum of Cations	1.29 meq/L
Cl	0.02821	1.80	0.05
SO4	0.02082	2.70	0.06
NO3	0.01613	0.22	0.00
HCO3	0.01639	69.60	1.14
		Sum of Anions	1.25 meq/L
		Balance (% difference) *	1.57 %

+ mg/l to meq/l

\*  $[(\text{Total anions} - \text{Total cations}) / (\text{Total anions} + \text{Total cations})] * 100$

## Cation/Anion Balance

Location MW-39  
Sample Date 11/13/2017

Major Ions	Conversion Factor +	mg/l	meq/l
Mn	0.0364	0.46	0.017
Fe	0.03581	34.00	0.000
Na	0.04350	8.40	0.37
K	0.02258	<1.00	<0.026
Ca	0.04990	12.00	0.60
Mg	0.08229	7.30	0.60
		Sum of Cations	1.607 meq/L
Cl	0.02821	5.50	0.16
SO4	0.02082	<1.00	<0.02
NO3	0.01613	<0.05	<0.00
HCO3	0.01639	117.60	1.93
		Sum of Anions	2.104 meq/L
		Balance (% difference) *	-13.39 %

+ mg/l to meq/l

\*  $[(\text{Total anions} - \text{Total cations}) / (\text{Total anions} + \text{Total cations})] * 100$

## Cation/Anion Balance

Location MW-42  
Sample Date 11/13/2017

Major Ions	Conversion Factor +	mg/l	meq/l
Mn	0.0364	4.30	0.157
Fe	0.03581	23.00	0.000
Na	0.04350	20.00	0.87
K	0.02258	8.50	0.217
Ca	0.04990	42.00	2.10
Mg	0.08229	14.00	1.15
		Sum of Cations	4.49 meq/L
Cl	0.02821	21.00	0.59
SO4	0.02082	14.00	0.29
NO3	0.01613	<0.05	<0.00
HCO3	0.01639	252.00	4.13
		Sum of Anions	5.01 meq/L
Balance (% difference) *			-5.50 %

+ mg/l to meq/l

\*  $[(\text{Total anions} - \text{Total cations}) / (\text{Total anions} + \text{Total cations})] * 100$

## Cation/Anion Balance

Location MW-43  
Sample Date 11/13/2017

Major Ions	Conversion Factor +	mg/l	meq/l
Mn	0.0364	0.02	0.001
Fe	0.03581	<0.06	<0.000
Na	0.04350	2.20	0.10
K	0.02258	<1.00	<0.026
Ca	0.04990	4.00	0.20
Mg	0.08229	1.60	0.13
		Sum of Cations	0.453 meq/L
Cl	0.02821	2.30	0.06
SO4	0.02082	1.10	0.02
NO3	0.01613	1.10	0.02
HCO3	0.01639	16.80	0.28
		Sum of Anions	0.381 meq/L
		Balance (% difference) *	8.66 %

+ mg/l to meq/l

\*  $[(\text{Total anions} - \text{Total cations}) / (\text{Total anions} + \text{Total cations})] * 100$

## Cation/Anion Balance

Location OBWL-TD  
Sample Date 11/15/2017

Major Ions	Conversion Factor +	mg/l	meq/l
Mn	0.0364	0.35	0.013
Fe	0.03581	2.60	0.000
Na	0.04350	2.70	0.12
K	0.02258	<1.00	<0.026
Ca	0.04990	32.00	1.60
Mg	0.08229	11.00	0.91
		Sum of Cations	2.66 meq/L
Cl	0.02821	1.80	0.05
SO4	0.02082	860.00	17.92
NO3	0.01613	1.60	0.03
HCO3	0.01639	<6.00	<0.10
		Sum of Anions	18.1 meq/L
		Balance (% difference) *	-74.38 %

+ mg/l to meq/l

\*  $[(\text{Total anions} - \text{Total cations}) / (\text{Total anions} + \text{Total cations})] * 100$

## Cation/Anion Balance

Location LP-LCD  
Sample Date 11/21/2017

Major Ions	Conversion Factor +	mg/l	meq/l
Mn	0.0364	0.58	0.021
Fe	0.03581	0.12	0.000
Na	0.04350	720.00	31.32
K	0.02258	69.00	1.765
Ca	0.04990	73.00	3.64
Mg	0.08229	41.00	3.37
		Sum of Cations	40.1 meq/L
Cl	0.02821	680.00	19.18
SO4	0.02082	300.00	6.25
NO3	0.01613		
HCO3	0.01639	864.00	14.16
		Sum of Anions	39.6 meq/L
Balance (% difference) *			0.67 %

+ mg/l to meq/l

\*  $[(\text{Total anions} - \text{Total cations}) / (\text{Total anions} + \text{Total cations})] * 100$

## Cation/Anion Balance

Location L-INF  
Sample Date 11/15/2017

Major Ions	Conversion Factor +	mg/l	meq/l
Mn	0.0364	1.90	0.069
Fe	0.03581	1.10	0.000
Na	0.04350	570.00	24.79
K	0.02258	74.00	1.893
Ca	0.04990	130.00	6.49
Mg	0.08229	72.00	5.92
		Sum of Cations	39.2 meq/L
Cl	0.02821	620.00	17.49
SO4	0.02082	240.00	5.00
NO3	0.01613	<0.05	<0.00
HCO3	0.01639	1680.0 0	27.53
		Sum of Anions	50.0 meq/L
Balance (% difference) *			-12.17 %

+ mg/l to meq/l

\*  $[(\text{Total anions} - \text{Total cations}) / (\text{Total anions} + \text{Total cations})] * 100$





APPENDIX E  
LANDFILL GAS MONITORING RESULTS



**Table E1. Historical Results of Methane (CH<sub>4</sub>) Measurements  
2017 Annual Monitoring Report  
Olympic View Sanitary Landfill, Kitsap County, Washington**

Date Monitored	OV-GP-07	OV-GP-08	OV-GP-9S	OV-GP-9D	OV-GP10S	OV-GP10D	OV-GP11S	OV-GP11D	OV-GP12S	OV-GP12M	OV-GP12D	OV-GP13S	OV-GP13M	OV-GP13D	OV-GP14	OV-GP15	OV-GP16
11/22/2017	—	0.0	0.0	0.0	0.0	0.0	0.0	—	0.0	0.0	—	0.0	0.0	0.0	0.0	0.5	0.0
8/28/2017	0.0	0.0	0.0	0.0	0.0	0.0	0.0	—	0.0	0.0	—	0.0	0.0	0.0	0.0	0.0	0.0
5/30/2017	0.0	0.0	0.0	—	0.0	0.0	0.0	—	0.0	0.0	—	0.0	0.0	—	0.0	0.0	0.0
3/17/2017	—	0.0	0.0	—	0.0	0.0	0.0	—	0.0	0.0	—	0.0	0.0	0.0	0.0	0.0	0.0
11/15/2016	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0
9/20/2016	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6/27/2016	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3/24/2016	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
12/15/2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9/29/2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5/7/2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0	—	0.0	0.0	—	0.0	0.0	0.0	0.0	0.0	0.0
3/30/2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0	—	0.0	0.0	—	0.0	0.0	0.0	0.0	0.2	0.0
12/29/2014	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0
9/24/2014	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6/16/2014	0.0	0.0	0.0	0.0	0.0	0.0	0.0	—	0.0	0.0	—	0.0	0.0	0.0	0.0	1.0	0.0
3/28/2014	0.0	0.0	0.0	0.0	0.0	0.0	0.0	—	0.0	0.0	—	0.0	0.0	0.0	0.0	3.7	0.0
12/13/2013	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0
7/13/2013	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	2.7	0.0
5/13/2013	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2/13/2013	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0
11/12/2012	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
8/12/2012	0.0	0.0	0.0	0.0	0.0	0.0	0.0	—	0.0	0.0	—	0.0	0.0	0.0	0.0	0.0	0.0
5/18/2012	0.0	0.0	0.0	0.0	0.0	0.0	0.0	—	0.0	0.0	—	0.0	0.0	0.0	0.0	0.2	0.0
3/12/2012	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	0.0
12/22/2011	0.0	0.0	0.0	—	0.0	—	0.0	—	0.0	0.0	—	0.0	0.0	—	0.0	1.5	0.0
9/27/2011	0.0	0.0	0.0	—	0.0	—	0.0	—	0.0	0.0	—	0.0	0.0	—	0.0	0.3	0.0
6/29/2011	0.1	0.0	0.0	—	0.0	—	0.0	—	0.0	0.0	—	0.0	0.0	—	0.0	1.0	0.0
3/16/2011	0.0	0.0	0.0	—	0.0	—	0.0	—	0.0	0.0	—	0.0	0.0	—	0.0	0.0	0.0
12/22/2010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9/27/2010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6/29/2010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3/16/2010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
12/8/2009	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0
9/4/2009	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
6/5/2009	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3/3/2009	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.1
12/1/2008	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0
9/5/2008	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.8	0.0
6/23/2008	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.9	0.0
3/5/2008	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.4	0.0

**Notes:**  
 OV-GP = Gas Probe  
 S = Shallow Monitoring Zone  
 M = Middle Monitoring Zone  
 D = Deep Monitoring Zone  
 Detected CH<sub>4</sub>>0.3% vol.  
 — Screened interval submerged

**Table E2. Historical Results of Carbon Dioxide (CO<sub>2</sub>) Measurements  
2017 Annual Monitoring Report  
Olympic View Sanitary Landfill, Port Orchard, Washington**

Date Monitored	OV-GP-07	OV-GP-08	OV-GP-09S	OV-GP-09D	OV-GP10S	OV-GP10D	OV-GP11S	OV-GP11D	OV-GP12S	OV-GP12M	OV-GP12D	OV-GP13S	OV-GP13M	OV-GP13D	OV-GP14	OV-GP15	OV-GP16
11/22/2017	—	3.7	2.0	1.6	0.9	0.7	2.7	—	1.3	1.2	—	3.4	3.6	0.0	6.5	5.8	2.8
8/28/2017	8.9	4.8	2.2	1.1	0.7	0.5	3.0	—	1.0	1.2	—	3.2	2.4	2.9	6.3	1.6	2.3
5/30/2017	4.5	1.1	2.3	—	0.8	0.6	3.2	—	1.0	2.5	—	3.5	3.2	—	4.7	3.7	1.5
3/17/2017	—	1.2	1.7	—	0.6	0.7	0.0	—	1.1	1.4	—	3.4	3.3	0.0	3.4	4.2	1.6
11/15/2016	8.2	3.6	2.1	1.4	0.9	0.7	2.2	1.5	1.2	1.3	0.4	3.0	2.6	0.2	5.6	6.6	1.5
9/20/2016	11.2	5.0	2.2	1.4	0.5	0.3	1.9	0.6	0.9	0.9	0.7	1.8	2.5	0.1	2.0	3.0	2.0
6/27/2016	7.3	2.8	1.9	1.0	0.7	0.5	1.0	2.9	1.0	1.1	0.5	2.8	2.4	0.3	5.8	3.3	2.5
3/24/2016	3.1	1.4	1.8	1.3	0.7	0.7	2.1	2.1	1.7	1.6	1.1	3.3	3.3	2.1	4.8	4.3	2.4
12/15/2015	6.4	2.3	1.9	1.6	0.9	0.7	2.6	2.0	1.2	1.0	1.0	3.9	3.5	1.6	5.9	3.5	3.8
9/29/2015	10.8	6.2	1.6	1.5	0.6	0.7	2.0	2.6	0.9	1.0	1.3	2.9	1.9	0.2	8.7	9.4	4.0
5/7/2015	7.9	3.6	2.6	1.7	0.9	0.8	3.6	—	1.1	2.4	—	3.4	3.3	0.0	6.1	5.0	4.5
3/30/2015	6.2	2.0	2.4	1.7	0.9	0.8	3.3	—	1.3	1.4	—	0.8	3.3	3.4	5.7	6.5	3.8
12/29/2014	8.3	2.6	2.6	1.8	1.0	0.9	3.2	3.5	1.3	1.2	1.7	3.6	3.5	0.1	6.8	7.3	3.9
9/24/2014	11.2	6.1	2.0	1.6	0.8	0.7	3.4	3.0	1.2	1.3	1.6	2.9	3.3	1.3	9.3	10.1	4.2
6/16/2014	8.9	4.0	2.9	1.8	1.2	1.0	4.2	—	2.0	1.7	—	3.7	3.3	1.1	6.6	6.1	5.0
3/28/2014	5.9	2.0	1.8	1.8	0.8	0.9	2.5	—	1.9	2.2	—	3.3	3.5	3.2	6.4	2.2	3.3
12/13/2013	9.6	5.4	2.6	1.7	1.1	0.9	3.5	3.6	1.7	1.9	1.7	3.9	3.8	3.7	8.5	9.5	5.1
7/13/2013	9.6	4.5	2.9	1.5	1.1	0.7	3.9	0.4	1.8	1.7	0.4	3.5	3.1	3.1	7.8	7.8	7.4
5/13/2013	6.2	2.6	2.3	1.7	0.8	0.7	2.4	2.2	1.9	1.0	0.8	2.3	2.6	0.1	5.3	4.0	5.0
2/13/2013	4.2	2.5	1.7	1.5	0.7	0.7	1.8	2.4	1.1	0.9	0.8	2.3	2.4	0.8	5.1	6.2	3.9
11/20/2012	8.3	2.8	1.9	1.6	0.9	0.7	2.2	2.9	1.3	1.2	1.2	2.9	2.1	3.0	7.5	3.5	4.8
8/20/2012	9.6	4.6	2.5	1.4	0.8	0.6	2.8	2.8	1.8	1.5	—	3.5	2.1	1.6	7.9	1.7	6.1
5/18/2012	6.0	3.1	2.6	1.7	0.8	0.6	2.1	—	2.2	1.1	—	2.6	1.7	1.1	5.7	3.4	5.1
3/12/2012	4.2	1.7	2.3	1.7	0.7	0.7	1.7	2.4	1.9	1.9	0.1	3.0	3.2	2.8	—	6.2	4.4
12/22/2011	1.5	5.5	3.2	—	1.3	—	1.3	—	1.4	1.0	—	2.0	2.0	—	5.1	5.2	4.6
9/27/2011	9.7	4.7	1.7	—	0.7	—	1.8	—	0.7	0.7	—	2.9	1.8	—	8.9	8.8	2.4
6/29/2011	6.6	3.0	3.0	—	0.7	—	2.1	—	2.3	0.9	—	3.4	3.0	—	6.4	3.9	6.2
3/16/2011	1.5	0.5	2.1	—	0.7	—	1.4	—	2.4	1.7	—	3	3.1	—	0.3	0.3	3.8
12/22/2010	8.3	2.4	2.3	1.7	3.2	2.8	2.4	2.1	2.2	1.8	1.0	3.9	3.5	0.4	3.4	1.3	6.7
9/27/2010	11.0	4.1	2.1	1.5	0.9	1.0	2.0	0.4	1.9	1.3	0.7	1.1	3.2	0.3	10.2	0.8	7.4
6/29/2010	8.0	0.2	3.5	1.6	0.9	0.7	2.5	1.6	2.3	2.2	0.7	2.7	3.0	2.4	7.3	0.2	9.3
3/16/2010	5.1	2.1	2.5	1.7	0.2	0.7	1.9	1.7	1.5	1.3	1.4	1.2	3.2	2.5	6.0	1.9	7.0
12/8/2009	6.9	6.1	2.3	1.7	0.1	0.4	1.8	0.2	1.5	1.8	0.2	1.5	3.3	3.3	10.0	2.8	7.1
9/4/2009	11.3	6.8	2.7	2.0	0.9	0.9	2.6	2.0	2.4	2.7	2.2	3.4	3.8	3.9	11.7	5.1	1.9
6/5/2009	7.6	4.9	3.2	1.9	0.6	0.6	2.2	1.6	2.3	2.3	1.5	2.9	3.8	2.4	8.2	2.4	2.0
3/3/2009	7.7	2.8	2.1	1.4	0.6	0.6	1.6	1.4	1.5	1.4	1.3	2.1	4.0	3.6	8.0	2.4	1.1
12/1/2008	9.2	7.0	0.7	0.7	2.9	1.7	2.0	1.6	2.3	2.3	1.8	2.9	4.2	2.4	9.9	2.9	1.8
9/5/2008	10.3	6.2	3.0	1.9	1.0	0.8	2.8	2.1	3.1	2.6	2.3	4.2	4.7	3.9	9.8	14.3	1.9
6/23/2008	8.5	4.6	2.9	1.6	0.8	0.7	2.5	1.8	1.8	2.0	1.0	3.4	4.4	4.3	7.5	12.4	2.3
3/5/2008	4.9	2.6	2.3	1.6	0.6	0.7	2.0	1.7	1.0	0.8	1.1	2.3	4.7	5.0	6.6	8.9	1.2

**Notes:**

- OV-GP = Gas Probe
- S = Shallow Monitoring Zone
- M = Middle Monitoring Zone
- D = Deep Monitoring Zone
- Detected CO<sub>2</sub>>0.3% vol.
- Screened interval submerged

**Table E3. Historical Results of Oxygen (O<sub>2</sub>) Measurements  
2017 Annual Monitoring Report  
Olympic View Sanitary Landfill, Port Orchard, Washington**

Date Monitored	OV-GP-07	OV-GP-08	OV-GP-9S	OV-GP-9D	OV-GP10S	OV-GP10D	OV-GP11S	OV-GP11D	OV-GP12S	OV-GP12M	OV-GP12D	OV-GP13S	OV-GP13M	OV-GP13D	OV-GP14	OV-GP15	OV-GP16
11/22/2017	—	10.0	18.9	19.2	20.2	19.7	18.9	—	19.7	19.7	—	17.7	17.4	21.2	7.6	0.1	17.8
8/28/2017	7.8	8.6	18.7	18.5	20.1	18.9	18.1	—	16.4	16.4	—	17.3	17.0	16.1	8.0	16.1	19.0
5/30/2017	4.6	13.3	18.3	—	20.2	18.6	17.5	—	19.9	19.2	—	17.2	16.3	—	6.5	10.4	18.7
3/17/2017	—	8.8	18.2	—	20.0	18.1	0.0	—	19.7	19.1	—	17.7	17.0	0.0	6.7	1.1	19.2
11/15/2016	4.7	4.0	17.5	18.9	19.7	19.4	18.3	19.1	18.3	18.1	20.0	16.6	17.8	20.7	8.2	0.0	17.3
9/20/2016	7.7	11.9	19.7	19.6	20.5	20.7	19.2	19.9	19.5	20.0	17.8	18.5	17.9	21.1	15.8	16.8	18.8
6/27/2016	6.8	11.3	19.3	18.6	20.2	19.3	18.7	18.2	19.7	19.9	19.4	18.5	17.5	20.6	8.0	7.0	18.5
3/24/2016	9.7	6.7	18.4	18.8	20.1	18.2	17.5	15.6	18.7	18.8	17.7	16.7	15.9	18.5	4.9	0.0	17.6
12/15/2015	5.9	3.7	18.6	19.7	20.1	19.3	18.3	17.5	20.7	20.3	18.8	16.6	17.3	19.0	5.0	5.7	16.1
9/29/2015	7.0	7.8	19.8	19.6	20.4	19.6	19.2	18.5	19.9	19.6	16.2	17.4	18.4	20.4	7.4	5.0	16.6
5/7/2015	4.1	7.0	19.0	19.4	20.2	18.9	17.6	—	18.9	18.3	—	16.9	16.6	20.7	5.5	5.5	16.0
3/30/2015	4.5	9.4	18.6	19.0	20.3	18.9	17.7	—	19.3	18.3	—	19.7	17.1	17.7	5.0	0.1	16.3
12/29/2014	3.6	5.3	18.5	19.6	20.5	19.8	17.9	14.4	20.1	19.5	16.4	17.5	17.5	20.7	5.7	0.0	16.4
9/24/2014	8.3	8.6	19.9	19.6	20.4	19.4	18.6	17.4	19.5	18.7	15.2	18.5	17.7	19.5	7.0	3.2	17.7
6/16/2014	3.7	5.7	18.5	18.8	20.0	18.5	16.9	—	19.1	18.8	—	17.7	17.3	20.1	5.9	0.0	16.9
3/28/2014	4.8	3.3	19.0	19.5	20.9	18.8	18.7	—	18.7	18.2	—	18.3	18.1	18.2	5.5	5.8	16.8
12/13/2013	4.9	6.3	19.4	19.6	20.1	19.3	17.6	11.5	18.5	17.8	16.6	17.6	17.3	17.3	3.9	1.2	16.1
7/13/2013	4.4	5.8	18.5	19.1	20.0	19.2	16.9	20.2	17.3	16.3	19.1	17.0	17.7	18.0	0.0	0.0	13.6
5/13/2013	4.5	8.4	18.8	19.0	20.1	18.7	18.2	15.7	19.6	20.0	18.7	18.2	17.9	20.8	6.2	7.2	15.4
2/13/2013	4.0	7.4	19.2	18.2	20.4	18.4	18.9	14.2	20.5	20.2	18.1	18.6	17.1	20.2	5.8	0.3	15.9
11/20/2012	4.8	4.5	18.0	19.5	20.2	19.7	18.9	14.0	18.9	18.9	16.8	17.9	18.9	18.1	5.2	7.2	13.8
8/20/2012	5.0	6.7	18.5	18.4	19.3	18.6	17.9	12.5	18.3	18.0	—	16.9	17.5	18.4	4.3	19.1	15.3
5/18/2012	4.2	5.8	17.7	18.7	19.8	19.3	18.1	—	19.2	19.3	—	18.0	19.1	19.8	5.5	13.0	15.0
3/12/2012	3.5	5.4	18.6	19.0	20.1	18.6	19.1	15.4	18.0	17.7	21.4	18.2	17.6	18.3	—	0.0	15.6
12/22/2011	20.0	5.7	17.6	—	19.8	—	18.9	—	19.6	19.3	—	17.7	18.4	—	6.7	12.4	15.2
9/27/2011	8.9	10.8	19.9	—	20.6	—	20.0	—	20.4	19.9	—	18.3	18.8	—	7.6	4.4	18.8
6/29/2011	3.6	6.5	17.9	—	20.2	—	18.7	—	19.4	19.8	—	17.2	14.9	—	4.8	6.5	14.8
3/16/2011	20.1	20.7	18.3	—	20.5	—	16.5	—	16.7	17.4	—	16.6	15	—	20.6	20.4	15.3
12/22/2010	1.8	2.4	16.3	17.8	11.1	10.1	16.5	16.4	16.1	16.1	18.8	14.7	14.5	19.5	18.6	19.4	11.2
9/27/2010	6.6	9.7	18.5	19.0	20.5	20.6	19.1	20.5	19.0	19.0	19.4	17.5	15.3	20.7	8.2	20.3	12.6
6/29/2010	3.5	20.1	16.6	18.0	19.3	18.3	17.3	18.1	16.8	16.8	18.4	15.8	13.4	14.9	4.5	19.6	9.2
3/16/2010	3.0	8.5	18.4	19.3	21.6	19.3	18.0	18.9	20.9	20.9	18.0	17.0	12.7	15.6	2.8	10.0	10.4
12/8/2009	2.5	6.0	16.6	18.8	21.3	21.6	19.3	21.7	17.9	17.9	20.1	17.9	15.2	15.7	1.8	5.3	10.4
9/4/2009	7.5	6.4	19.8	19.8	21.1	20.2	20.1	19.6	15.9	15.9	14.3	17.3	14.3	13.9	3.0	3.3	19.3
6/5/2009	2.4	3.4	17.0	18.3	20.1	18.9	18.3	19.0	16.3	16.3	17.0	15.3	12.6	12.4	3.0	6.2	18.9
3/3/2009	2.9	7.5	18.8	18.9	20.4	18.9	18.8	19.3	19.0	19.0	16.7	16.3	13.4	13.7	2.7	0.0	19.5
12/1/2008	1.4	1.0	20.2	19.6	17.6	19.1	18.9	19.1	16.5	16.5	15.2	16.4	13.1	12.4	1.6	0.0	18.8
9/5/2008	6.8	8.0	18.9	19.3	20.5	19.7	19.1	19.4	17.1	17.1	14.4	15.8	11.7	13.0	5.0	0.0	19.5
6/23/2008	6.0	10.8	18.5	19.3	20.1	19.3	18.9	19.2	17.5	17.5	18.1	16.3	11.3	10.5	4.3	0.0	19.1
3/5/2008	4.0	13.6	19.3	19.5	20.2	18.7	18.8	18.2	20.0	20.0	18.4	15.4	8.8	8.5	5.5	0.0	20.3

**Notes:**

- OV-GP = Gas Probe
- S = Shallow Monitoring Zone
- M = Middle Monitoring Zone
- D = Deep Monitoring Zone
- Depressed O<sub>2</sub><20.3% vol.
- Screened interval submerged



**Table E-4. 2017 Landfill Gas Collection (at Flare Inlet)**  
**2017 Annual Monitoring Report**  
**Olympic View Sanitary Landfill, Kitsap County, Washington**

Device Name	Date Time	CH4 (Methane %)	CO <sub>2</sub> (Carbon Dioxide %)	O <sub>2</sub> (Oxygen %)	Balance Gas (%)	Temperature (°F)	Flow (SCFM)
OV-FL-IN	1/3/2017 11:51	18.9	16.2	4.2	60.7	46	303
OV-FL-IN	1/9/2017 11:23	22.6	18	2.5	56.9		276
OV-FL-IN	1/16/2017 9:53	20.9	17.5	3	58.6	45	300
OV-FL-IN	1/23/2017 14:17	20.3	17	4.1	58.6	52.9	242
OV-FL-IN	1/30/2017 14:12	20.9	17.3	3.4	58.4	56	293
OV-FL-IN	2/8/2017 13:37	21.7	17.7	2.9	57.7	58	295
OV-FL-IN	2/13/2017 13:26	21.8	18.2	1.9	58.1	64	322
OV-FL-IN	2/14/2017 8:58	21.5	16.8	3.4	58.3	49	310
OV-FL-IN	2/14/2017 15:47	22.6	17	2.6	57.8	61	323
OV-FL-IN	2/14/2017 15:47	22.6	17	2.6	57.8	61	323
OV-FL-IN	2/21/2017 9:08	24.2	17.8	3.3	54.7	56	278
OV-FL-IN	2/21/2017 12:13	23.1	16.7	3.6	56.6	56	264
OV-FL-IN	2/27/2017 15:39	20.9	18.3	2.9	57.9	57	289
OV-FL-IN	3/2/2017 12:02	20.8	16.4	3.5	59.3	56	286
OV-FL-IN	3/2/2017 14:22	21.7	17.5	2.7	58.1	54	286
OV-FL-IN	3/3/2017 10:02	24	18.5	2	55.5	55	300
OV-FL-IN	3/3/2017 11:34	24.3	18.7	1.7	55.3	58	301
OV-FL-IN	3/6/2017 15:59	21.4	16.8	3.6	58.2		245
OV-FL-IN	3/17/2017 8:27	21.8	17.4	2.3	58.5	52	330
OV-FL-IN	3/20/2017 11:02	22.6	17.1	3.3	57	65.9	292
OV-FL-IN	3/20/2017 16:00	25.3	18.2	2.9	53.6	64.7	315
OV-FL-IN	3/21/2017 8:10	26.1	18.4	2.4	53.1	57.3	308
OV-FL-IN	3/21/2017 12:55	25.9	18.4	2.6	53.1	62.8	298
OV-FL-IN	3/23/2017 10:01	22.6	17	3.4	57	62.4	271
OV-FL-IN	3/23/2017 17:23	23.8	17.8	3.1	55.3	64.1	296
OV-FL-IN	3/28/2017 12:47	23.2	17.7	2.6	56.5	57	265
OV-FL-IN	4/6/2017 7:45	25	18.6	2.1	54.3	50	295
OV-FL-IN	4/12/2017 14:10	24.3	18.6	2.3	54.8	63	276
OV-FL-IN	4/17/2017 17:20	22.3	17.5	3.2	57	54	274
OV-FL-IN	4/26/2017 18:55	22.6	17.6	2.9	56.9	58	263
OV-FL-IN	5/2/2017 12:22	21.7	17.5	2.7	58.1	72	262
OV-FL-IN	5/3/2017 10:38	21.6	14	3.1	61.3	79.4	270
OV-FL-IN	5/8/2017 12:11	20.7	16.8	3.5	59	79	282
OV-FL-IN	5/15/2017 15:13	21.7	17.6	2.9	57.8	65	284
OV-FL-IN	5/22/2017 14:28	21.3	16.9	3.2	58.6	94	275
OV-FL-IN	5/30/2017 14:18	20.2	16.6	3.7	59.5	73	290
OV-FL-IN	6/5/2017 11:37	39.8	25.8	2.4	32	63	385
OV-FL-IN	6/12/2017 12:29	21.3	16.6	3.8	58.3	76.2	282
OV-FL-IN	6/19/2017 13:12	21.7	17.1	3.1	58.1	86.4	282
OV-FL-IN	6/26/2017 12:04	21.1	17.2	3.3	58.4	82	269
OV-FL-IN	7/3/2017 10:44	33.6	22.2	2.2	42	76.1	348
OV-FL-IN	7/10/2017 9:23	21.4	16.9	3.8	57.9	77	286
OV-FL-IN	7/17/2017 10:33	22.5	16.6	3.9	57	85	301
OV-FL-IN	7/28/2017 9:19	20.8	16.7	3.3	59.2		293
OV-FL-IN	8/3/2017 11:24	21.4	16.8	3.6	58.2	86	287
OV-FL-IN	8/7/2017 11:37	20.9	16.8	3.6	58.7	93.5	279
OV-FL-IN	8/18/2017 12:39	20.3	17	3.7	59	84	279
OV-FL-IN	8/21/2017 10:39	20.7	17.3	3.8	58.2	78	286
OV-FL-IN	8/29/2017 7:27	21.2	17.4	4	57.4	72.4	288
OV-FL-IN	9/5/2017 12:38	21	16.8	3.7	58.5	90.5	298
OV-FL-IN	9/12/2017 16:43	36.7	22.9	1.7	38.7	87.9	370
OV-FL-IN	9/18/2017 8:18	21.6	17.6	4	56.8	68.6	315
OV-FL-IN	9/28/2017 10:15	21.4	17.7	3.6	57.3	77.7	302
OV-FL-IN	10/5/2017 15:37	20.5	17.3	3.9	58.3	79.2	302
OV-FL-IN	10/11/2017 10:51	20.1	16.5	4.7	58.7	67.3	305
OV-FL-IN	10/16/2017 10:48	20.3	16.6	4.4	58.7	63.9	312
OV-FL-IN	10/27/2017 11:13	28.4	20.6	2.6	48.4	63.7	348
OV-FL-IN	10/30/2017 18:45	46.2	28.8	1.9	23.1	61	420
OV-FL-IN	11/6/2017 12:16	20.8	17.3	3.9	58	56.1	269

**Table E-4. 2017 Landfill Gas Collection (at Flare Inlet)**  
**2017 Annual Monitoring Report**  
**Olympic View Sanitary Landfill, Kitsap County, Washington**

Device Name	Date Time	CH <sub>4</sub> (Methane %)	CO <sub>2</sub> (Carbon Dioxide %)	O <sub>2</sub> (Oxygen %)	Balance Gas (%)	Temperature (°F)	Flow (SCFM)
OV-FL-IN	11/13/2017 16:16	26.1	18.9	2.9	52.1	61.5	321
OV-FL-IN	11/21/2017 15:34	23.8	18.7	2.4	55.1	57.9	283
OV-FL-IN	11/30/2017 14:43	18.7	13.7	7.9	59.7	61.2	378
OV-FL-IN	11/30/2017 15:32	25.2	18.6	2.6	53.6	59.6	304
OV-FL-IN	12/4/2017 14:26	20.8	16.5	3.7	59	58	265
OV-FL-IN	12/11/2017 11:51	22.1	17.4	3.9	56.6	47.3	287
OV-FL-IN	12/29/2017 11:14	24.9	18.9	2.1	54.1	56.1	276.3
OV-FL-IN	12/29/2017 15:45	25.4	19.3	1.5	53.8	56	297.4
<b>Annualized Average LFG Component (% , °F or scfm)</b>		<b>23.25</b>	<b>17.84</b>	<b>3.16</b>	<b>55.74</b>	<b>65.49</b>	<b>297.01</b>
<b>Estimated Volume of LFG Removed During 2017 (MMscf)</b>							<b>156.11</b>

% = percent by volume

°F = degrees Fahrenheit

scfm = standard cubic foot per minute

MMscf = million cubic feet



### Figure E-1: LFG Probe Methane Timeseries

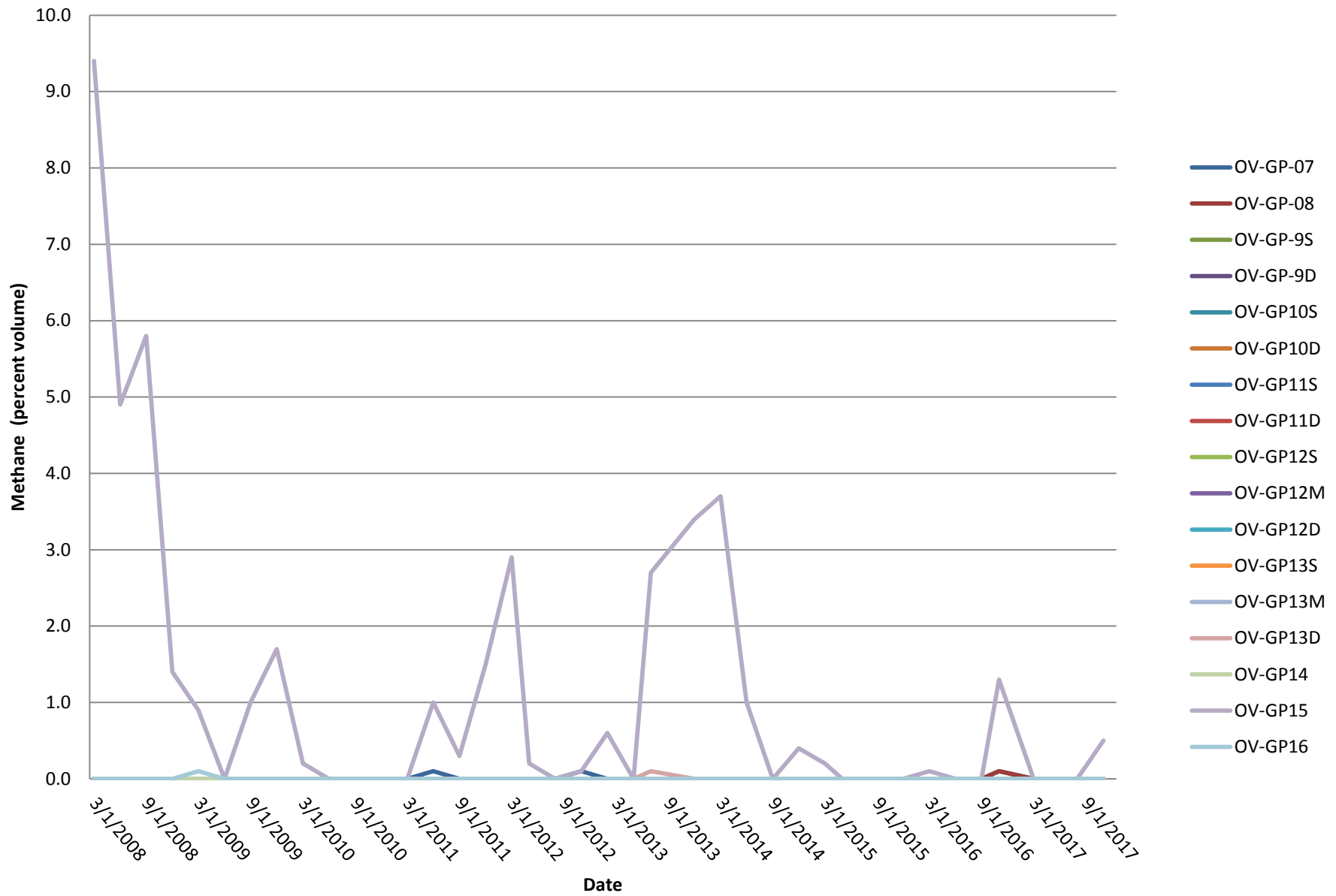


Figure E-2: LFG Probe Carbon Dioxide Timeseries

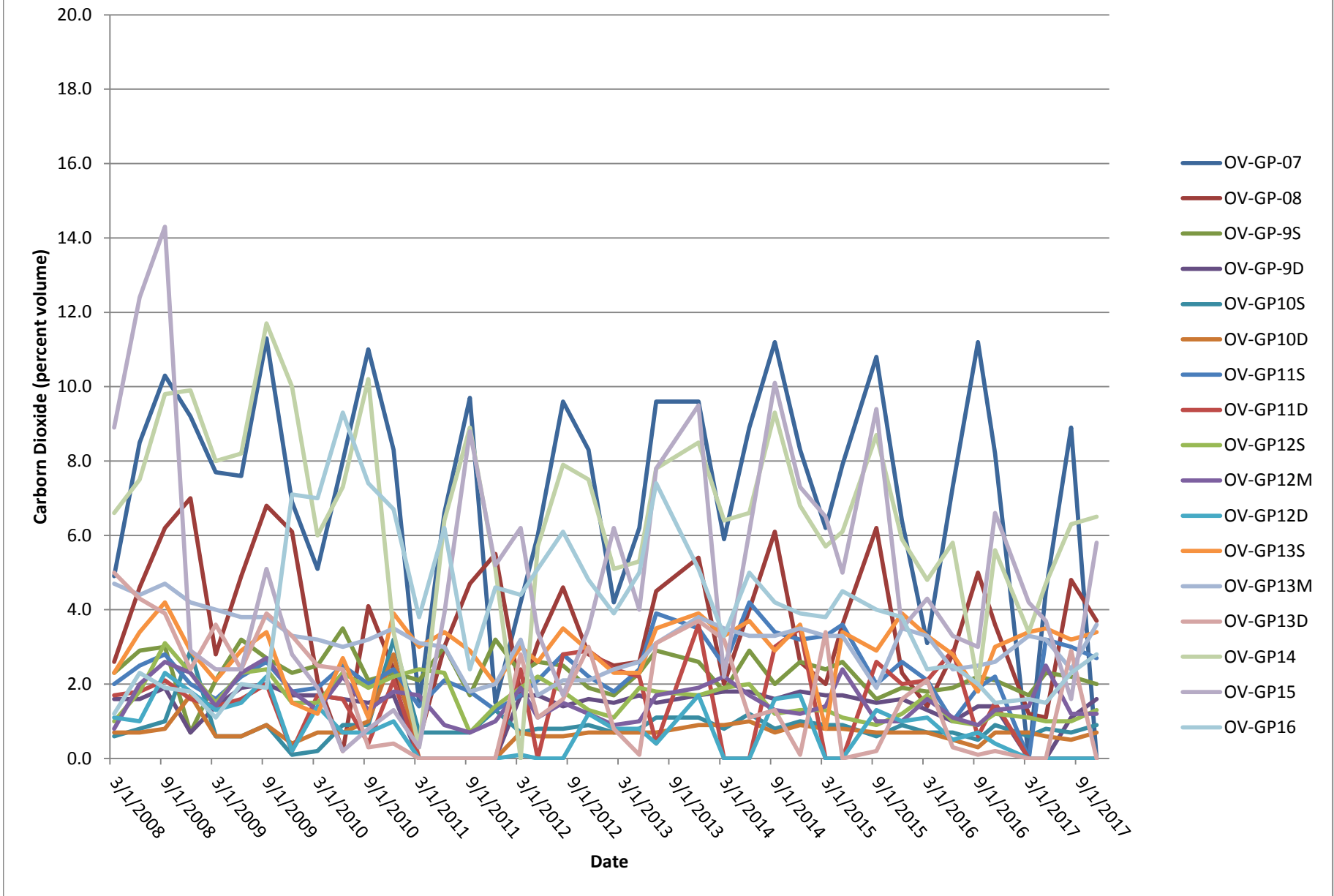


Figure E-3: LFG Probe Depressed Oxygen Timeseries

