2020 ANNUAL MONITORING REPORT

OLALLA LANDFILL

KITSAP COUNTY, WASHINGTON

MARCH 2021

Prepared by

TRC Environmental Corporation on behalf of
Kitsap County Department of Public Works
Port Orchard, Washington

State of Washington
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CHECKLIST FOR GROUNDWATER REPORTING
Municipal Solid Waste Landfills
WAC 173-351-415

Include a signed, completed copy of this checklist with each quarterly and annual report.

Quarterly groundwater reports shall be submitted to the jurisdictional health department and Ecology within 60 days of receipt of analytical data. Annual groundwater reports shall be submitted to the jurisdictional health department and Ecology by April 1 of each year.

1st_____ 2nd_____ 3rd _____ 4th __X__ YEAR 2020	Reference (section, subsection)	Included in this report	Location – page # or appendix #
***Quarterly Groundwater Reports**: 173-351-415 (2) plus the referenced section*			
Statistical calculations and summaries			
Descriptive statistics	420, (1)	☒	Pages 11-19
Statistical tests	420, (2)	☒	Pages 11-19
Notification of statistical increase (if applicable)	420, (4)	☒	Page 14
Notification of concentrations above Chapter 173-200 WAC criteria (if any)	430, (4)	☒	Pages 9-10
Static water level readings	415, (2)	☒	Appendix A
Potentiometric surface elevation maps depicting flow direction	415, (2)	☒	Page 7
Flow rate – calculated	415, (2)	☐	
Cation-anion balances	430, (5a)	☐	
Explanation of greater than 5% (or 10%) difference if needed	430, (5a)	☐	
Trilinear diagrams	430, (5b)	☐	
Leachate analyses (if sampled and tested)	415, (2)	☐	
Data entered into EIM database (date entered: January 22, 2021)	415, (3)	☒	Yes
Complete copy of the lab report with chain of custody record.		☒	Attachment 2
***Annual Groundwater Reports**: 173-351-415 (1)* **YEAR** 2020			
Summary of statistical results and trends	415, (1)	☒	Appendix B
Summary of groundwater flow rate and direction for the year	415, (1)	☒	Page 8
Copy of all potentiometric maps for the year	415, (1)	☒	Appendix A
Summary geochemical evaluation	415, (1)	☐	
For Quarterly and Annual Reports			
Stamped by a licensed professional	RCW 18.220	☒	Cover

Douglas Kunkel — Signature of Report Author
February 22, 2021 — Date
Olalla — Landfill

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INTRODUCTION

The Olalla Landfill (Landfill) is located approximately 0.75 miles east of Highway 16 on Burley-Olalla Road in Kitsap County, Washington. The Landfill was closed in 1989 in accordance with the Olalla Final Closure Plan (Parametrix 1988). Post-closure activities have consisted primarily of quarterly monitoring and maintenance per WAC 173-304-407 (Minimum Functional Standards for Solid Waste Handling [MFS]), "General Closure and Post Closure Requirements" Kitsap County Board of Health Ordinance 2010-01 "Solid Waste Regulations" and Solid Waste Handling Permits (SWHP) issued annually by the Kitsap Public Health District (KPHD).

A Remedial Investigation/Feasibility Study (RI/FS; Parametrix 2014a) was performed at the Landfill starting in May 2010 and ending May 2014 when the RI/FS was submitted to the Washington State Department of Ecology (Ecology) and KPHD. Upon approval of the RI/FS the Kitsap County Solid Waste Division (SWD) prepared a Cleanup Action Plan (CAP; Parametrix 2014b) to summarize the RI/FS activities and present the preferred cleanup action, which was selected based on the results of the RI/FS. Ecology and KPHD approved the CAP in December 2014.

The preferred cleanup action, monitored natural attenuation (MNA) and land use controls, is based on a continuation of ongoing groundwater, surface water, and landfill gas monitoring in accordance with the SWHP. Quarterly monitoring results will be used to evaluate the effectiveness of the cleanup action and to verify that natural attenuation continues to occur at the Landfill. The overall effectiveness of the cleanup action will be evaluated at 5-year intervals as part of the periodic review process.

Specific groundwater, surface water, and landfill gas monitoring methods and procedures that are performed under the requirements of MFS, the SWHP, and the CAP are documented in a Compliance Monitoring Plan (CMP; EPI 2015). The CMP integrates all the previously noted monitoring program requirements into one document that contains a site-specific Sampling and Analysis Plan (SAP), Quality Assurance Plan (QAP), and Health and Safety Plan (HASP).

Results of the December 2020 quarterly groundwater and landfill gas monitoring event performed under the SWHP, CAP, and CMP are documented in this report. December 2020 analytical and field data were uploaded to Ecology's Electronic Information Management (EIM) system on January 22, 2021.

This Annual Report documents the results of the fourth quarter 2020 groundwater, surface water, and landfill gas monitoring event and summarizes the results of the previous quarterly monitoring and reporting events completed at the Landfill in 2020, in accordance with WAC 173-304-405(4), CAP, CMP, and the 2016-2020 SWHP issued by KPHD on February 18, 2016.

In addition to this Introduction, the 2020 Annual Monitoring Report consists of four main sections: Monitoring Program Description, Monitoring Results, Statistical Analysis, and Conclusions. The Monitoring Program Description summarizes the monitoring well network and laboratory analyses. Landfill gas field measurement data, groundwater elevations, and groundwater analytical results are presented in the Monitoring Results section. The statistical data evaluation methods used in this report are consistent with recommended methods found in the 2009 *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities* (Unified Guidance; USEPA 2009). Results of statistical and non-statistical evaluations of the 2020 monitoring data are summarized in the Conclusions section.

MONITORING PROGRAM DESCRIPTION

The sampling locations, analytical parameters, and frequency of sample collection for groundwater, surface water, and landfill gas monitoring at the Landfill are specified in the 2016-2020 Permit issued by KPHD and dated February 18, 2016, the 2014 CAP, and the 2015 CMP. Monitoring well, landfill gas flare locations, and the surface water sampling location (SW-2) are shown on Figure 1. Specific information pertaining to the December 2020 monitoring event is summarized in the following bullets:

- TRC, performed groundwater sampling activities and measured landfill gas parameters at each of the three on-site passive landfill gas flares on December 29, 2020.

- Depth-to-water measurements were performed at all on-site monitoring wells on December 29, 2020. TRC field staff also measured the depth to water in well MW-5, which is screened in a discontinuous shallow perched groundwater zone that is not hydraulically connected to the uppermost aquifer beneath the Landfill.

- The field duplicate sample was inadvertently overlooked and not collected during the fourth quarter 2020 sampling event.

- Groundwater samples were hand-delivered to Analytical Resources, Inc. in Tukwila, Washington, for sample analysis on December 29, 2020.

- The surface water sample location, SW-2, was dry during the December 29, 2020, monitoring event. A surface water sample was collected on February 1, 2021, following several days of consistent rainfall.

- Samples were analyzed within their respective holding times except laboratory-measured pH samples from all wells. The pH holding time is 15 minutes, which cannot be achieved at the laboratory but is achieved by the field-measured pH data, which are used for the statistical evaluations.

- Data evaluations, statistical tests, and data reporting were performed by TRC in accordance with methods described in the Unified Guidance (USEPA 2009) and developed with input and direction from KPHD and Ecology and in accordance with procedures documented in the CAP and CMP.

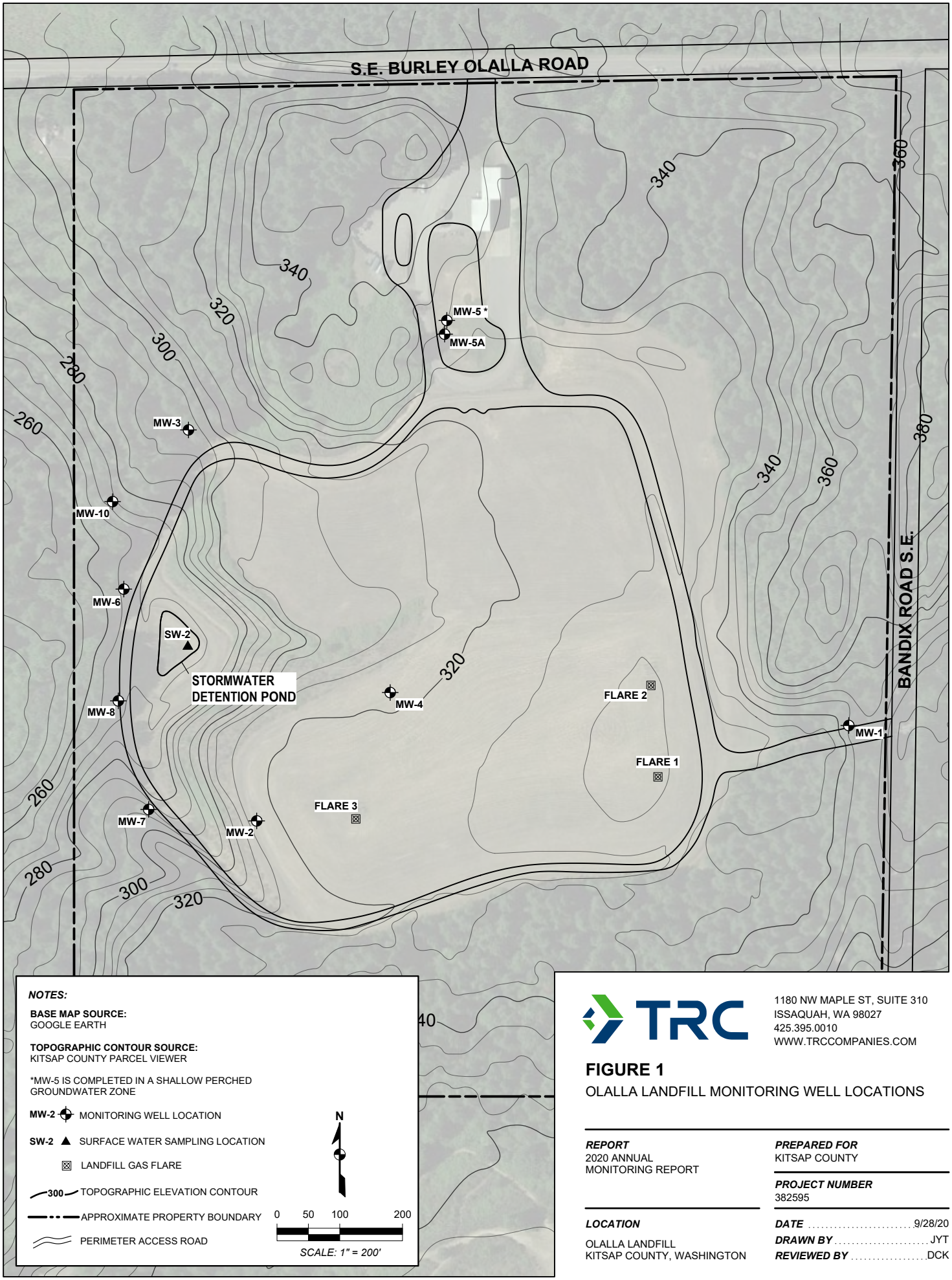

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FIGURE 1

OLALLA LANDFILL MONITORING WELL LOCATIONS

REPORT
2020 ANNUAL
MONITORING REPORT

PREPARED FOR
KITSAP COUNTY

PROJECT NUMBER
382595

LOCATION
OLALLA LANDFILL
KITSAP COUNTY, WASHINGTON

DATE 9/28/20
DRAWN BY JYT
REVIEWED BY DCK

MONITORING RESULTS

Results for 2020 quarterly monitoring events consist of landfill gas composition, groundwater elevations, calculated groundwater gradients and velocities, and groundwater quality data. A surface water sample was obtained during a separate mobilization following the December 2020 sampling event. The surface water sampling was performed on February 1, 2021 following several days of heavy precipitation. These data are summarized in this section and in Appendix A. Monitoring field notes associated with the four quarterly monitoring events and laboratory analytical data reports for 2020 are provided in electronic format in Attachments 1 and 2, respectively, on the CD-ROM submitted with this report.

Landfill Gas Data

Field measurements of landfill gas were taken from the three passive flares at the Landfill on March 17, June 17, September 17, and December 29, 2020. Landfill gas field measurement data summary tables are included in Appendix A. Data from the four quarterly landfill gas monitoring events performed in 2020 are summarized in the following sections.

March 17, 2020 – First Quarter

- Methane was detected in Flares 1, 2, and 3 at concentrations of 1.4%, 3.4%, and 11.9% by volume, respectively. Instrument-measured Lower Explosive Limit (LEL) values were 27-34%, 53-80%, and 100% for Flares 1, 2, and 3, respectively. During monitoring, LEL measurements varied over the range reported for Flares 1 and 2.

- Oxygen concentrations were 1.4%, 1.9%, and 0.2% by volume in Flares 1, 2, and 3, respectively.

- Carbon dioxide concentrations were 10.6%, 11.2%, and 12.8% by volume in Flares 1, 2, and 3, respectively.

- Gas pressure measurements were 0.01, 0.03, and 0.02 inches of water in Flares 1, 2, and 3, respectively.

June 17, 2020 – Second Quarter

- Methane, by percent of volume was not detected in any of the flares. Instrument-measured LEL values were 0%, 7%, and 0% for Flares 1, 2, and 3, respectively.

- Oxygen concentrations were 19.8%, 21.7%, and 20.7% by volume in Flares 1, 2, and 3, respectively.

- Carbon dioxide concentrations were 1.5%, 0%, and 0% by volume in Flares 1, 2, and 3, respectively.

- Gas pressure measurements were 0.05 inches of water in all three flares.

September 17, 2020 – Third Quarter

- Methane was not detected in Flare 1 but was detected at concentrations of 0.4% and 4.2% by volume in Flares 2 and 3, respectively. Instrument-measured LEL values were 0%, 9%, and 82% for Flares 1, 2, and 3, respectively.

- Oxygen concentration were 17.8%, 4.8%, and 0.7% by volume in Flares 1, 2, and 3, respectively.

- Carbon dioxide concentrations were 1.0%, 10.3%, and 15.2% by volume in Flares 1, 2, and 3, respectively.

- Gas pressure measurements were 0.15, 0.15, and 0.10 inches of water Flares 1, 2, and 3, respectively.

December 29, 2020 – Fourth Quarter

- Methane was not detected in Flares 2 or 3 but was detected in Flare 1 at a concentration of 0.4% by volume. Instrument-measured LEL values were 6%, 0%, and 0% for Flares 1, 2, and 3, respectively.

- Oxygen concentrations were 20.2%, 21.8%, and 21.8% by volume in Flares 1, 2, and 3, respectively.

- Carbon dioxide concentrations were 1.1%, 0%, and 0% by volume in Flares 1, 2, and 3, respectively.

- Pressure measurements were 0.14, 0.10, and 0.12 inches of water in Flares 1, 2, and 3, respectively.

Groundwater Elevation, Flow Direction, Gradient, and Velocity

All monitoring wells installed at the Landfill, except for MW-5, are screened in a laterally continuous sand and gravel unit that has been interpreted as belonging to the same aquifer unit (Parametrix 1988). Monitoring well MW-5 is screened in a shallow perched groundwater zone. Replacement monitoring well MW-5A was drilled at a nearby location to MW-5 and is screened in the same aquifer as the other monitoring wells at the Landfill.

The Permit and CAP do not require water level or water quality data to be collected from MW-5 as part of the monitoring program for the Landfill because the shallow perched groundwater zone in which MW-5 is completed is not hydraulically connected to the uppermost continuous aquifer in which the other Landfill monitoring wells are completed. However, SWD has elected to measure the depth to water in MW-5 as additional information. Depth-to-water measurements for MW-5 are included in the field notes presented in Attachment 1. The Permit and CAP specify annual monitoring of cross-gradient monitoring wells MW-5A and MW-7. As requested by the SWD, quarterly groundwater level measurements are made at MW-5A and MW-7 to provide a more comprehensive dataset for the groundwater elevation contour map and the groundwater elevation hydrograph.

The groundwater flow direction beneath the Landfill during the December 2020 monitoring event was generally toward the northwest as depicted on Figure 2. Based on the groundwater elevation contours the groundwater flow direction at the Landfill is toward the northwest, with potentially a western component near MW-3 and MW-10, as demonstrated by the quarterly groundwater elevation contour maps for all four quarters of 2020, which are presented in Appendix A.

Groundwater elevation contour patterns and flow directions have been consistent throughout all four seasons and over many years of quarterly water level measurements. The groundwater flow direction maps demonstrate that well MW-1 is consistently upgradient of the Landfill, wells MW-3, MW-6, MW-8, and MW-10 are consistently downgradient of the Landfill, and wells MW-5A and MW-7 are consistently cross-gradient to the Landfill.

Groundwater elevation data from 1991 through the fourth quarter of 2020 for each of the on-site MFS monitoring wells (except MW-5) are plotted and shown on the water level elevation time-series graph in Appendix A. December 2020 groundwater elevations were lower than December 2019 elevations in three of the nine wells, specifically upgradient well MW-1 (0.79 foot lower), interior well MW-4 (0.03 foot lower), and cross-gradient well MW-5A (0.58 foot lower). For the remaining six of nine wells, December 2020 groundwater elevations were higher than December 2019 elevations at differentials ranging from 0.25 foot in interior well MW-2 to 1.42 feet in downgradient well MW-8.

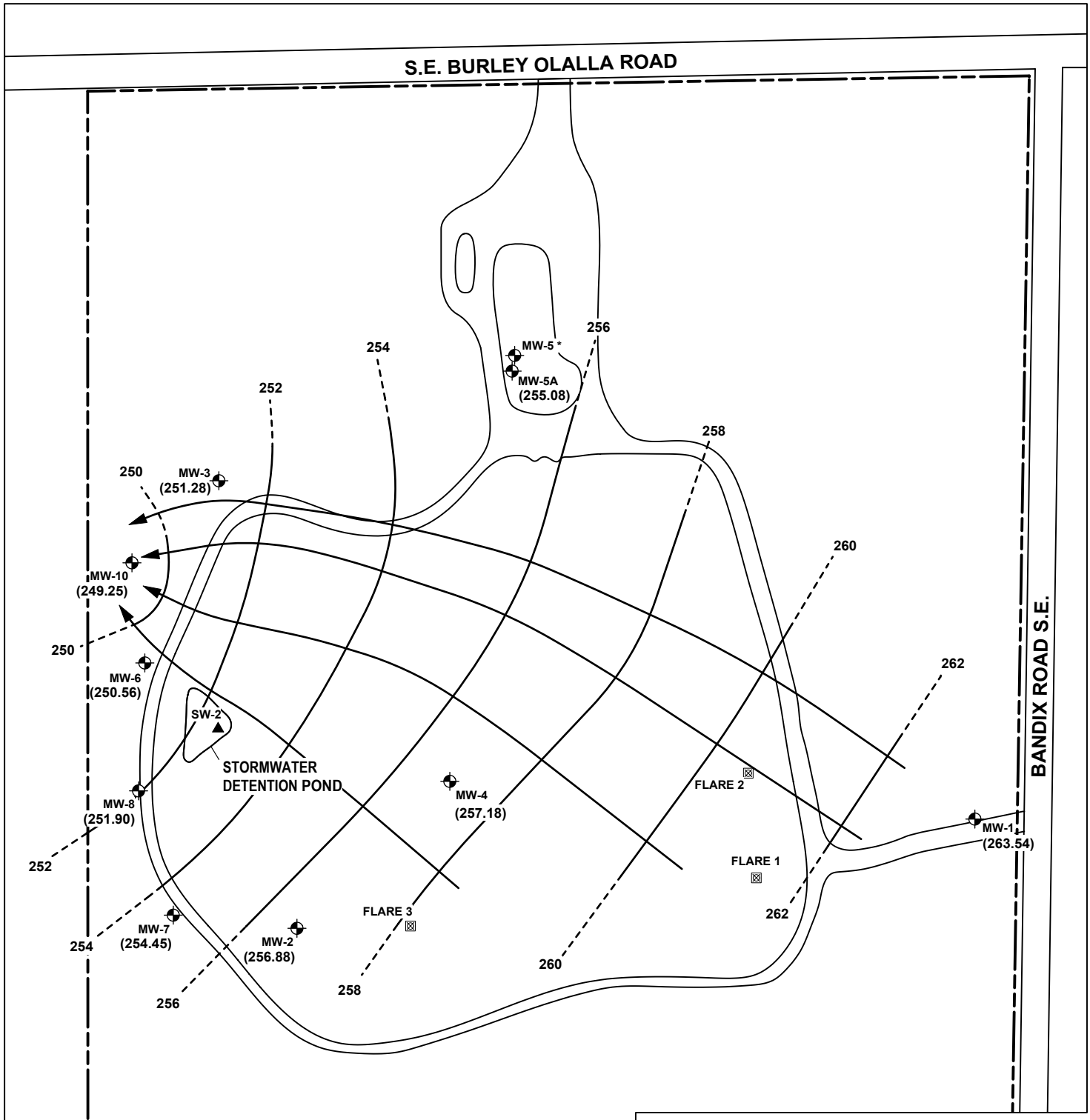
Precipitation data from the Seattle-Tacoma International Airport Weather Station (KSEA) indicate that during the 2020 water year (November 2019 to October 2020) the area near the Landfill received 37.88 inches of precipitation, which is greater than the 35.72 inches of precipitation for the 2019 water year (Weather Underground, Station KSEA 2021). The greater rainfall total for the 2020 water year is consistent with higher groundwater elevations in six of the nine monitoring wells.

Groundwater flow rates based on the quarterly groundwater elevation contour maps have been calculated based on a modified form of Darcy's Law:

$$V = KI/n$$

Where: V = average linear velocity (L/T)
K = hydraulic conductivity (L/T)
I = hydraulic gradient (L/L [dimensionless])
n = effective porosity (percent expressed as a decimal)

The hydraulic conductivity "K" of the aquifer was calculated from the results of single well aquifer tests performed in monitoring wells MW-1, MW-2, MW-3, and MW-4. The range of values obtained from these tests indicated that the hydraulic conductivity of the uppermost aquifer at the Landfill is approximately 7 x 10^{-3} to 3 x 10^{-2} centimeters per second (cm/sec), with a mean value of 2.2 x 10^{-2} cm/sec (62.4 feet/day) (Parametrix 1988). This mean value correlates with the hydraulic conductivity values calculated using the Hazen equation for soil samples collected from the screened intervals from the boreholes for MW-8 and MW-10. Hazen equation calculated hydraulic conductivity values for soil at MW-8 and MW-10 are 1.2 x 10^{-2} cm/sec (34 feet/day) and 1.4 x 10^{-2} cm/sec (40 feet/day), respectively. The mean hydraulic conductivity value from the single well aquifer tests of 2.2 x 10^{-2} cm/sec is used for groundwater velocity calculations presented below.



NOTES:
* *MW-5 IS COMPLETED IN A SHALLOW PERCHED GROUNDWATER ZONE.*

- MW-2 — MONITORING WELL LOCATION
- SW-2 — SURFACE WATER SAMPLING LOCATION
- LANDFILL GAS FLARE
- GROUNDWATER ELEVATION CONTOUR
- INFERRED GROUNDWATER FLOW PATH
- APPROXIMATE PROPERTY BOUNDARY
- PERIMETER ACCESS ROAD

N

0 50 100 200

SCALE: 1" = 200'

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FIGURE 2

OLALLA LANDFILL GROUNDWATER ELEVATION CONTOUR MAP - DECEMBER 29, 2020

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2020 ANNUAL MONITORING REPORT

PREPARED FOR
KITSAP COUNTY

PROJECT NUMBER
382595

LOCATION
OLALLA LANDFILL
KITSAP COUNTY, WASHINGTON

DATE 1/21/26
DRAWN BY ..... DCK
REVIEWED BY ..... DCK

The hydraulic gradients "I" of the aquifer for each monitoring event are calculated from quarterly groundwater elevation contour maps presented in Appendix A. Average hydraulic gradients calculated for the four 2020 quarterly events at the Landfill range from 0.0129 in December to 0.0157 in September. The effective porosity "n" of the aquifer is estimated to be 0.40, which is a typical value for fine to medium sand (Freeze and Cherry 1979).

The resulting groundwater flow velocities "V" calculated from 2020 quarterly data range from 2.01 feet/day in December to 2.45 feet/day in September. The calculated groundwater gradients and flow velocities are summarized in Table 1.

Table 1
2020 Olalla Landfill Calculated Groundwater Flow Velocities

Measurement Date	Calculated Hydraulic Gradient (L/L)	Calculated Groundwater Flow Velocity (feet/day)
March 19, 2020	0.0133	2.07
June 17, 2020	0.0145	2.26
September 17, 2020	0.0157	2.45
December 29, 2020	0.0129	2.01

Surface Water Quality Data

Section IV.D.3.a of the KPHD-issued 2016-2020 SWHP for the Landfill states that surface water samples shall be collected at location SW-2 (see Figure 1) between January and March or between November and December if there is enough water for a sample. Surface water station SW-2 was dry during the December 29, 2020 sampling event. Samplers returned to the landfill on February 1, 2021, after several days of heavy rain, and collected a surface water sample from SW-2. The following exceedances were noted in surface water data:

Field- and laboratory-measured pH values for SW-2 surface water were 5.2 and 6.4 standard pH units, respectively. These pH values are lower than the Washington State Surface Water Standard (WAC 173-201A-200) of 6.5 to 8.5 standard pH units.

Surface water quality data are presented in Appendix A. Analytical results (laboratory data sheets) are provided as an electronic file (a PDF file) in Attachment 1 on the CD-ROM for this report to reduce the amount of paper required to produce this report.

Groundwater Quality Data

A summary of the groundwater quality data for the four quarterly events of 2020 is presented in Appendix A. Laboratory data sheets for all field samples, duplicates, and laboratory quality control samples reported by ARI are provided as an electronic file in Attachment 2 of the CD-ROM for this report.

Exceedances of Primary Regulatory Standards

Constituent concentrations in groundwater that exceeded Washington State Drinking Water Primary Standards (WAC 246-290-310) or Washington State Groundwater Primary Standards (WAC 173-300-040) are summarized in Table 2.

Table 2
2020 Water Quality Constituent Concentrations
Exceeding Washington State Primary Standards

Constituent	Drinking Water Standards[a]	Groundwater Quality Standards[b]	Site-Specific CUL[c]	March	June	Sept.	Dec.
MW-1 (upgradient)							
Arsenic	10 µg/L	0.05 µg/L	1.29 µg/L	0.11	0.11	0.09	0.09
MW-3 (downgradient)							
Arsenic	10 µg/L	0.05 µg/L	1.29 µg/L	0.10	0.12	0.11	0.11
Arsenic FD	10 µg/L	0.05 µg/L	1.29 µg/L	0.09	NA	NA	NA
MW-5A (cross-gradient)							
Arsenic	10 µg/L	0.05 µg/L	1.29 µg/L	NA	NA	NA	0.21
MW-6 (downgradient)							
Arsenic	10 µg/L	0.05 µg/L	1.29 µg/L	0.45	0.44	0.44	0.31
Arsenic FD	10 µg/L	0.05 µg/L	1.29 µg/L	NA	0.43	NA	NA
MW-7 (cross-gradient)							
Arsenic	10 µg/L	0.05 µg/L	1.29 µg/L	NA	NA	NA	0.28
MW-8 (downgradient)							
Arsenic	10 µg/L	0.05 µg/L	1.29 µg/L	1.89	0.99	0.69	1.60
Arsenic FD	10 µg/L	0.05 µg/L	1.29 µg/L	NA	NA	0.72	NA
MW-10 (downgradient)							
Arsenic	10 µg/L	0.05 µg/L	1.29 µg/L	1.75	2.24	1.96	2.52

Notes:
Values are reported in the same units as the regulatory standards.
µg/L = Micrograms per liter.
FD = Field Duplicate.
NA = Not Applicable or Not Analyzed per the SWHP.
[a] WAC 246-290-310.
[b] WAC 173-200-040.
[c]Site-Specific Cleanup Level

Exceedances of Secondary Regulatory Standards

Constituent concentrations in groundwater that exceeded Washington State Drinking Water Secondary Standards (WAC 246-290-310) and Washington State Groundwater Secondary Standards (WAC 173-300-040) are summarized in Table 3.

Table 3
2020 Water Quality Constituent Concentrations
Exceeding Washington State Secondary Standards

Constituent	Drinking Water Standards[a]	Groundwater Quality Standards[b]	March	June	Sept.	Dec.
MW-1 (upgradient)						
pH (field)	NA	6.5 – 8.5	6.4	--	6.2	5.7
pH (lab)	NA	6.5 – 8.5	6.1	--	6.3	5.9
MW-3 (downgradient)						
Manganese	50 µg/L	50 µg/L	4,310	8,130	6,080	4,090
Manganese FD	50 µg/L	50 µg/L	4,310	NA	NA	NA
pH (field)	NA	6.5 – 8.5	6.4	6.2	6.3	5.8
pH (lab)	NA	6.5 – 8.5	6.3	6.2	6.2	6.2
pH (lab) FD	NA	6.5 – 8.5	6.2	NA	NA	NA
MW-5A (cross-gradient)						
pH (field)	NA	6.5 – 8.5	NA	NA	NA	6.2
pH (lab)	NA	6.5 – 8.5	NA	NA	NA	6.3
MW-6 (downgradient)						
Iron	300 µg/L	300 µg/L			384	
Manganese	50 µg/L	50 µg/L	316	524	513	324
Manganese FD	50 µg/L	50 µg/L	NA	519	NA	NA
pH (field)	NA	6.5 – 8.5	--	--	--	6.4
pH (lab)	NA	6.5 – 8.5	6.4	--	--	--
pH (lab) FD	NA	6.5 – 8.5	NA	6.4	NA	NA
MW-7 (cross-gradient)						
--	NA	NA	NA	NA	NA	--
MW-8 (downgradient)						
Iron	300 µg/L	300 µg/L	770	317	--	706
Iron FD	300 µg/L	300 µg/L	NA	NA	--	NA
Manganese	50 µg/L	50 µg/L	2,760	2,130	2,140	2,430
Manganese FD	50 µg/L	50 µg/L	NA	NA	2,130	NA
pH (field)	NA	6.5 – 8.5	--	--	6.3	--
pH (lab)	NA	6.5 – 8.5	6.4	--	--	5.5
MW-10 (downgradient)						
Manganese	50 µg/L	50 µg/L	4,180	5,100	4,060	3,740
pH (field)	NA	6.5 – 8.5	--	--	--	6.4
pH (lab)	NA	6.5 – 8.5	--	6.2	--	--

Notes:
Values are reported in the same units as the regulatory standards
FD = Field Duplicate
NA = Not Applicable or Not Analyzed per the SWHP
-- = Analyzed with no regulatory exceedance
[a] WAC 246-290-310 and Site-Specific Cleanup Level
[b] WAC 173-200-040

STATISTICAL ANALYSIS

SWD and EPI developed the current statistical evaluation process used in this report with input and direction from KPHD and Ecology. KPHD and Ecology referenced the EPA 2004 Unified Guidance as the basis for evaluating appropriate statistical methods for Landfill groundwater data. The statistical methods used in this report are consistent with recommended methods found in the Unified Guidance, which was updated in 2009 (USEPA 2009).

Statistical analysis of groundwater data for the Landfill uses four tools: time-series plots, Mann-Kendall test for trend, Shapiro-Wilk test for normality, and confidence intervals (parametric and non-parametric). Application of these tools is based on statistical methods identified in the Unified Guidance and is documented in the CAP. These four statistical tools, along with non-statistical data evaluation tools, are applied to the data following the process shown on Figure 3.

Statistical analyses are performed on a dataset consisting of a moving window of the 20 most recent sampling events (as one new data point is added the oldest data point is dropped). For most wells, this is a 5-year moving window of data. Wells MW-5A and MW-7 are on an annual sampling schedule and SWD has defined the window of data used for the Mann-Kendall, Shapiro-Wilk and 95% Confidence Interval statistical analyses as 20 sampling events rather than 5 years of data. The moving window of 20 sampling events provides enough data points for adequate statistical power while focusing the statistical evaluations on the most recent and most relevant data. Statistical analyses for the Landfill groundwater monitoring data are performed using the following criteria:

- Dissolved metals, volatile organic compounds (VOCs), conventional water quality parameters, and field parameters required for groundwater analysis under the current Section IV.D.2 Solid Waste Handling Permit for Olalla Landfill are presented in time-series plots (Appendix B), and tables showing summary results of the Mann-Kendall trend test, Shapiro-Wilk test for normality, and 95% confidence intervals.

- Statistical tests are not automatically performed for every constituent or parameter measured. Some constituents have not been detected in samples collected during the past 5 years (20 events) or do not have enough detections to support one or more of the statistical analysis. Datasets that are all non-detects, or do not have enough detections for statistical analysis, are temporarily dropped from the specific statistical evaluations that are not amenable to those datasets.

- VOC and metals detections include values at concentrations less than laboratory specified reporting limits (i.e., J-qualified), but do not include values where the constituent was also detected in the method blank (i.e., values qualified with a “B”).

- Beginning in 2012, wells MW-5A and MW-7 are sampled at a reduced (annual) frequency and for a reduced list of constituents relative to the other Olalla Landfill monitoring wells. Thus, the statistical evaluations at MW-5A and MW-7 ended in 2012 for some constituents that were no longer analyzed but will continue at a reduced frequency for other constituents that are analyzed annual in samples from these two wells.

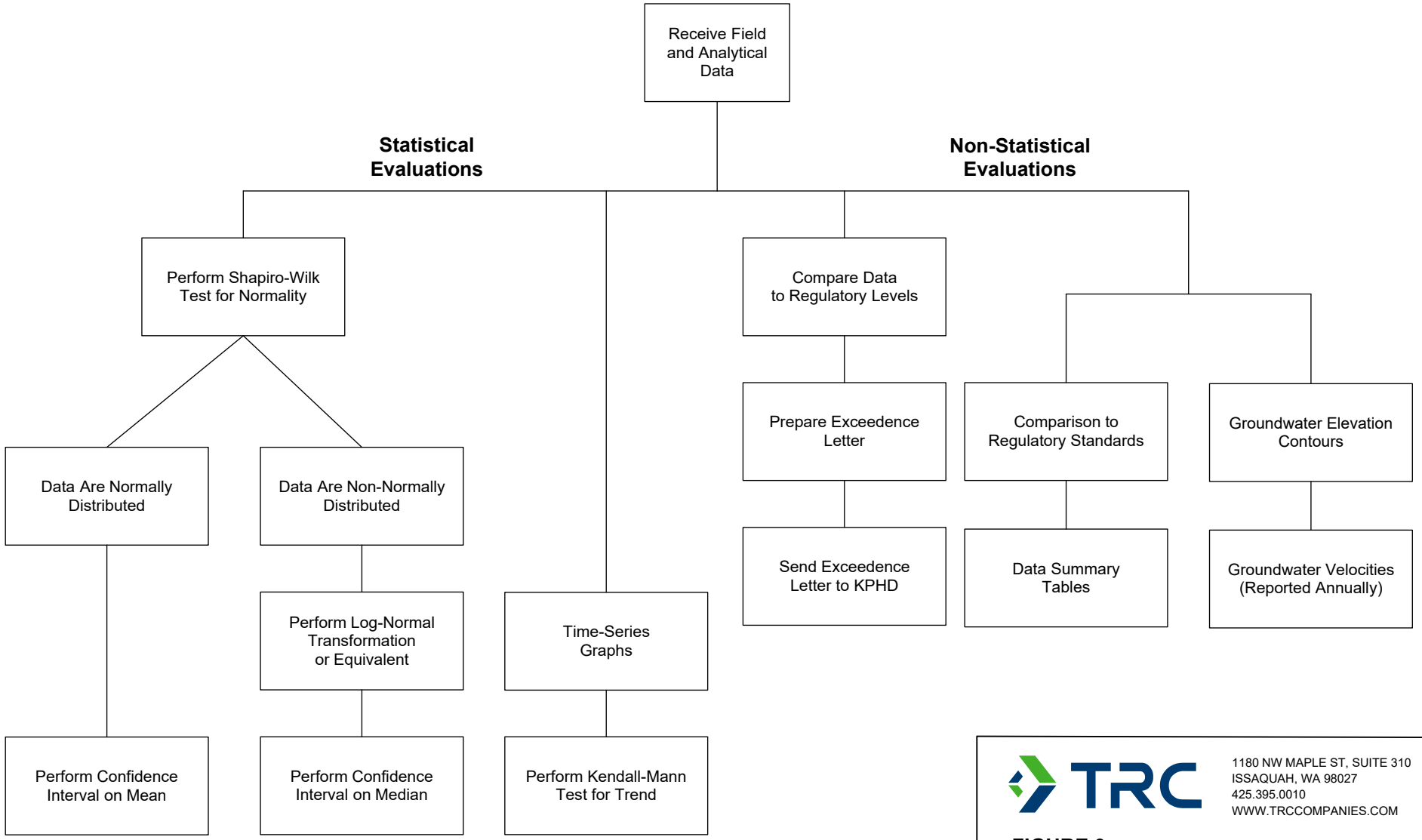

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FIGURE 3
DATA EVALUATION PROCESS
FOR OLALLA LANDFILL GROUNDWATER DATA

REPORT
2020 ANNUAL
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PREPARED FOR
KITSAP COUNTY

PROJECT NUMBER
382595

LOCATION
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DATE 1/21/26
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REVIEWED BY DCK

- Non-detections are managed by assigning them a uniform value that is less than the reporting limit for that constituent as prescribed in Section 14.4.2.2 of the Unified Guidance. Guidance from the United States Geological Survey (USGS 2008) suggests that censoring values that are less than the detection limit (non-detects) provides more accurate statistical results compared to substituting a value, commonly one half of the reporting limit. The SWD assigns a value of zero to non-detected results as recommended by the USGS and KPHD. J-qualified analytical results are reported as individual detected values as recommended by the USGS guidance.

The following subsections briefly describe the tools used in the statistical evaluation and summarize analytical results for the current year.

Time-Series Plots

Time-series plots are used to compare field measurements or analytical results from a well or a set of wells over time. The plots provide a convenient graphical means of delineating seasonal trends and large differences in concentration between upgradient and downgradient wells and can be used to readily identify data that exceed regulatory levels. Time-series plots are presented by constituent for upgradient well MW-1, cross-gradient wells MW-5A and MW-7, and downgradient wells MW-3, MW-6, MW-8, and MW-10.

Historical data are presented as two time-series plots for each of the four COCs. The first time-series plot presents all quarterly data from 1992, when groundwater monitoring was initiated at the Landfill, to the present quarter. This time-series plot is useful to graphically demonstrate that groundwater quality has improved over time. Because MW-8 and MW-10 were installed in 2010, their datasets are smaller than other wells in the full time-series plots. The second time-series plot presents the most recent 5 years of data and provides a greater level of detail than is more readily seen at the scale required for full time-series plots that graph all historical results. Washington State drinking water and groundwater regulatory levels and site-specific CULs are shown graphically on time-series plots when applicable.

Mann-Kendall Trend Test

The Mann-Kendall trend test is a non-parametric statistical method recommended in the Unified Guidance for sites in the compliance assessment and corrective action monitoring phases and is appropriately paired with time-series plots. For this report, the Mann-Kendall trend test is used to determine if upward or downward data trends graphically presented in time-series plots are statistically significant. The Mann-Kendall test is applied to the same five-year moving window of data described in the Time-Series Plots section. December 2020 Mann-Kendall Trend Test results are presented in Table 4 and are summarized in the following bullets. Tabulated Mann-Kendall trend test results for all four quarters of 2020 are presented in Appendix B.

As described in the 2016-2020 SWHP, cross-gradient wells MW-5A and MW-7 are sampled annually, during the fourth quarter, for a reduced list of constituents relative to the other Olalla Landfill monitoring wells.

Table 4: December 2020 Mann-Kendall Statistically Significant Trend Test Results

Constituent or Parameter	MW-1	MW-3	MW-5A	MW-6	MW-7	MW-8	MW-10
Ammonia (N)	**DOWN**	NO TREND	NA	NO TREND	NA	NO TREND	NO TREND
Arsenic - Dissolved	NO TREND	NO TREND	NO TREND	**DOWN**	**DOWN**	**DOWN**	**UP**
Barium - Dissolved	NO TREND	NO TREND	NA	**UP**	NA	NO TREND	NO TREND
Bicarbonate	NO TREND	NO TREND	NA	NO TREND	NA	NO TREND	NO TREND
Calcium	NO TREND	NO TREND	NA	NO TREND	NA	NO TREND	NO TREND
Carbonate	NO TREND	NO TREND	NA	NO TREND	NA	NO TREND	NO TREND
COD	NO TREND	NO TREND	NA	NO TREND	NA	NO TREND	**DOWN**
Chloride	NO TREND	NO TREND	NA	NO TREND	NA	NO TREND	NO TREND
Dissolved Oxygen	**DOWN**	NO TREND	**UP**	NO TREND	NO TREND	NO TREND	NO TREND
Iron - Dissolved	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Manganese - Dissolved	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND	**DOWN**
Nitrate	**DOWN**	NO TREND	NA	NO TREND	NA	**DOWN**	NO TREND
Nitrite	NO TREND	NO TREND	NA	NO TREND	NA	NO TREND	NO TREND
Oxidation Reduction Potential	**UP**	**UP**	NO TREND	**UP**	NO TREND	**UP**	**UP**
pH - Field	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND	**UP**
pH - Laboratory	NO TREND	NO TREND		NO TREND		NO TREND	NO TREND
Potassium	NO TREND	NO TREND	NA	NO TREND	NA	NO TREND	**UP**
Sodium	NO TREND	NO TREND	NA	**UP**	NA	NO TREND	**UP**
Specific Conductance	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Sulfate	NO TREND	NO TREND	NA	NO TREND	NA	NO TREND	NO TREND
Temperature	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Total Coliform	NO TREND	NO TREND	NA	NO TREND	NA	NO TREND	NO TREND
TOC	NO TREND	NO TREND	NA	NO TREND	NA	**DOWN**	NO TREND
Vinyl Chloride	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND	**DOWN**	NO TREND
Zinc - Dissolved	NO TREND	NO TREND	NA	NO TREND	NA	NO TREND	NO TREND

NO TREND = No statistically significant trend or data set has four or fewer detections and cannot be evaluated.
UP = Statistically significant upward trend.
DOWN = Statistically significant downward trend.

- Eleven well-constituent combinations have statistically significant downward concentration trends. The downward well-constituent combination trends are:

    - Ammonia: MW-1
    - Arsenic: MW-6, MW-7, and MW-8
    - Chemical Oxygen Demand: MW-10
    - Dissolved Oxygen: MW-1
    - Manganese: MW-10
    - Nitrate: MW-1 and MW-8
    - Total Organic Carbon: MW-8
    - Vinyl Chloride: MW-8

- Four of the well-constituent combinations with statistically significant downward concentration trends also have regulatory standard exceedances in December 2020 data. The well-constituent combinations with downward trends and current regulatory exceedances are:

    - Arsenic: MW-6, MW-7, and MW-8
    - Manganese: MW-10

- Twelve well-constituent combinations have statistically significant upward concentration trends. The upward well-constituent combination trends are:

    - Arsenic: MW-10
    - Barium: MW-6
    - Dissolved Oxygen: MW-5A
    - Oxidation Reduction Potential: MW-1, MW-3, MW-6, MW-8, and MW-10
    - pH (field): MW-10
    - Potassium: MW-10
    - Sodium: MW-6 and MW-10

- Two of the well-constituent combinations with statistically significant upward concentration trends also have regulatory standard exceedances in December 2020 data. The well-constituent combinations with upward trends and current regulatory exceedances are:

    - Arsenic: MW-10
    - pH (field): MW-10

- There are 152 well-constituent combinations that have no statistically significant concentration trend, or the constituents are no longer analyzed in wells MW-5A and MW-7 per the SWHP. Of the well-constituent combinations with no statistically significant trends, the following 15 well-constituent combinations exceed regulatory levels.

    - Arsenic: MW-1, MW-3, and MW-5A
    - Iron: MW-8
    - Manganese: MW-3, MW-6, and MW-8
    - pH (field): MW-1, MW-3, MW-5A, and MW-6
    - pH (laboratory): MW-1, MW-3, MW-5A, and MW-8

Shapiro-Wilk Test for Normality

The Shapiro-Wilk Test for Normality is a method recommended in the Unified Guidance for evaluating if datasets are normally distributed. The Shapiro-Wilk Test for Normality is applied annually to the 5-year moving window of analytical data for each well-constituent pair that has enough data points to apply this statistical method. Shapiro-Wilk results for the current monitoring event are summarized in Table 5 and in the following bullets. Shapiro-Wilk result summary tables for all four quarters of 2020 are presented in Appendix B.

As described in the Mann-Kendall Trend Test section, MW-5A and MW-7 are sampled annually and for a reduced list of constituents relative to the other Olalla Landfill monitoring wells and the Shapiro-Wilk statistical evaluations of the reduced list of constituents are included in Table 5.

- There are 175 well-constituent combinations presented in Table 5 and 67 well-constituent combinations had fewer than four detections and could not be tested for normality or the constituents are no longer analyzed in wells MW-5A and MW-7 per the SWHP; the remaining 108 well-constituent combinations were tested for normality.

- Normal data distributions were noted in 57 of the well-constituent combinations that were tested for normality.

- Non-normal data distributions were noted in 51 of the well-constituent combinations tested for normality.

Data that are normally distributed are evaluated using the 95% confidence interval around the mean (a parametric statistical test). Data that are not normally distributed are adjusted by log-normal transformation prior to being evaluated using the 95% confidence interval around the median (a non-parametric statistical test).

Confidence Interval

The statistical test for confidence interval is recommended in the Unified Guidance and is appropriate for compliance assessment and corrective action monitoring phases. In addition, evaluation of the confidence interval is appropriate when analytical data are compared to a fixed limit such as a regulatory standard. Confidence intervals are a common and statistically defensible way to assess compliance with a fixed numerical limit.

The moving window of 20 data points was evaluated for the 95% confidence interval for each well-constituent pair that had enough data points to apply this statistical method. The moving window of 20 data points adds new data with each successive sampling event and drops data from the oldest sampling event to maintain a consistent sample population of the most current 20 data points.

Confidence intervals for December 2020 are compared to Washington State Drinking Water Standards, Groundwater Quality Standards, and, in the case of arsenic and vinyl chloride, to Site-Specific CULs. The results of these comparisons are summarized in Table 6. Confidence interval summary tables for all four quarters of 2020 are presented in Appendix B.

Table 5: December 2020 Shapiro-Wilk Test for Normality Results

Constituent or Parameter	MW-1	MW-3	MW-5A	MW-6	MW-7	MW-8	MW-10
Ammonia (N)	ND	ND	NA	Non-normal	NA	Non-normal	Normal
Arsenic - Dissolved	Normal	Non-normal	Normal	Normal	Normal	Normal	Normal
Barium - Dissolved	Non-normal	Normal	NA	Normal	NA	Normal	Normal
Bicarbonate	Non-normal	Non-normal	NA	Non-normal	NA	Non-normal	Non-normal
Calcium	Normal	Normal	NA	Normal	NA	Normal	Normal
Carbonate	ND	ND	NA	ND	NA	ND	ND
COD	ND	Non-normal	NA	ND	NA	ND	Non-Normal
Chloride	Normal	Non-normal	NA	Normal	NA	Non-normal	Normal
Dissolved Oxygen	Normal	Non-normal	Normal	Non-normal	Non-normal	Normal	Non-normal
Iron - Dissolved	ND	ND	ND	Normal	ND	Non-normal	Non-normal
Manganese - Dissolved	ND	Normal	ND	Normal	ND	Non-normal	Normal
Nitrate	Non-normal	Non-normal	NA	Non-normal	NA	Non-normal	Non-normal
Nitrite	ND	ND	NA	ND	NA	ND	ND
Oxidation-Reduction Potential	Normal	Non-normal	Normal	Non-normal	Normal	Non-normal	Normal
pH - Field	Non-normal	Non-normal	Normal	Non-normal	Normal	Normal	Normal
pH - Laboratory	Non-normal	Non-normal	Normal	Non-normal	Non-normal	Non-normal	Non-normal
Potassium	Non-normal	Non-normal	NA	Non-normal	NA	Non-normal	Non-normal
Sodium	Normal	Normal	NA	Normal	NA	Normal	Normal
Specific Conductance	Non-normal	Normal	Normal	Normal	Normal	Normal	Normal
Sulfate	Normal	Non-normal	NA	Non-normal	NA	Normal	Non-normal
Temperature	Non-normal	Normal	Normal	Normal	Normal	Normal	Non-normal
Total Coliform	ND	ND	NA	ND	NA	ND	ND
TOC	ND	Normal	NA	Normal	NA	Normal	Normal
Vinyl Chloride	ND	ND	ND	Non-normal	ND	Non-normal	Non-normal
Zinc - Dissolved	ND	ND	NA	ND	NA	ND	ND

Notes:
ND = Data set has four or fewer quarters with detects and statistical tests cannot be performed.
NA = Not analyzed per the SWHP

Table 6: December 2020 Results of 95% Confidence Interval Evaluations

Constituent or Parameter	MW-1	MW-3	MW-5A	MW-6	MW-7	MW-8	MW-10	Regulatory Level	Basis for Comparison
Ammonia (N)	ND to 40	ND	NA	ND to 41	NA	ND to 40	82 to 89	None	
Arsenic - Dissolved	**0.09 to 0.10**	**0.107 to 0.118**	**0.198 to 0.209**	**0.801 to 1.10**	**0.276 to 0.370**	**1.36 to 1.89**	**1.67 to 1.98**	0.05 µg/L	Primary GW Standard
Arsenic - Dissolved	**0.09 to 0.10**	**0.107 to 0.118**	**0.198 to 0.209**	**0.801 to 1.10**	**0.276 to 0.370**	**1.36 to 1.89**	**1.67 to 1.98**	1.29 µg/L	Site-Specific Cleanup Level
Barium - Dissolved	**ND to 4.0**	**13.7 to 16.2**	NA	**12.8 to 16.2**	NA	**5.70 to 7.86**	**14.18 to 16.98**	1000 µg/L	Primary GW Standard
Bicarbonate (mg of $CaCO_3$/L)	41.4 to 49.8	186 to 253	NA	156 to 183	NA	111 to 173	192 to 227	None	
Calcium	10,017 to 10,851	37,431 to 47,349	NA	31,508 to 36,982	NA	21,226 to 27,024	37,661 to 42,179	None	
Carbonate (mg of $CaCO_3$/L)	ND	ND	NA	ND	NA	ND	ND	None	
COD	ND	ND	NA	ND	NA	ND	ND to 12.6	None	
Chloride	**3,397 to 3,992**	**2,260 to 3,180**	NA	**2,663 to 3,622**	NA	**2,300 to 2,890**	**5,219 to 8,435**	250,000 µg/L	Secondary GW and DW Standard
Dissolved Oxygen (mg/L)	9.88 to 10.3	0.14 to 0.65	9.96 to 10.5	0.20 to 0.40	NA*	8.54 to 17.5	0.18 to 0.58	None	
Iron - Dissolved	**ND**	**ND**	**ND**	**587 to 894**	**ND**	**317 to 799**	**ND to 22.5**	300 µg/L	Secondary GW and DW Standard
Manganese - Dissolved	**ND**	**5,316 to 6,729**	**ND**	**613 to 799**	**ND**	**2,350 to 3,020**	**4,268 to 4,857**	50 µg/L	Secondary GW and DW Standard
Nitrate	**332 to 964**	**ND to 35.9**	NA	**ND to 24.0**	NA	**39.8 to 108**	**ND**	10,000 µg/L	Primary GW and DW Standard
Nitrite	**ND to 10**	**ND**	NA	**ND to 10**	NA	**ND to 10**	**ND**	1,000 µg/L	Primary DW Standard
Oxidation-Reduction Potential	211 to 258	224 to 256	169 to 286	15.0 to 36.9	95.2 to 280	42.7 to 79.9	107 to 145	None	
pH - Field	**6.2 to 6.5**	**6.1 to 6.3**	**6.3 to 6.9**	**6.4 to 6.7**	**6.6 to 6.7**	**6.5 to 6.6**	**6.5 to 6.6**	6.5 - 8.5	Secondary GW Standard
pH - Laboratory	**6.2 to 6.4**	**6.1 to 6.3**	**6.4 to 6.8**	**6.5 to 6.6**	NA*	**6.3 to 6.6**	**6.5 to 6.6**	6.5 - 8.5	Secondary GW Standard
Potassium	590 to 650	677 to 918	NA	1,170 to 1,530	NA	939 to 1,030	1,160 to 1,310	None	
Sodium	**4,239 to 4,495**	**8,189 to 9,539**	NA	**7,746 to 9,378**	NA	**7,575 to 8,560**	**10,680 to 13,268**	20,000 µg/L	Secondary DW Standard
Specific Conductance (µmhos/cm)	**108 to 120**	**284 to 426**	**60.1 to 187**	**261 to 331**	**79.5 to 108**	**219 to 288**	**387 to 439**	700 µmhos/cm	Secondary DW Standard
Sulfate	**3,795 to 4,295**	**12,900 to 20,200**	NA	**6,140 to 8,470**	NA	**4,258 to 4,915**	**7,920 to 10,100**	250,000 µg/L	Secondary GW and DW Standard
Temperature (°C)	10.8 to 10.9	11.7 to 11.9	11.5 to 12.3	11.1 to 11.4	10.8 to 11.3	10.4 to 10.9	11.2 to 11.4	None	
Total Coliform (count)	**ND**	**ND**	NA	**ND**	NA	**ND**	**ND**	1/100mL	Primary GW and DW Standard
TOC	ND	2,254 to 2,765	NA	1,877 to 2,099	NA	776 to 1,075	3,003 to 3,331	None	
Vinyl Chloride	**ND**	**ND**	**ND**	**ND to 0.02**	**ND**	**ND to 0.06**	**ND**	0.02 µg/L	Primary GW Standard
Vinyl Chloride	**ND**	**ND**	**ND**	**ND to 0.02**	**ND**	**ND to 0.06**	**ND**	0.29 µg/L	Site-Specific Cleanup Level
Zinc - Dissolved	**ND**	**ND**	NA	**ND**	NA	**ND**	**ND**	5,000 µg/L	Secondary GW and DW Standard

Notes:

All concentrations reported as µg/L unless otherwise noted.

NA = Not analyzed per the SWHP

ND = Data all non-detects or 4 or fewer detections

NA* = Insufficient number of measurements for 95% Confidence Comparison. Minimum of 6 required for Non-normal data.

= 95% Lower CI Exceeds Regulatory Level (Exceedence)

= 95% Upper CI Exceeds Regulatory Level but Lower CI Does Not (No Exceedence, No Compliance)

= 95% Upper CI Does not Exceed Regulatory Level (No Exceedence)

= No Regulatory Level

Normally Distributed Data - Parametric Confidence Interval - Data not Transformed

Non-Normally Distributed Data - Non-Parametric Confidence Interval - Log Base-10 Transformed Data

Non-Detects treated as 0

Exceedance of a regulatory standard is triggered when the lower 95% confidence interval is greater than the regulatory standard; these cases are highlighted in red on Table 6. Successful remediation is attained if the upper 95% confidence limit does not exceed the regulatory standard, which is highlighted in green. In some cases, the upper 95% confidence interval exceeds the regulatory standard, but the lower 95% confidence interval does not. This condition is not an exceedance but should be monitored for changes and these cases are highlighted in yellow.

Observations regarding the 95% confidence interval results are summarized in the following bullets:

- There are 27 constituents and parameters in samples from 7 wells that are tracked in Table 6 for a total of 189 well-constituent combinations. Arsenic and vinyl chloride are presented twice on Table 6 to allow comparisons of their confidence intervals to Washington State Primary Groundwater Standards and to their Site-Specific Cleanup Levels.

- Seventy-three (73) of the well-constituent combinations evaluated had an insufficient number of detections in the moving 5-year window of data to perform the statistical analysis or the constituents were not analyzed in samples from wells MW-5A and MW-7 per the SWHP. These well-constituent combinations were not evaluated statistically and are represented as ND (not detected) or NA (not analyzed) in Table 6. Confidence intervals were evaluated for remaining well-constituent combinations.

- Ninety-two (92) of the well-constituent combinations that were statistically evaluated had 95% confidence intervals that did not exceed applicable regulatory standards or have no applicable regulatory standards.

- Eighteen (18) of the well-constituent combinations that were statistically evaluated had lower 95% confidence intervals that were greater than applicable regulatory levels (are exceedances). The exceedances are highlighted red in Table 6 and are summarized in the following bullets:

    - Arsenic: MW-1, MW-3, MW-5A, MW-6, MW-7, MW-8, and MW-10 (WA State Primary Groundwater Standard)
    - Arsenic: MW-8 and MW-10 (Site-Specific Cleanup Level)
    - Iron: MW-6 and MW-8
    - Manganese: MW-3, MW-6, MW-8, and MW-10
    - pH (field): MW-3
    - pH (laboratory): MW-1 and MW-3

- Six (6) well-constituent combinations have upper 95% confidence intervals that were greater than (less than in the case of pH) applicable regulatory levels but have lower 95% confidence intervals that are less than applicable regulatory levels. These are not statistical exceedances, but they should be monitored for changes. The well-constituent combinations are highlighted yellow in Table 6 and are summarized in the following bullets:

    - pH (field): MW-1, MW-5A, and MW-6
    - pH (laboratory): MW-5A and MW-8
    - Vinyl chloride: MW-8 (WA State Primary Groundwater Standard)

CONCLUSIONS

Quarterly monitoring data collected during 2020 at the Olalla Landfill are summarized in the following sections.

Landfill Gas Data

Landfill gas field measurements were performed at the three on-site passive flares during the four quarterly monitoring events in 2020. Landfill gas data for all four quarterly monitoring events are included in Appendix A and are summarized in the following sections.

March 17, 2020 – First Quarter

Landfill gas indicator parameters, specifically measurable concentrations of carbon dioxide and methane, combined with depressed oxygen concentrations indicate that landfill gas was present in all three flares at the time of measurement.

Gas pressure measurements were 0.01, 0.03, and 0.02 inches of water in Flares 1, 2, and 3, respectively. The consistently low gas pressure readings indicate a low potential for landfill gas flow from the flares.

Weather station data from the Bremerton National Airport indicate that barometric pressure decreased from 29.70 inches of mercury on March 16, 2020, the day before the monitoring event, to 29.48 inches of mercury on March 17, 2020, the day the flares were measured (Weather Underground, Station KPWT, 2020). This decreasing trend in barometric pressure likely contributed to the measurable concentrations of landfill gas indicators at Flares 1 and 2. All three flares had low gas pressure measurements, which indicates a low potential for the flow of landfill gas from the flares.

June 17, 2020 – Second Quarter

Methane was not detected in any of the flares and LEL was 0% in Flares 1 and 2. However, field measured LEL was measured at 7% in Flare 2 but no other landfill gas indicators (e.g., the presence of methane, carbon dioxide, and depressed oxygen) were present at Flare 2. In addition, the oxygen concentration was slightly depressed and carbon dioxide was detected at a low concentration in Flare 1 potentially indicating the presence of aerobic decomposition products at this location.

Gas pressure measurements were 0.05 inches of water in all three flares. The consistently low gas pressure readings combined with no methane detections indicate a low potential for landfill gas flow from the flares.

Weather station data from the Bremerton National Airport indicate that barometric pressure increased from 29.60 inches of mercury on June 16, 2020, the day before the monitoring event, to 29.79 inches of mercury on June 17, 2020, the day the flares were measured (Weather Underground, Station KPWT, 2020). This increasing trend in barometric pressure likely contributed to the lack of measurable landfill gas indicators in all three flares. In addition, all three flares had low gas pressure measurements, which indicates a low potential for the flow of landfill gas from the flares.

September 17, 2020 – Third Quarter

Methane was not detected in Flare 1; however, carbon dioxide was detected, and the oxygen concentration was depressed. These measurements are consistent with the byproducts of aerobic degradation of organics. Flares 2 and 3 both had indicators of landfill gas including the measurable presence of methane and carbon dioxide and significantly depressed oxygen concentrations. These landfill gas conditions are consistent with the byproducts of anaerobic degradation of organics.

Gas pressure measurements were 0.15 inches of water in Flares 1 and 2 and 0.10 inches of water in Flare 3. The consistently low gas pressure readings indicate a low potential for landfill gas flow from the flares.

Weather station data from the Bremerton National Airport indicate that barometric pressure increased from a mean of 29.58 inches of mercury on September 16, 2020, the day before the monitoring event, to a mean of 29.54 inches of mercury on September 17, 2020, the day the flares were measured (Weather Underground, Station KPWT, 2020). This decreasing trend in barometric pressure likely contributed to the presence of measurable landfill gas indicators in two of the three flares. All three flares had low gas pressure measurements, which indicates a low potential for the flow of landfill gas from the flares.

December 29, 2020 – Fourth Quarter

Landfill gas indicator parameters, specifically low but measurable concentrations of carbon dioxide and methane, combined with a slightly depressed oxygen concentration were present in Flare 1. No indications of presence of landfill gas were measured in Flares 2 and 3 at the time of measurement.

Gas pressure measurements were 0.14, 0.10, and 0.12 inches of water in Flares 1, 2, and 3, respectively. The gas pressure measurements indicate a low potential for landfill gas flow from the flares.

Weather station data from the Bremerton National Airport indicate that barometric pressure increased from 29.69 inches of mercury on December 28, 2020, the day before the monitoring event, to 29.77 inches of mercury on December 29, 2020, the day the flares were measured (Weather Underground, Station KPWT 2021). This increasing trend in barometric pressure likely contributed to the absence of measurable landfill gas indicators in Flares 2 and 3 and low concentrations of methane and carbon dioxide in Flare 1.

Groundwater Elevation and Flow Direction Data

The groundwater flow direction beneath the Landfill is generally toward the northwest, with groundwater from beneath the Landfill flowing toward downgradient wells MW-3, MW-6, MW-8, and MW-10 as depicted in the quarterly groundwater elevation contour and flow direction figures presented in Appendix A. The groundwater flow directions and elevation contour patterns are consistent with historical groundwater elevation data from the Landfill.

The lowest calculated groundwater gradient among the four quarters of 2020 occurred in December with a mean horizontal gradient of 0.0129. The resulting calculated groundwater flow velocity is 2.01 feet/day. Groundwater gradients and calculated groundwater velocities were greatest during September, which had a mean horizontal gradient of 0.0157 and calculated flow velocity of 2.45 feet/day.

Exceedances of Primary Regulatory Standards

Upgradient Well (MW-1)

Arsenic

- Groundwater samples collected from MW-1 had arsenic concentrations of 0.11 µg/L, 0.11 µg/L, 0.09 µg/L, and 0.09 µg/L in March, June, September, and December, respectively. The four quarterly arsenic concentrations exceed the Washington State Groundwater Primary Standard of 0.05 µg/L but are significantly less than both the Washington State Drinking Water Primary Standard of 10 µg/L and the site-specific CUL of 1.29 µg/L.

- The upper and lower 95% confidence intervals for arsenic in samples from MW-1 exceed the Washington State Primary Groundwater Standard of 0.05 µg/L, which represents a statistically significant exceedance of that standard.

- The upper and lower 95% confidence intervals for arsenic in samples from MW-1 are less than the Site-Specific CUL of 1.29 µg/L, which represents statistically significant compliance with the Site-Specific CUL.

- The presence of arsenic at concentrations greater than the Washington State Groundwater Primary Standard in samples from upgradient well MW-1 is an indication that dissolution of naturally occurring arsenic in soil contributes to the arsenic concentrations noted in groundwater data from other wells at the Landfill.

Cross-Gradient Wells (MW-5A and MW-7)

Arsenic

MW-5A and MW-7

- Per the SWHP and CMP, cross-gradient wells MW-5A and MW-7 are sampled only during the fourth quarter monitoring event. Groundwater samples collected from MW-5A and MW-7 had arsenic concentrations of 0.21 µg/L and 0.28 µg/L, respectively. Both concentrations exceed the Washington State Groundwater Primary Standard of 0.05 µg/L but are less than both the Washington State Drinking Water Primary Standard of 10 µg/L and the Site-Specific CUL of 1.29 µg/L.

- The upper and lower 95% confidence intervals for arsenic in samples from MW-5A and MW-7 exceed the Washington State Primary Groundwater Standard of 0.05 µg/L, which represents a statistically significant exceedance of that standard.

- The upper and lower 95% confidence intervals for arsenic in samples from MW-5A and MW-7 are less than the Site-Specific CUL of 1.29 µg/L, which represents statistically significant compliance with the Site-Specific CUL.

- The presence of arsenic at concentrations greater than the Washington State Groundwater Primary Standard in samples from cross-gradient wells MW-5A and MW-7 is an indication that dissolution of naturally occurring arsenic in soil contributes to the arsenic concentrations noted in groundwater data from other wells at the Landfill.

Downgradient Wells (MW-3, MW-6, MW-8, and MW-10)

Arsenic

MW-3, MW-6, MW-8, and MW-10

- Groundwater samples from downgradient monitoring wells had arsenic concentrations exceeding the Washington State Groundwater Primary Standard of 0.05 µg/L during the four quarterly events in 2020. None of the arsenic concentrations exceed the Washington State Drinking Water Primary Standard of 10 µg/L. Samples from MW-8 exceeded the Site-Specific CUL of 1.29 µg/L during the March and December quarterly event. Samples from MW-10 exceeded the site-specific CUL during the four quarters of 2020. Arsenic concentrations for downgradient wells are summarized in the following bullets:

    - MW-3 had arsenic concentrations of 0.10 µg/L, 0.12 µg/L, 0.11 µg/L, and 0.11 µg/L in March, June, September, and December, respectively.

    - MW-6 had arsenic concentrations of 0.45 µg/L, 0.44 µg/L, 0.44 µg/L, and 0.31 µg/L in March, June, September, and December, respectively.

    - MW-8 had arsenic concentrations of 1.89 µg/L, 0.99 µg/L, 0.69 µg/L, and 1.60 µg/L in March, June, September, and December, respectively.

    - MW-10 had arsenic concentrations of 1.75 µg/L, 2.24 µg/L, 1.96 µg/L, and 2.52 µg/L in March, June, September, and December, respectively.

- Upper and lower 95% confidence intervals for arsenic in samples from the four downgradient wells exceed the Washington State Primary Groundwater Standard of 0.05 µg/L. This represents statistically significant exceedances of that standard in the downgradient wells. The upper and lower 95% confidence intervals for MW-8 and MW-10 also exceed the Site-Specific CUL of 1.29 µg/L, indicating statistically significant exceedance of the CUL for MW-8 and MW-10.

- Upper and lower 95% confidence intervals for arsenic in samples from MW-3 and MW-6 are less than the Site-Specific CUL of 1.29 µg/L, which represents statistically significant compliance with the Site-Specific CUL.

- Upper and lower 95% confidence intervals for arsenic in samples from MW-8 and MW-10 exceed the Site-Specific CUL of 1.29 µg/L, which represent statistically significant exceedances of the Site-Specific CUL.

Exceedances of Secondary Regulatory Standards

Upgradient Well (MW-1)

pH (field-measured)

- Groundwater purged from well MW-1 had field-measured pH values of 6.4, 6.2, and 5.7 during the March, September, and December monitoring events. These values are lower than the lower limit of the 6.5 for the Washington State Groundwater Secondary Standard.

- The lower 95% confidence limit for field-measured pH in purge water from MW-1 is less than Washington State Secondary Groundwater Standard range of 6.5 to 8.5 but the upper 95% confidence is within that range. This is not a statistical exceedance or compliance but indicates that continued monitoring and evaluation is warranted.

pH (laboratory-measured)

- Groundwater samples from well MW-1 had laboratory-measured pH values of 6.1, 6.3, and 5.9 during the March, September, and December monitoring events, respectively. These values are less than the lower limit of 6.5 for the Washington State Groundwater Secondary Standard.

- Upper and lower 95% confidence limits for laboratory-measured pH in samples from MW-1 are less than the Washington State Secondary Groundwater Standard range of 6.5 to 8.5. This represents a statistical exceedance of the Secondary Groundwater Standard range.

Cross-Gradient Wells (MW-5A and MW-7)

pH (field-measured)

MW-5A

- The groundwater sample from well MW-5A had a field-measured pH value of 6.2 during the December monitoring event. This value is less than the lower limit of 6.5 for the Washington State Groundwater Secondary Standard.

- The lower 95% confidence limit for field-measured pH in purge water from MW-5A is less than the Washington State Secondary Groundwater Standard range of 6.5 to 8.5 but the upper 95% confidence limit is within that range. This is not a statistical exceedance or compliance but indicates that continued monitoring and evaluation is warranted.

pH (laboratory-measured)

MW-5A

- The groundwater sample from well MW-5A had a laboratory-measured pH value of 6.3 during the December monitoring event. This value is less than the lower limit of 6.5 for the Washington State Groundwater Secondary Standard.

- The lower 95% confidence limit for laboratory-measured pH in purge water from MW-5A is less than the Washington State Secondary Groundwater Standard range of 6.5 to 8.5 but the upper 95% confidence limit is within that range. This is not a statistical exceedance or compliance but indicates that continued monitoring and evaluation is warranted.

Downgradient Wells (MW-3, MW-6, MW-8, and MW-10)

Iron

MW-6 and MW-8

- Iron is a common constituent in landfill leachate and iron concentrations in groundwater samples from downgradient wells MW-6 and MW-8 had iron concentrations that exceeded the Washington State Drinking Water Secondary Standard and Groundwater Secondary Standard of 300 µg/L during at least one quarterly event as summarized below.

    - MW-6 had an iron concentration of 384 µg/L during the September monitoring event.

- MW-8 had iron concentrations of 770 µg/L, 317 µg/L, and 706 µg/L during the March, June, and December monitoring events.

- Upper and lower 95% confidence intervals for iron in samples from MW-6 and MW-8 exceed the Washington State Secondary Groundwater Standard of 300 µg/L. This represents a statistically significant exceedance for iron at both wells.

Manganese
MW-3, MW-6, MW-8, and MW-10

- Manganese is a common constituent of landfill leachate and manganese concentrations in groundwater samples from downgradient wells MW-3 MW-6, MW-8, and MW-10 exceeded the Washington State Drinking Water Secondary Standard and Groundwater Secondary Standard of 50 µg/L during the four quarterly monitoring events of 2020 as summarized below.

  - MW-3 had manganese concentrations of 4,310 µg/L, 8,130 µg/L, 6,080 µg/L, and 4,090 µg/L for the March, June, September, and December sampling events, respectively.

  - MW-6 had manganese concentrations of 316 µg/L, 524 µg/L, 513 µg/L, and 324 µg/L for the March, June, September, and December sampling events, respectively.

  - MW-8 had manganese concentrations of 2,760 µg/L, 2,130 µg/L, 2,140 µg/L, and 2,430 µg/L for the March, June, September, and December sampling events, respectively.

  - MW-10 had manganese concentrations of 4,180 µg/L, 5,100 µg/L, 4,060 µg/L, and 3,740 µg/L for the March, June, September, and December sampling events, respectively.

- Upper and lower 95% confidence limits for manganese in samples from all four downgradient wells exceed the Washington State Secondary Groundwater Standard of 50 µg/L indicating statistically significant exceedances for manganese in downgradient wells.

pH (field-measured)
MW-3, MW-6, MW-8, and MW-10

- Purge water from downgradient monitoring wells MW-3 and MW-6 had at least one field-measured pH value that was less than the lower limit of the 6.5 to 8.5 range of the Washington State Groundwater Secondary Standard as summarized below.

  - MW-3 had field-measured pH values of 6,4, 6.2, 6.3, and 5.8 in March, June, September, and December, respectively.

  - MW-6 had a field-measured pH value of 6.4 in December.

  - MW-8 had a field-measured pH value of 6.3 in September.

  - MW-10 had a field-measured pH value of 6.4 in December.

- Both the upper and lower 95% confidence limits for field-measured pH in purge water from MW-3 are outside of (less than) the Washington State Secondary Groundwater Standard range of 6.5 to 8.5, indicating a statistically significant exceedance of that standard.

- The lower 95% confidence limit for laboratory-measured pH in purge water from MW-6 is less than the Washington State Secondary Groundwater Standard range of 6.5 to 8.5 but the upper 95% confidence is within that range. This is not a statistical exceedance or compliance but indicates that continued monitoring and evaluation is warranted.

- Both the upper and lower 95% confidence limits for field-measured pH in purge water from MW-8 and MW-10 are within the Washington State Secondary Groundwater Standard range of 6.5 to 8.5, indicating statistically significant compliance with that standard.

pH (laboratory-measured)
MW-3, MW-6, MW-8, and MW-10

- Purge water from downgradient monitoring wells MW-3, MW-6, MW-8, and MW-10 had at least one laboratory-measured pH value that was less than the lower limit of the 6.5 to 8.5 range of the Washington State Groundwater Secondary Standard as summarized below.

    - MW-3 had laboratory-measured pH values of 6.3, 6.2, 6.2, and 6.2 in March, June, September, and December, respectively.

    - MW-6 had a laboratory-measured pH value of 6.4 in March.

    - MW-8 had laboratory-measured pH values of 6.4 in June and 5.5 in December.

    - MW-10 had a laboratory-measured pH value of 6.2 in June.

- Both the upper and lower 95% confidence limits for laboratory-measured pH in samples from MW-3 are lower than the Washington State Secondary Groundwater Standard range of 6.5 to 8.5, indicating a statistically significant exceedance of that standard.

- Both the upper and lower 95% confidence limits for laboratory-measured pH in samples from MW-6 and MW-10 are within the Washington State Secondary Groundwater Standard range of 6.5 to 8.5, indicating statistically significant compliance with that standard.

- The lower 95% confidence limit for laboratory-measured pH in purge water from MW-8 is less than the Washington State Secondary Groundwater Standard range of 6.5 to 8.5 but the upper 95% confidence is within that range. This is not a statistical exceedance or compliance but indicates that continued monitoring and evaluation is warranted.

Analytical Tests for Volatile Organic Compounds

This section lists and describes detections of additional VOC constituents in groundwater samples from the Landfill monitoring well network. The VOC detections listed in this section are at concentrations less than applicable Washington State Drinking Water Standards or Washington State Groundwater Quality Standards or are for VOCs that do not have applicable groundwater standards.

- Chlorobenzene was detected in the samples from MW-6 at concentrations of 2.29 µg/L, 2.48 µg/L, 2.29 µg/L, and 2.05 µg/L in March, June, September, and December, respectively. These concentrations are is less than the Washington State Primary Drinking Water Standard of 100 µg/L.
- cis-1,2-Dichloroethene was detected in the sample from MW-8 at a concentration of 0.2 µg/L in June. This concentration is less than the Washington State Primary Drinking Water Standard of 70 µg/L.

Inspection and Maintenance Summary for 2020 and Activities Planned for 2021

A summary of the inspection, maintenance, and engineering work performed at the Olalla Landfill in 2020 is presented in Appendix C. Activities planned for 2021 are summarized in Appendix D.

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Appendix A:
2020 Quarterly Monitoring Data

Landfill Gas Data
Groundwater Elevations and Contour Maps
Groundwater Quality Data

Olalla Landfill
2020 Landfill Gas Data

March 17, 2020	Flare #1	Flare #2	Flare #3
METHANE, (% LEL)[a]	27-34[b]	53-80[b]	100
METHANE, (% Volume)	1.4	3.4	11.9
OXYGEN, (% Volume)	1.4	1.9	0.2
CARBON DIOXIDE, (% Volume)	10.6	11.2	12.8
PRESSURE (inches of water column)	0.01	0.03	0.02
AMBIENT TEMPERATURE, (^{o}F)	51		

June 17, 2020	Flare #1	Flare #2	Flare #3
METHANE, (% LEL)[a]	0	7	0
METHANE, (% Volume)	0.0	0.0	0.0
OXYGEN, (% Volume)	19.8	21.7	20.7
CARBON DIOXIDE, (% Volume)	1.5	0.0	0.0
TEMPERATURE (^{o}F)	66.0	66.0	66.0
PRESSURE (inches of water column)	0.05	0.05	0.05
AMBIENT TEMPERATURE, (^{o}F)	70		

September 17, 2020	Flare #1	Flare #2	Flare #3
METHANE, (% LEL)[a]	0	9	82
METHANE, (% Volume)	0.0	0.4	4.2
OXYGEN, (% Volume)	17.8	4.8	0.7
CARBON DIOXIDE, (% Volume)	1.0	10.3	15.2
TEMPERATURE (^{o}F)	70.0	70.0	70.0
PRESSURE (inches of water column)	0.15	0.15	0.10
AMBIENT TEMPERATURE, (^{o}F)	70		

December 29, 2020	Flare #1	Flare #2	Flare #3
METHANE, (% LEL)[a]	6	0	0
METHANE, (% Volume)	0.4	0.0	0.0
OXYGEN, (% Volume)	20.2	21.8	21.8
CARBON DIOXIDE, (% Volume)	1.1	0.0	0.0
TEMPERATURE (^{o}F)	39	39	39
PRESSURE (inches of water column)	0.14	0.10	0.12
AMBIENT TEMPERATURE, (^{o}F)	39		

Notes:

[a] LEL is GEM 2000 instrument reading, not a calculated value from the methane % volume measurement.

[b] Range of fluctuating LEL measurements recorded during flare monitoring.

Olalla Landfill
2020 Groundwater Elevations

Station	Reference Elevation*	Depth to Water (feet)	Groundwater Elevation*
March 19, 2020			
MW-1	343.79	79.40	264.39
MW-2	323.25	64.98	258.27
MW-3	296.95	44.21	252.74
MW-4	320.93	62.02	258.91
MW-5A	332.53	75.62	256.91
MW-6	271.17	20.06	251.11
MW-7	280.43	24.92	255.51
MW-8	272.85	20.63	252.22
MW-10	279.21	29.11	250.10

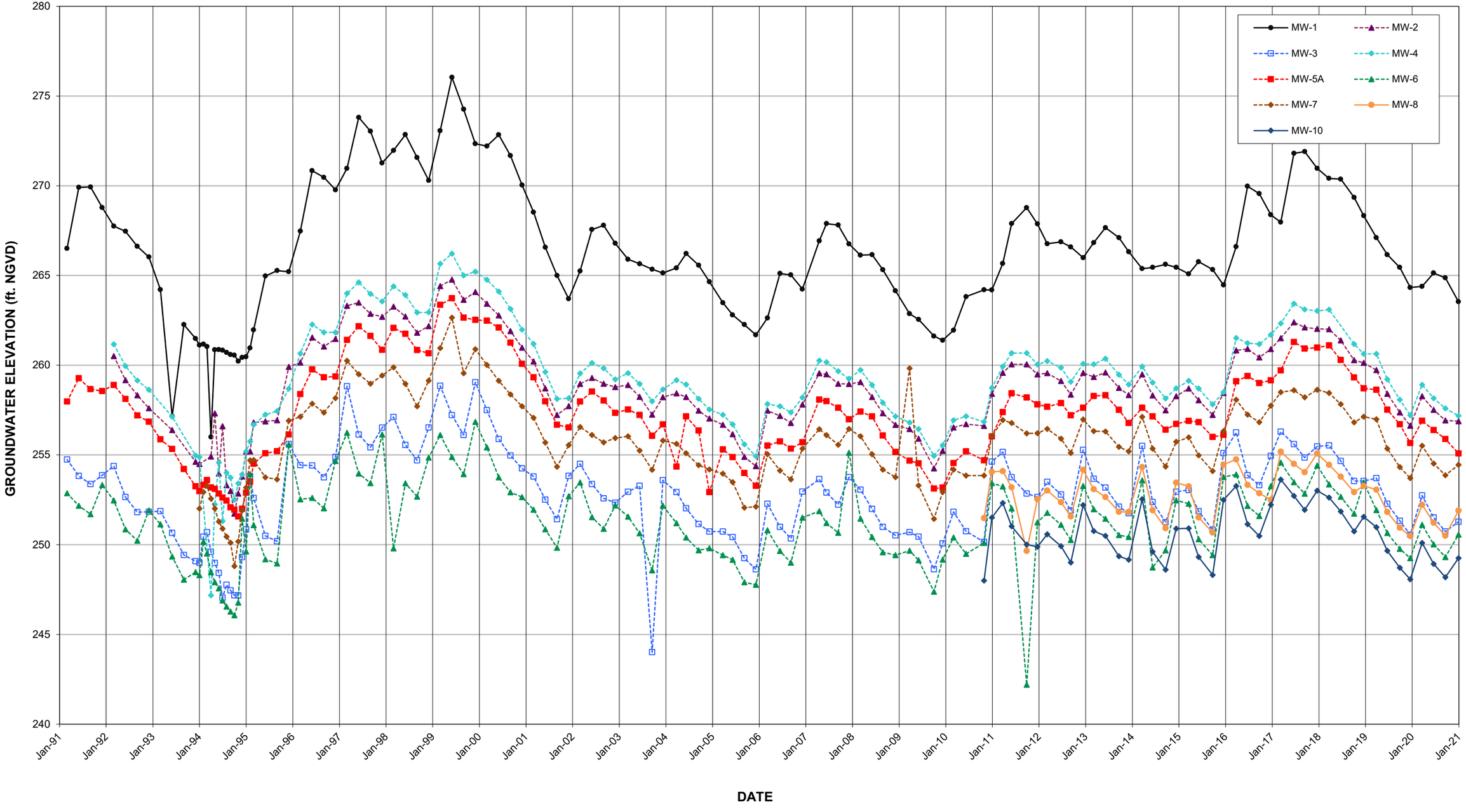
Station	Reference Elevation*	Depth to Water (feet)	Groundwater Elevation*
June 17, 2020			
MW-1	343.79	78.65	265.14
MW-2	323.25	65.74	257.51
MW-3	296.95	45.43	251.52
MW-4	320.93	62.77	258.16
MW-5A	332.53	76.14	256.39
MW-6	271.17	21.15	250.02
MW-7	280.43	25.91	254.52
MW-8	272.85	21.63	251.22
MW-10	279.21	30.28	248.93

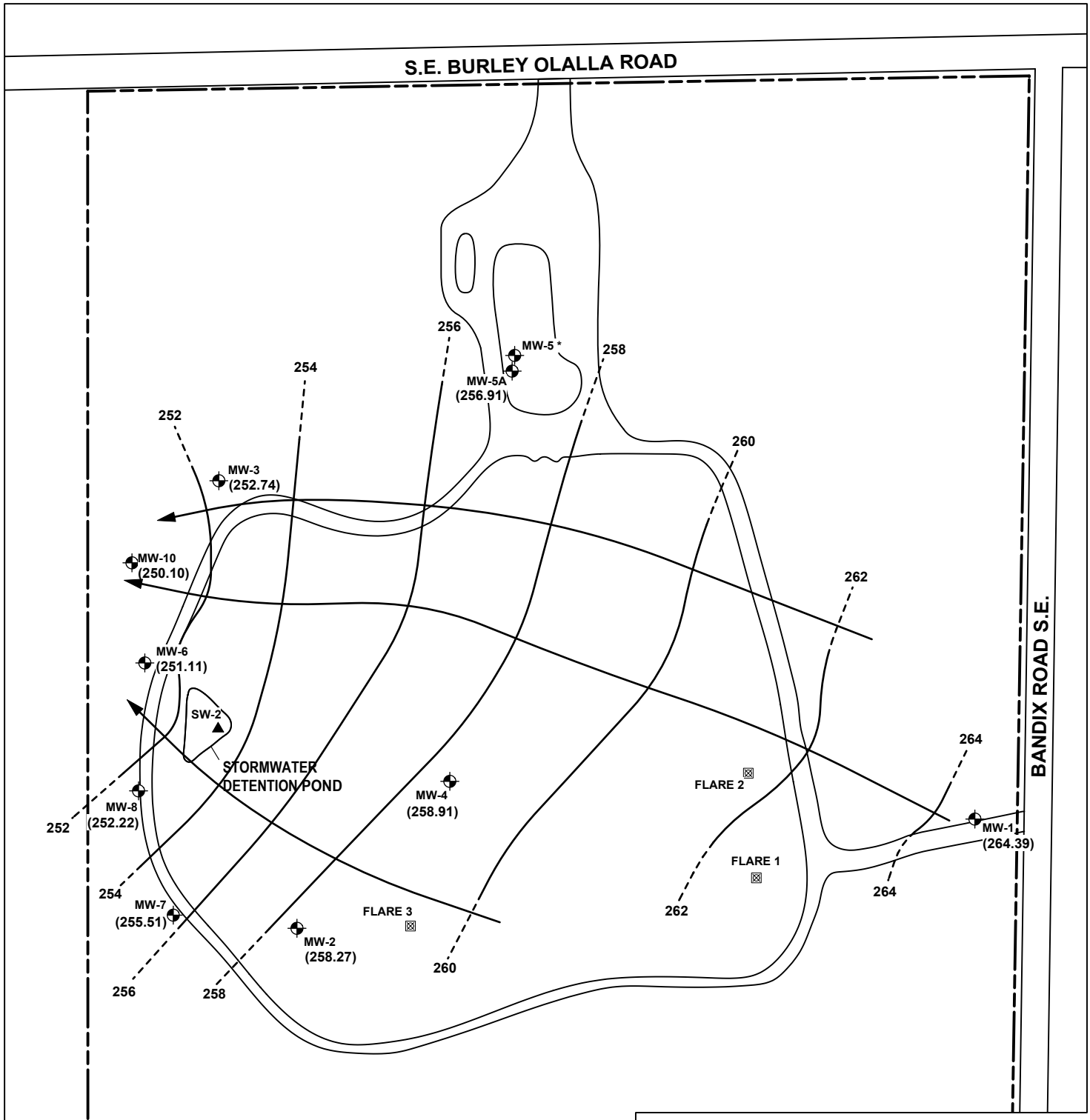
Station	Reference Elevation*	Depth to Water (feet)	Groundwater Elevation*
September 17, 2020			
MW-1	343.79	78.92	264.87
MW-2	323.25	66.33	256.92
MW-3	296.95	46.22	250.73
MW-4	320.93	63.34	257.59
MW-5A	332.53	76.64	255.89
MW-6	271.17	21.86	249.31
MW-7	280.43	26.56	253.87
MW-8	272.85	22.35	250.50
MW-10	279.21	31.02	248.19

Station	Reference Elevation*	Depth to Water (feet)	Groundwater Elevation*
December 29, 2020			
MW-1	343.79	80.25	263.54
MW-2	323.25	66.37	256.88
MW-3	296.95	45.67	251.28
MW-4	320.93	63.75	257.18
MW-5A	332.53	77.45	255.08
MW-6	271.17	20.61	250.56
MW-7	280.43	25.98	254.45
MW-8	272.85	20.95	251.90
MW-10	279.21	29.96	249.25

*Elevations in Feet NGVD 29

OLALLA LANDFILL
Groundwater Elevations





NOTES:
* *MW-5 IS COMPLETED IN A SHALLOW PERCHED GROUNDWATER ZONE.*

- MW-2 — MONITORING WELL LOCATION
- SW-2 — SURFACE WATER SAMPLING LOCATION
- LANDFILL GAS FLARE
- GROUNDWATER ELEVATION CONTOUR
- INFERRED GROUNDWATER FLOW PATH
- APPROXIMATE PROPERTY BOUNDARY
- PERIMETER ACCESS ROAD

N

0 50 100 200

SCALE: 1" = 200'

TRC
1180 NW MAPLE ST, SUITE 310
ISSAQUAH, WA 98027
425.395.0010
WWW.TRCCOMPANIES.COM

OLALLA LANDFILL GROUNDWATER ELEVATION CONTOUR MAP - MARCH 19, 2020

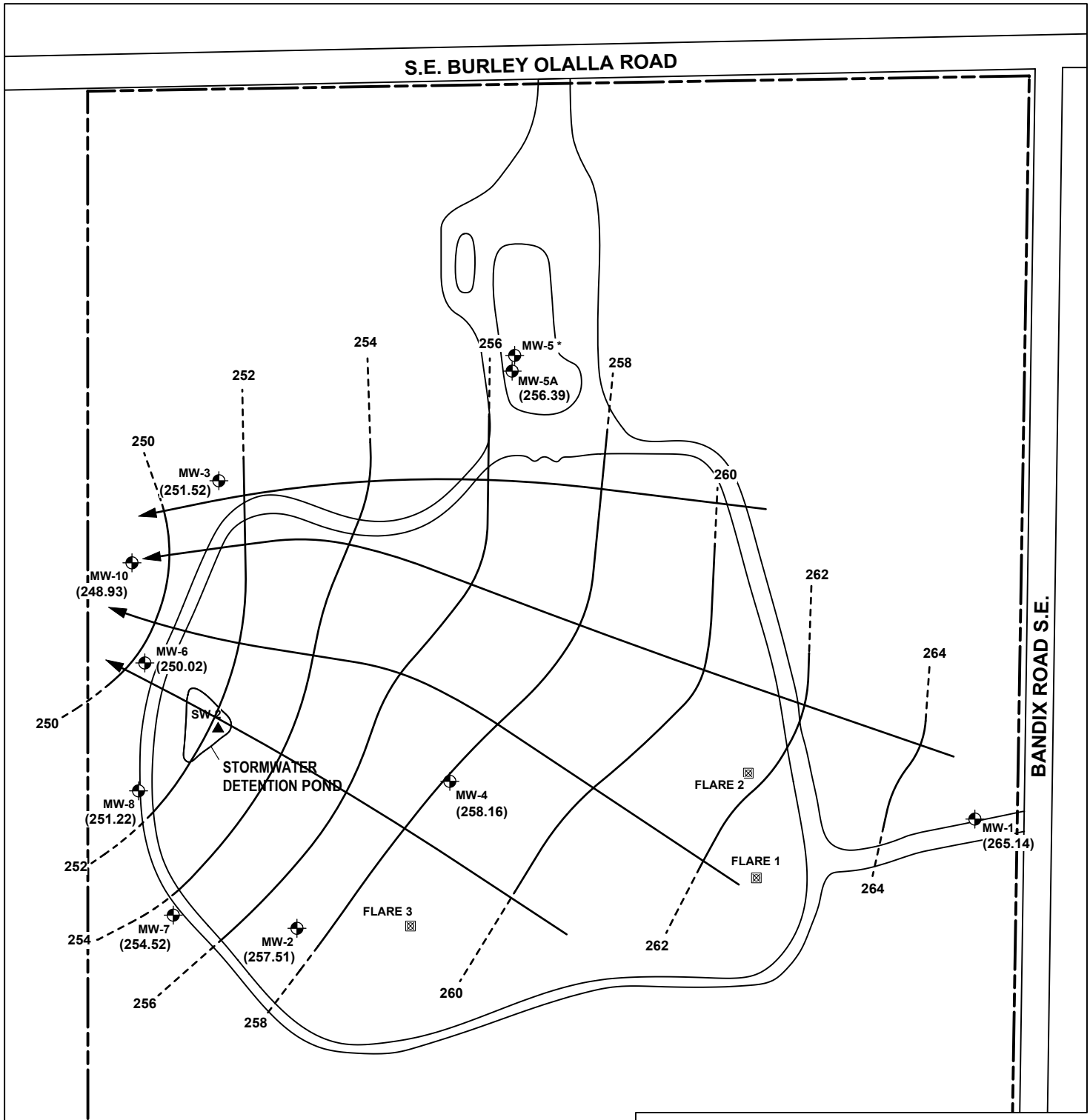
REPORT
2020 ANNUAL
MONITORING REPORT

PREPARED FOR
KITSAP COUNTY

PROJECT NUMBER
382595

LOCATION
OLALLA LANDFILL
KITSAP COUNTY, WASHINGTON

DATE 1/21/26
DRAWN BY ..... DCK
REVIEWED BY ..... DCK



NOTES:
* *MW-5 IS COMPLETED IN A SHALLOW PERCHED GROUNDWATER ZONE.*

- MW-2 — MONITORING WELL LOCATION
- SW-2 ▲ — SURFACE WATER SAMPLING LOCATION
- ⊠ — LANDFILL GAS FLARE
- GROUNDWATER ELEVATION CONTOUR
- INFERRED GROUNDWATER FLOW PATH
- APPROXIMATE PROPERTY BOUNDARY
- PERIMETER ACCESS ROAD

N

0 50 100 200

SCALE: 1" = 200'

TRC
1180 NW MAPLE ST, SUITE 310
ISSAQUAH, WA 98027
425.395.0010
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OLALLA LANDFILL GROUNDWATER ELEVATION CONTOUR MAP - JUNE 17, 2020

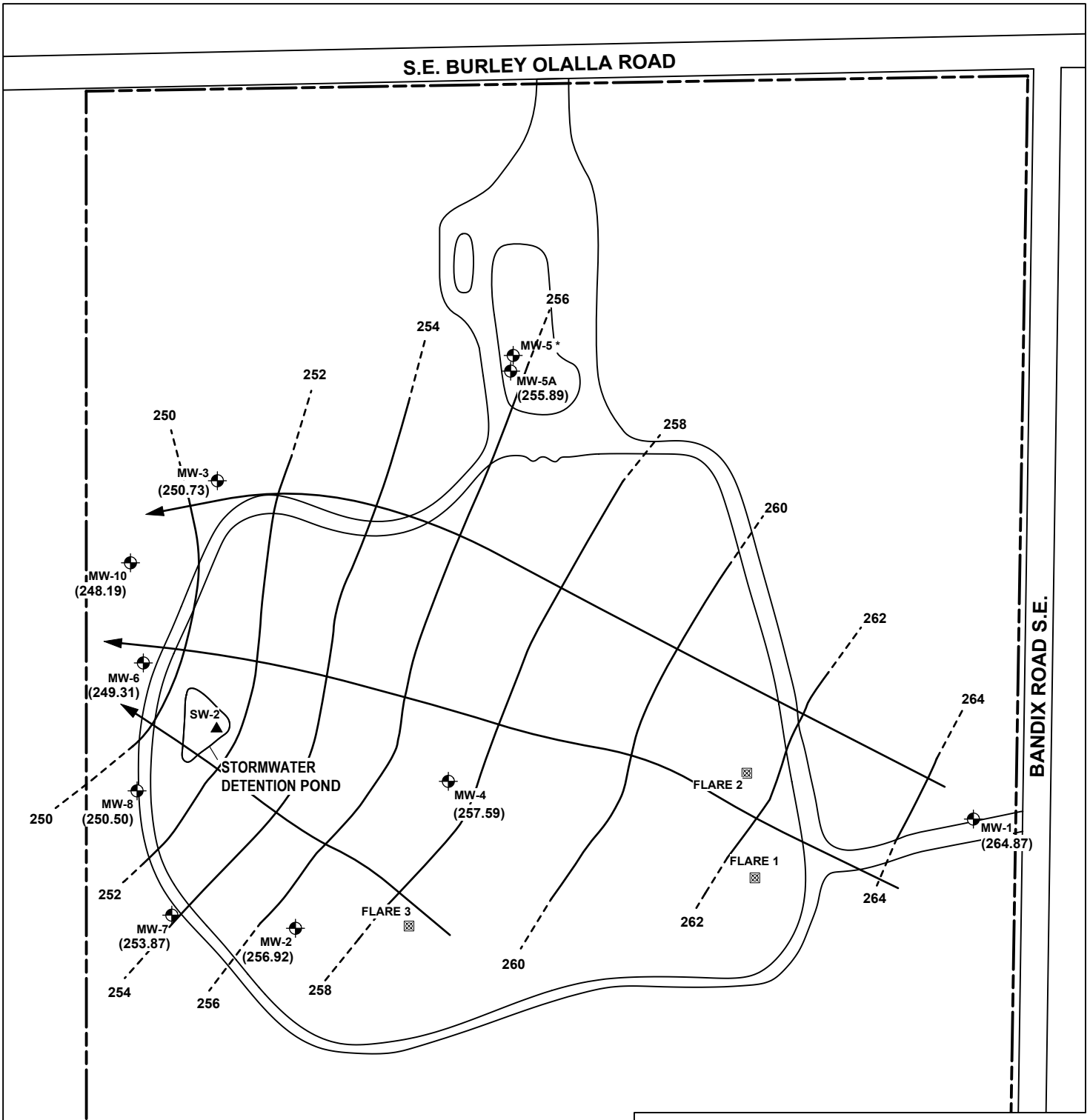
REPORT
2020 ANNUAL
MONITORING REPORT

PREPARED FOR
KITSAP COUNTY

PROJECT NUMBER
382595

LOCATION
OLALLA LANDFILL
KITSAP COUNTY, WASHINGTON

DATE 1/21/26
DRAWN BY ..... DCK
REVIEWED BY ..... DCK



NOTES:
* *MW-5 IS COMPLETED IN A SHALLOW PERCHED GROUNDWATER ZONE.*

- MW-2 — MONITORING WELL LOCATION
- SW-2 — SURFACE WATER SAMPLING LOCATION
- LANDFILL GAS FLARE
- GROUNDWATER ELEVATION CONTOUR
- INFERRED GROUNDWATER FLOW PATH
- APPROXIMATE PROPERTY BOUNDARY
- PERIMETER ACCESS ROAD

N

0 50 100 200

SCALE: 1" = 200'

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OLALLA LANDFILL GROUNDWATER ELEVATION CONTOUR MAP - SEPTEMBER 17, 2020

REPORT
2020 ANNUAL
MONITORING REPORT

PREPARED FOR
KITSAP COUNTY

PROJECT NUMBER
382595

LOCATION
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KITSAP COUNTY, WASHINGTON

DATE 1/21/26
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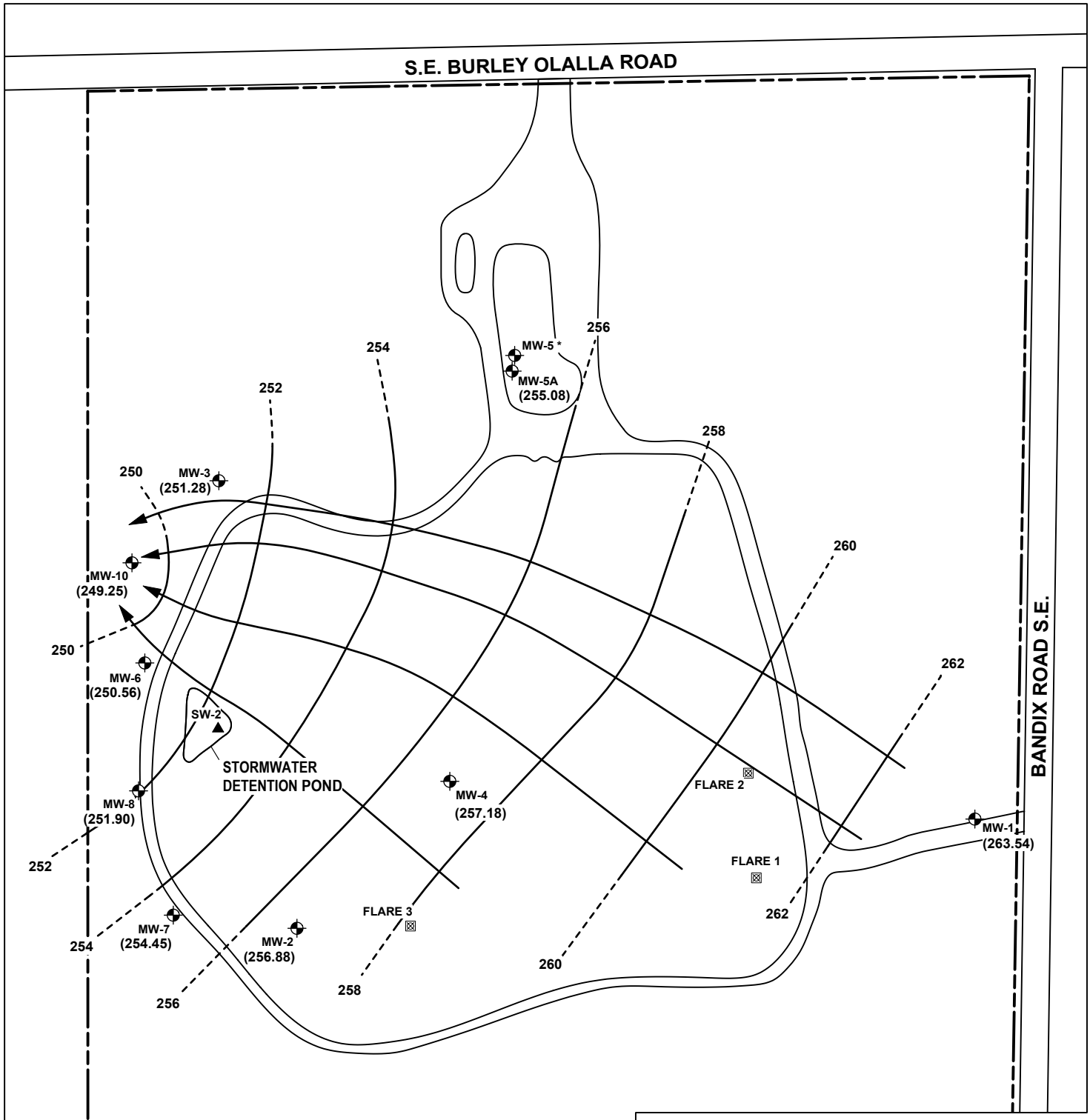

NOTES:
* *MW-5 IS COMPLETED IN A SHALLOW PERCHED GROUNDWATER ZONE.*

- MW-2 — MONITORING WELL LOCATION
- SW-2 — SURFACE WATER SAMPLING LOCATION
- LANDFILL GAS FLARE
- GROUNDWATER ELEVATION CONTOUR
- INFERRED GROUNDWATER FLOW PATH
- APPROXIMATE PROPERTY BOUNDARY
- PERIMETER ACCESS ROAD

N

0 50 100 200

SCALE: 1" = 200'

TRC

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OLALLA LANDFILL GROUNDWATER ELEVATION CONTOUR MAP - DECEMBER 29, 2020

REPORT
2020 ANNUAL
MONITORING REPORT

PREPARED FOR
KITSAP COUNTY

PROJECT NUMBER
382595

LOCATION
OLALLA LANDFILL
KITSAP COUNTY, WASHINGTON

DATE 1/21/26
DRAWN BY ..... DCK
REVIEWED BY ..... DCK

Groundwater Quality Data
March 2020 Quarterly Monitoring Event
Page 1 of 3

	State Drinking Water Standards (a)	State Ground-water Standards (b)	Site-Specific Cleanup Level (c)	Units	MW-1	MW-3	MW-6	MW-8	MW-10	MW-9 (FD)
CONVENTIONALS										
ALKALINITY	-----	-----	-----	mg/L	47.9	106	57.8	122.0	211	107
AMMONIA NITROGEN	-----	-----	-----	mg/L	0.040 U	0.040 U	0.040 U	0.040 U	0.083	0.040 U
BICARBONATE	-----	-----	-----	mg/L	47.9	106	57.8	122.0	211	107
CARBONATE	-----	-----	-----	mg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
CHEMICAL OXYGEN DEMAND (COD)	-----	-----	-----	mg/L	10.0 U	10.5	10.0 U	10.0 U	14.8	10.0 U
CHLORIDE	250**	250**	-----	mg/L	3.59	5.87	1.29	2.27	11.2	5.92
DISSOLVED OXYGEN	-----	-----	-----	mg/L	9.93	1.17	0.60	2.48	0.58	NA
NITRATE NITROGEN	10*	10*	-----	mg/L	0.42	2.51	0.31	0.09	0.02 U	2.51
NITRITE NITROGEN	1*	-----	-----	mg/L	0.01 U	0.01 U	0.05	0.10 U	0.01 U	0.01 U
OXIDATION REDUCTION POTENTIAL (ORP)	-----	-----	-----	mV	302.2	310.9	117.9	154.5	192.2	NA
pH (field)	-----	6.5-8.5**	-----	-log H+	**6.4**	**6.4**	6.8	6.6	6.8	NA
pH (laboratory)	-----	6.5-8.5**	-----	-log H+	**6.1** HJ	**6.3** HJ	**6.4** HJ	**6.4** HJ	6.6 HJ	**6.2** HJ
SPECIFIC CONDUCTANCE	700**	-----	-----	umhos/cm	112	308	111	229	409	NA
SULFATE	250**	250**	-----	mg/L	4.30	37.4	3.12	4.80	7.46	35.8
TEMPERATURE	-----	-----	-----	°C	10.8	11.6	11.3	10.7	11.1	NA
TOTAL COLIFORM	1/100 mL*	1/100 mL*	-----	cfu/100 mL	1 UJH	1 UJH	1 UJH	1 UJH	1 UJH	1 UJH
TOTAL ORGANIC CARBON (TOC)	-----	-----	-----	mg/L	0.5 U	2.24	2.39	0.85	3.14	2.17
TURBIDITY	-----	-----	-----	NTU	0.15	2.25	6.30	9.22	1.30	NA
DISSOLVED METALS										
ARSENIC	10*	0.05*	1.29	µg/L	**0.11**	**0.10**	**0.45**	**1.89**	**1.75**	**0.09**
BARIUM	2,000*	1,000*	-----	µg/L	4.6	11.4	5.7	8.0	18.5	12.1
CALCIUM	-----	-----	-----	mg/L	10.1	31.0	9.9	21.3	37.7	31.7
IRON	300**	300**	300	µg/L	20 U	20 U	68.2	**770**	20 U	20 U
MANGANESE	50**	50**	50	µg/L	1.0 U	**4,310**	**316**	**2,760**	**4,180**	**4,310**
POTASSIUM	-----	-----	-----	mg/L	0.65	0.72	0.77	1.02	1.40	0.72
SODIUM	20***	-----	-----	mg/L	4.43	7.01	5.3	9.09	16.8	7.0
ZINC	5,000**	5,000**	-----	µg/L	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
VOLATILE ORGANIC COMPOUNDS										
VINYL CHLORIDE	2*	0.02*	0.29	µg/L	0.02 UJ	0.02 UJ	0.02 UJ	0.02 UJ	0.02 UJ	0.02 UJ

Notes:

Concentration exceeds Washington State Drinking Water or Groundwater Standards

FD = Field Duplicate of MW-3 was labeled MW-9.

NA = Not Analyzed

Regulatory Standards:

(a) WAC 246-290-310

(b) WAC 173-200-040

* Primary Standard

** Secondary Standard

*** Recommended level of concern for consumers with restricted daily sodium intake.

Data Qualifiers:

H = Analyzed outside of holding time.

J = Estimated Value. Laboratory-measured pH exceeded its 15-minute holding time.

NA = Not Analyzed

U = Indicates compound was analyzed for, but not detected at the specified detection limit.

Groundwater Quality Data
March 2020 Quarterly Monitoring Event

VOLATILE ORGANIC COMPOUNDS	State Drinking Water Standards (a)	State Ground-water Standards (b)	Units	MW-1	MW-3	MW-6	MW-8	MW-10	MW-9 (FD)
1,1,1,2-TETRACHLOROETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,1-TRICHLOROETHANE	200	200	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2,2-TETRACHLOROETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2-TRICHLOROETHANE	5	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-DICHLOROETHANE	-----	1	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-DICHLOROETHENE	7	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-DICHLOROPROPENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,3-TRICHLOROBENZENE	-----	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-TRICHLOROPROPANE	-----	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-TRICHLOROBENZENE	70	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-TRIMETHYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-DIBROMO-3-CHLOROPROPANE	-----	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROBENZENE	600	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-DICHLOROETHANE	5	0.5	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-DICHLOROPROPANE	5	0.6	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3,5-TRIMETHYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-DICHLOROBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-DICHLOROPROPANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,4-DICHLOROBENZENE	75	4	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2,2-DICHLOROPROPANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-BUTANONE	-----	-----	µg/L	5 U	5 U	5 U	5 U	5 U	5 U
2-CHLOROETHYLVINYLETHER	-----	-----	µg/L	1 U	1 U	1 U	1 U	1 U	1 U
2-CHLOROTOLUENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-HEXANONE	-----	-----	µg/L	5 U	5 U	5 U	5 U	5 U	5 U
4-CHLOROTOLUENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-ISOPROPYLTOLUENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-METHYL-2-PANTANONE	-----	-----	µg/L	5 U	5 U	5 U	5 U	5 U	5 U
ACETONE	-----	-----	µg/L	5 U	5 U	5 U	5 U	5 U	5 U
ACROLEIN	-----	-----	µg/L	5 U	5 U	5 U	5 U	5 U	5 U
ACRYLONITRILE	-----	-----	µg/L	1 U	1 U	1 U	1 U	1 U	1 U
BENZENE	5	1	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
BROMOBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
BROMOCHLOROMETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
BROMOETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
BROMOFORM	-----	5	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
BROMOMETHANE	-----	-----	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
CARBON DISULFIDE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CARBON TETRACHLORIDE	5	0.3	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CFC-113	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CHLOROBENZENE	100	-----	µg/L	0.2 U	0.2 U	**2.29**	0.2 U	0.2 U	0.2 U
CHLOROBROMOMETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CHLORODIBROMOMETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CHLOROETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CHLOROFORM	-----	7	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CHLOROMETHANE	-----	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	-----	µg/L	0.2 U	0.2 U	0.2 U	**0.2**	0.2 U	0.2 U

Groundwater Quality Data
March 2020 Quarterly Monitoring Event

VOLATILE ORGANIC COMPOUNDS	State Drinking Water Standards (a)	State Ground-water Standards (b)	Units	MW-1	MW-3	MW-6	MW-8	MW-10	MW-9 (FD)
CIS-1,3-DICHLOROPROPENE	-----	0.2	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
DIBROMOETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
DICHLOROBROMOMETHANE	-----	0.5	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
ETHYLBENZENE	700	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
ETHYLENE DIBROMIDE	-----	0.001	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
HEXACHLOROBUTADIENE	-----	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
IODOMETHANE	-----	-----	µg/L	1 U	1 U	1 U	1 U	1 U	1 U
ISOPROPYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
METHYLENE CHLORIDE	5	5	µg/L	1 U	1 U	1 U	1 U	1 U	1 U
M & P-XYLENE	10	-----	µg/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
NAPHTHALENE	-----	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
N-BUTYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
N-PROPYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
O-XYLENE	10	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
SEC-BUTYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
STYRENE	100	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TERT-BUTLYBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TETRACHLOROETHENE	5	0.8	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TOLUENE	1000	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TRANS-1,2-DICHLOROETHENE	100	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TRANS-1,3-DICHLOROPROPENE	-----	0.2	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TRANS-1,4-DICHLORO-2-BUTENE			µg/L	1 U	1 U	1 U	1 U	1 U	1 U
TRICHLOROETHENE	5	3	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TRICHLOROFLUOROMETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
VINYL ACETATE			µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
VINYL CHLORIDE	2	0.02	µg/L	0.02 UJ	0.02 UJ	0.02 UJ	0.02 UJ	0.02 UJ	0.02 UJ

Notes: **Concentration exceeds State Drinking Water Standards or Groundwater Standards**

FD = Field Duplicate of MW-3 was labeled MW-9.

Regulatory Standards:

All regulatory standards listed for VOCs are Primary Regulatory Standards

(a) WAC 246-290-310

(b) WAC 173-200-040

Data Qualifiers:

U = Indicates compound was analyzed for but was not detected at the specified detection limit.

Groundwater Quality Data
June 2020 Quarterly Monitoring Event

	State Drinking Water Standards (a)	State Ground-water Standards (b)	Site-Specific Cleanup Level (c)	Units	MW-1	MW-3	MW-6	MW-8	MW-10	MW-17 (FD)
CONVENTIONALS										
ALKALINITY	-----	-----	-----	mg/L	50.2	213	171	111	245	173
AMMONIA NITROGEN	-----	-----	-----	mg/L	0.040 U	0.040 U	0.041	0.040 U	0.087	0.040 U
BICARBONATE	-----	-----	-----	mg/L	50.2	213	171	111	245	173
CARBONATE	-----	-----	-----	mg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
CHEMICAL OXYGEN DEMAND (COD)	-----	-----	-----	mg/L	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
CHLORIDE	250**	250**	-----	mg/L	3.97	2.51	2.82	2.27	8.2	2.81
DISSOLVED OXYGEN	-----	-----	-----	mg/L	9.72	0.07	0.00	0.08	0.00	NA
NITRATE NITROGEN	10*	10*	-----	mg/L	0.22	0.02	0.37	0.03	0.24	0.37
NITRITE NITROGEN	1*	-----	-----	mg/L	0.01 U	0.01 U	0.06	0.10 U	0.01 U	0.06
OXIDATION REDUCTION POTENTIAL (ORP)	-----	-----	-----	mV	261.9	283.7	69.9	52.0	135.7	NA
pH (field)	-----	6.5-8.5**	-----	-log H+	6.5	**6.2**	6.7	6.7	6.7	NA
pH (laboratory)	-----	6.5-8.5**	-----	-log H+	7.0 HJ	**6.2** HJ	6.5 HJ	6.6 HJ	**6.2** HJ	**6.4** HJ
SPECIFIC CONDUCTANCE	700**	-----	-----	umhos/cm	114	449	321	208	489	NA
SULFATE	250**	250**	-----	mg/L	4.44	16.1	7.13	4.12	29.0	7.09
TEMPERATURE	-----	-----	-----	°C	10.6	11.5	11.5	10.2	11.2	NA
TOTAL COLIFORM	1/100 mL*	1/100 mL*	-----	cfu/100 mL	1 UJH	1 UJH	1 UJH	1 UJH	1 UJH	1 UJH
TOTAL ORGANIC CARBON (TOC)	-----	-----	-----	mg/L	0.5 U	3.03	1.79	0.67	3.56	1..67
TURBIDITY	-----	-----	-----	NTU	1.11	0.82	3.18	4.86	2.08	NA
DISSOLVED METALS										
ARSENIC	10*	0.05*	1.29	µg/L	**0.11**	**0.12**	**0.44**	**0.99**	**2.24**	**0.43**
BARIUM	2,000*	1,000*	-----	µg/L	3.9	16.8	15.9	4.1	21.9	16.2
CALCIUM	-----	-----	-----	mg/L	11.0	52.3	34.0	20.1	44.2	33.7
IRON	300**	300**	300	µg/L	20 U	20 U	176	**317**	20 U	182
MANGANESE	50**	50**	50	µg/L	1.0 U	**8,130**	**524**	**2,130**	**5,100**	**519**
POTASSIUM	-----	-----	-----	mg/L	0.62	0.90	1.53	0.98	1.43	1.47
SODIUM	20***	-----	-----	mg/L	4.74	9.53	9.88	7.95	20.9	9.74
ZINC	5,000**	5,000**	-----	µg/L	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
VOLATILE ORGANIC COMPOUNDS										
VINYL CHLORIDE	2*	0.02*	0.29	µg/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U

Notes:

Concentration exceeds Washington State Drinking Water or Groundwater Standards

FD = Field Duplicate of MW-6 was labeled MW-17.

NA = Not Analyzed

Regulatory Standards:

(a) WAC 246-290-310

(b) WAC 173-200-040

(c) Site-specific Cleanup Levels per Olalla Landfill Cleanup Action Plan, December 2014

* Primary Standard

** Secondary Standard

*** Recommended level of concern for consumers with restricted daily sodium intake.

Data Qualifiers:

H = Analyzed outside of holding time.

J = Estimated Value. Laboratory-measured pH exceeded its 15-minute holding time.

NA = Not Analyzed

U = Indicates compound was analyzed for, but not detected at the specified detection limit.

Groundwater Quality Data
June 2020 Quarterly Monitoring Event

VOLATILE ORGANIC COMPOUNDS	State Drinking Water Standards (a)	State Ground-water Standards (b)	Units	MW-1	MW-3	MW-6	MW-8	MW-10	MW-17 (FD)
1,1,1,2-TETRACHLOROETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,1-TRICHLOROETHANE	200	200	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2,2-TETRACHLOROETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2-TRICHLOROETHANE	5	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-DICHLOROETHANE	-----	1	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-DICHLOROETHENE	7	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-DICHLOROPROPENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,3-TRICHLOROBENZENE	-----	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-TRICHLOROPROPANE	-----	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-TRICHLOROBENZENE	70	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-TRIMETHYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-DIBROMO-3-CHLOROPROPANE	-----	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROBENZENE	600	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-DICHLOROETHANE	5	0.5	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-DICHLOROPROPANE	5	0.6	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3,5-TRIMETHYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-DICHLOROBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-DICHLOROPROPANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,4-DICHLOROBENZENE	75	4	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2,2-DICHLOROPROPANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-BUTANONE	-----	-----	µg/L	5 U	5 U	5 U	5 U	5 U	5 U
2-CHLOROETHYLVINYLETHER	-----	-----	µg/L	1 U	1 U	1 U	1 U	1 U	1 U
2-CHLOROTOLUENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-HEXANONE	-----	-----	µg/L	5 U	5 U	5 U	5 U	5 U	5 U
4-CHLOROTOLUENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-ISOPROPYLTOLUENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-METHYL-2-PANTANONE	-----	-----	µg/L	5 U	5 U	5 U	5 U	5 U	5 U
ACETONE	-----	-----	µg/L	5 U	5 U	5 U	5 U	5 U	5 U
ACROLEIN	-----	-----	µg/L	5 U	5 U	5 U	5 U	5 U	5 U
ACRYLONITRILE	-----	-----	µg/L	1 U	1 U	1 U	1 U	1 U	1 U
BENZENE	5	1	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
BROMOBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
BROMOCHLOROMETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
BROMOETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
BROMOFORM	-----	5	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
BROMOMETHANE	-----	-----	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
CARBON DISULFIDE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CARBON TETRACHLORIDE	5	0.3	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CFC-113	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CHLOROBENZENE	100	-----	µg/L	0.2 U	0.2 U	**2.48**	0.2 U	0.2 U	**1.92**
CHLOROBROMOMETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CHLORODIBROMOMETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CHLOROETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CHLOROFORM	-----	7	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CHLOROMETHANE	-----	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U

Groundwater Quality Data
June 2020 Quarterly Monitoring Event

VOLATILE ORGANIC COMPOUNDS	State Drinking Water Standards (a)	State Ground-water Standards (b)	Units	MW-1	MW-3	MW-6	MW-8	MW-10	MW-17 (FD)
CIS-1,3-DICHLOROPROPENE	-----	0.2	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
DIBROMOETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
DICHLOROBROMOMETHANE	-----	0.5	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
ETHYLBENZENE	700	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
ETHYLENE DIBROMIDE	-----	0.001	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
HEXACHLOROBUTADIENE	-----	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
IODOMETHANE	-----	-----	µg/L	1 U	1 U	1 U	1 U	1 U	1 U
ISOPROPYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
METHYLENE CHLORIDE	5	5	µg/L	1 U	1 U	1 U	1 U	1 U	1 U
M & P-XYLENE	10	-----	µg/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
NAPHTHALENE	-----	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
N-BUTYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
N-PROPYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
O-XYLENE	10	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
SEC-BUTYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
STYRENE	100	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TERT-BUTLYBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TETRACHLOROETHENE	5	0.8	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TOLUENE	1000	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TRANS-1,2-DICHLOROETHENE	100	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TRANS-1,3-DICHLOROPROPENE	-----	0.2	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TRANS-1,4-DICHLORO-2-BUTENE			µg/L	1 U	1 U	1 U	1 U	1 U	1 U
TRICHLOROETHENE	5	3	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TRICHLOROFLUOROMETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
VINYL ACETATE			µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
VINYL CHLORIDE	2	0.02	µg/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U

Notes: **Concentration exceeds State Drinking Water Standards or Groundwater Standards**

FD = Field Duplicate of MW-6 was labeled MW-17.

Regulatory Standards:

All regulatory standards listed for VOCs are Primary Regulatory Standards

(a) WAC 246-290-310

(b) WAC 173-200-040

Data Qualifiers:

U = Indicates compound was analyzed for but was not detected at the specified detection limit.

Groundwater Quality Data
September 2020 Quarterly Monitoring Event

	State Drinking Water Standards (a)	State Ground-water Standards (b)	Site-Specific Cleanup Level (c)	Units	MW-1	MW-3	MW-6	MW-8	MW-10	MW-12 (FD)
CONVENTIONALS										
ALKALINITY	-----	-----	-----	mg/L	52.2	178	205	80.7	211	83.7
AMMONIA NITROGEN	-----	-----	-----	mg/L	0.040 U	0.040 U	0.040 U	0.040 U	0.103	0.040 U
BICARBONATE	-----	-----	-----	mg/L	52.2	178	205	80.7	211	83.7
CARBONATE	-----	-----	-----	mg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
CHEMICAL OXYGEN DEMAND (COD)	-----	-----	-----	mg/L	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
CHLORIDE	250**	250**	-----	mg/L	4.91	2.98	1.92	2.32	6.43	2.25
DISSOLVED OXYGEN	-----	-----	-----	mg/L	9.90	0.11	0.09	0.19	0.47	NA
NITRATE NITROGEN	10*	10*	-----	mg/L	0.10	0.05	0.02 U	0.04	0.02 U	0.02
NITRITE NITROGEN	1*	-----	-----	mg/L	0.01 U	0.01 U	0.01 U	0.10 U	0.01 U	0.01 U
OXIDATION REDUCTION POTENTIAL (ORP)	-----	-----	-----	mV	258.8	271.0	36.9	81.7	129.9	NA
pH (field)	-----	6.5-8.5**	-----	-log H+	**6.2**	**6.3**	6.7	**6.3**	6.7	NA
pH (laboratory)	-----	6.5-8.5**	-----	-log H+	**6.3** H	**6.2** H	6.5 H	6.5 H	6.7 H	6.6 H
SPECIFIC CONDUCTANCE	700**	-----	-----	umhos/cm	124	364	382	160	401	NA
SULFATE	250**	250**	-----	mg/L	4.04	15.2	9.40	3.40	10.1	3.74
TEMPERATURE	-----	-----	-----	°C	10.7	11.7	11.3	10.5	10.8	NA
TOTAL COLIFORM	1/100 mL*	1/100 mL*	-----	cfu/100 mL	1 U	1 U	1 U	1 U	1 U	1 U
TOTAL ORGANIC CARBON (TOC)	-----	-----	-----	mg/L	0.5 U	1.95	1.89	0.5 U	2.59	0.53
TURBIDITY	-----	-----	-----	NTU	0.32	0.36	0.66	4.99	0.25	NA
DISSOLVED METALS										
ARSENIC	10*	0.05*	1.29	µg/L	**0.09**	**0.11**	**0.44**	**0.69**	**1.96**	**0.72**
BARIUM	2,000*	1,000*	-----	µg/L	4.7	15.2	20.1	4.7	14.5	4.1
CALCIUM	-----	-----	-----	mg/L	11.4	42.4	41.5	16.1	39.2	15.1
IRON	300**	300**	300	µg/L	20 U	20 U	**384**	20 U	20 U	57.1
MANGANESE	50**	50**	50	µg/L	3.0	**6,080**	**513**	**2,140**	**4,060**	**2,130**
POTASSIUM	-----	-----	-----	mg/L	0.65	0.82	1.85	0.99	1.28	0.98
SODIUM	20***	-----	-----	mg/L	4.86	8.53	12.50	7.49	17.0	7.30
ZINC	5,000**	5,000**	-----	µg/L	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
VOLATILE ORGANIC COMPOUNDS										
VINYL CHLORIDE	2*	0.02*	0.29	µg/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U

Notes:

Concentration exceeds Washington State Drinking Water or Groundwater Standards

FD = Field Duplicate of MW-8 was labeled MW-12.

NA = Not Analyzed

Regulatory Standards:

(a) WAC 246-290-310

(b) WAC 173-200-040

(c) Site-specific Cleanup Levels per Olalla Landfill Cleanup Action Plan, December 2014

* Primary Standard

** Secondary Standard

*** Recommended level of concern for consumers with restricted daily sodium intake.

Data Qualifiers:

H = Analyzed outside of holding time.

J = Estimated Value. Laboratory-measured pH exceeded its 15-minute holding time.

NA = Not Analyzed

U = Indicates compound was analyzed for, but not detected at the specified detection limit.

Groundwater Quality Data
September 2020 Quarterly Monitoring Event

VOLATILE ORGANIC COMPOUNDS	State Drinking Water Standards (a)	State Ground-water Standards (b)	Units	MW-1	MW-3	MW-6	MW-8	MW-10	MW-12 (FD)
1,1,1,2-TETRACHLOROETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,1-TRICHLOROETHANE	200	200	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2,2-TETRACHLOROETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2-TRICHLOROETHANE	5	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-DICHLOROETHANE	-----	1	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-DICHLOROETHENE	7	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-DICHLOROPROPENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,3-TRICHLOROBENZENE	-----	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-TRICHLOROPROPANE	-----	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-TRICHLOROBENZENE	70	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-TRIMETHYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-DIBROMO-3-CHLOROPROPANE	-----	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROBENZENE	600	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-DICHLOROETHANE	5	0.5	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-DICHLOROPROPANE	5	0.6	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3,5-TRIMETHYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-DICHLOROBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-DICHLOROPROPANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,4-DICHLOROBENZENE	75	4	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2,2-DICHLOROPROPANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-BUTANONE	-----	-----	µg/L	5 U	5 U	5 U	5 U	5 U	5 U
2-CHLOROETHYLVINYLETHER	-----	-----	µg/L	1 U	1 U	1 U	1 U	1 U	1 U
2-CHLOROTOLUENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-HEXANONE	-----	-----	µg/L	5 U	5 U	5 U	5 U	5 U	5 U
4-CHLOROTOLUENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-ISOPROPYLTOLUENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-METHYL-2-PANTANONE	-----	-----	µg/L	5 U	5 U	5 U	5 U	5 U	5 U
ACETONE	-----	-----	µg/L	5 U	5 U	5 U	5 U	5 U	5 U
ACROLEIN	-----	-----	µg/L	5 U	5 U	5 U	5 U	5 U	5 U
ACRYLONITRILE	-----	-----	µg/L	1 U	1 U	1 U	1 U	1 U	1 U
BENZENE	5	1	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
BROMOBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
BROMOCHLOROMETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
BROMOETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
BROMOFORM	-----	5	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
BROMOMETHANE	-----	-----	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
CARBON DISULFIDE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CARBON TETRACHLORIDE	5	0.3	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CFC-113	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CHLOROBENZENE	100	-----	µg/L	0.2 U	0.2 U	**2.29**	0.2 U	0.2 U	0.2 U
CHLOROBROMOMETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CHLORODIBROMOMETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CHLOROETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CHLOROFORM	-----	7	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CHLOROMETHANE	-----	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U

Groundwater Quality Data
September 2020 Quarterly Monitoring Event

VOLATILE ORGANIC COMPOUNDS	State Drinking Water Standards (a)	State Ground-water Standards (b)	Units	MW-1	MW-3	MW-6	MW-8	MW-10	MW-12 (FD)
CIS-1,3-DICHLOROPROPENE	-----	0.2	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
DIBROMOETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
DICHLOROBROMOMETHANE	-----	0.5	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
ETHYLBENZENE	700	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
ETHYLENE DIBROMIDE	-----	0.001	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
HEXACHLOROBUTADIENE	-----	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
IODOMETHANE	-----	-----	µg/L	1 U	1 U	1 U	1 U	1 U	1 U
ISOPROPYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
METHYLENE CHLORIDE	5	5	µg/L	1 U	1 U	1 U	1 U	1 U	1 U
M & P-XYLENE	10	-----	µg/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
NAPHTHALENE	-----	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
N-BUTYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
N-PROPYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
O-XYLENE	10	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
SEC-BUTYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
STYRENE	100	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TERT-BUTLYBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TETRACHLOROETHENE	5	0.8	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TOLUENE	1000	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TRANS-1,2-DICHLOROETHENE	100	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TRANS-1,3-DICHLOROPROPENE	-----	0.2	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TRANS-1,4-DICHLORO-2-BUTENE			µg/L	1 U	1 U	1 U	1 U	1 U	1 U
TRICHLOROETHENE	5	3	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TRICHLOROFLUOROMETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
VINYL ACETATE			µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
VINYL CHLORIDE	2	0.02	µg/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U

Notes: **Concentration exceeds State Drinking Water Standards or Groundwater Standards**

FD = Field Duplicate of MW-8 was labeled MW-12.

Regulatory Standards:

All regulatory standards listed for VOCs are Primary Regulatory Standards

(a) WAC 246-290-310

(b) WAC 173-200-040

Data Qualifiers:

U = Indicates compound was analyzed for but was not detected at the specified detection limit.

Groundwater Quality Data
December 2020 Quarterly Monitoring Event
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	State Drinking Water Standards (a)	State Ground-water Standards (b)	State Surface Water Standards (c)	Site-Specific Cleanup Level (d)	Units	MW-1	MW-3	MW-5A	MW-6	MW-7	MW-8	MW-10	SW-2
CONVENTIONALS													
ALKALINITY	-----	-----	-----	-----	mg/L	49.8	140	NA	182	NA	151.0	192	NA
AMMONIA NITROGEN	-----	-----	-----	-----	mg/L	0.040 U	0.040 U	NA	0.040 U	NA	0.040 U	0.085	NA
BICARBONATE	-----	-----	-----	-----	mg/L	49.8	140	NA	182	NA	151	192	NA
CARBONATE	-----	-----		-----	mg/L	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	1.0 U	NA
CHEMICAL OXYGEN DEMAND (COD)	-----	-----	-----	-----	mg/L	10.0 U	10.0 U	NA	10.0 U	NA	10.0 U	10.0 U	NA
CHLORIDE	250**	250**	-----	-----	mg/L	4.32	3.18	NA	3.11	NA	2.30	6.16	NA
DISSOLVED OXYGEN	-----	-----	-----	-----	mg/L	9.59	0.37	10.41	0.38	7.17	1.67	0.34	NA
NITRATE NITROGEN	10*	10*	<10	-----	mg/L	0.30	0.07	NA	0.03 U	NA	0.02	0.02 U	0.02 U
NITRITE NITROGEN	1*	-----	-----	-----	mg/L	0.01 U	0.01 U	NA	0.01 U	NA	0.10 U	0.01 U	0.01 U
OXIDATION REDUCTION POTENTIAL (ORP)	-----	-----	-----	-----	mV	236.7	243.7	228.5	198.0	135.4	115.6	234.7	NA
pH (field)	-----	6.5-8.5**	6.5-8.5	-----	-log H+	**5.7**	**5.8**	**6.2**	**6.4**	6.6	6.5	**6.4**	**5.2**
pH (laboratory)	-----	6.5-8.5**	6.5-8.5	-----	-log H+	**5.9** JH	**6.2** JH	**6.3** JH	6.6 JH	6.7 JH	**5.5** JH	6.5 JH	**6.4** JH
SPECIFIC CONDUCTANCE	700**	-----	-----	-----	umhos/cm	268	245	239	466	249	421	487	59
SULFATE	250**	250**	-----	-----	mg/L	3.89	12.3	NA	5.81	NA	5.69	7.92	NA
TEMPERATURE	-----	-----	<16	-----	°C	12.0	11.7	12.4	12.1	11.3	11.6	11.4	7.7
FECAL COLIFORM	-----	-----	100	-----	cfu/100 mL	NA	NA	NA	NA	NA	NA	NA	31
TOTAL COLIFORM	1/100 mL*	1/100 mL*	-----	-----	cfu/100 mL	1 JU	1 U	NA	1 U	NA	1 U	1 U	NA
TOTAL ORGANIC CARBON (TOC)	-----	-----	-----	-----	mg/L	0.5 U	1.85	NA	1.89	NA	0.9	2.64	NA
TURBIDITY	-----	-----	-----	-----	NTU	1.19	0.17	1.51	3.84	0.8	1.45	1.04	NA
DISSOLVED METALS													
ARSENIC	10*	0.05*	-----	1.29	µg/L	**0.09**	**0.11** D	**0.21**	**0.31** D	**0.28**	**1.60** D	**2.52** D	NA
BARIUM	2,000*	1,000*	-----	-----	µg/L	6.0 U	14.3	NA	20.0	NA	8.0	17.6	NA
CALCIUM	-----	-----	-----	-----	mg/L	11.1	32.2	NA	34.7	NA	30.4	34.9	NA
IRON	300**	300**	-----	300	µg/L	20 U	20 U	23	223	20 U	**706**	20 U	NA
MANGANESE	50**	50**	-----	50	µg/L	4.0 U	**4,090**	4.0 U	**324**	4.0 U	**2,430**	**3,740**	NA
POTASSIUM	-----	-----	-----	-----	mg/L	0.64	0.68	NA	1.61	NA	1.17	1.31	NA
SODIUM	20***	-----	-----	-----	mg/L	4.19	6.91	NA	11.90	NA	8.95	15.5	NA
ZINC	5,000**	5,000**	-----	-----	µg/L	4.0 U	4.0 U	NA	4.0 U	NA	4.0 U	4.0 U	NA
VOLATILE ORGANIC COMPOUNDS													
VINYL CHLORIDE	2*	0.02*	-----	0.29	µg/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	NA

Notes:

Concentration exceeds Washington State Drinking Water, Groundwater, or Surface Water Standards

NA = Not Analyzed

Regulatory Standards:

(a) WAC 246-290-310

(b) WAC 173-200-040

(c) WAC 173-201A-200 - Nitrate and Nitrite Standards noted are for Class AA water. Fecal coliform standard is 100/100mL for Primary Contact Recreation. The appropriate class of water for the detention pond has not been established.

(d) Site-specific Cleanup Levels per Olalla Landfill Cleanup Action Plan, December 2014

* Primary Standard

** Secondary Standard

*** Recommended level of concern for consumers with restricted daily sodium intake.

Data Qualifiers:

D = The reported value is from a dilution.

H = Analyzed outside of holding time.

U = Indicates compound was analyzed for, but not detected at the specified detection limit.

Groundwater Quality Data
December 2020 Quarterly Monitoring Event

VOLATILE ORGANIC COMPOUNDS	State Drinking Water Standards (a)	State Ground-water Standards (b)	Units	MW-1	MW-3	MW-6	MW-8	MW-10
1,1,1,2-TETRACHLOROETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,1-TRICHLOROETHANE	200	200	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2,2-TETRACHLOROETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2-TRICHLOROETHANE	5	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-DICHLOROETHANE	-----	1	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-DICHLOROETHENE	7	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-DICHLOROPROPENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,3-TRICHLOROBENZENE	-----	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-TRICHLOROPROPANE	-----	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-TRICHLOROBENZENE	70	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-TRIMETHYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-DIBROMO-3-CHLOROPROPANE	-----	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROBENZENE	600	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-DICHLOROETHANE	5	0.5	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-DICHLOROPROPANE	5	0.6	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3,5-TRIMETHYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-DICHLOROBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-DICHLOROPROPANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,4-DICHLOROBENZENE	75	4	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2,2-DICHLOROPROPANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-BUTANONE	-----	-----	µg/L	5 U	5 U	5 U	5 U	5 U
2-CHLOROETHYLVINYLETHER	-----	-----	µg/L	1 U	1 U	1 U	1 U	1 U
2-CHLOROTOLUENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-HEXANONE	-----	-----	µg/L	5 U	5 U	5 U	5 U	5 U
4-CHLOROTOLUENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-ISOPROPYLTOLUENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-METHYL-2-PANTANONE	-----	-----	µg/L	5 U	5 U	5 U	5 U	5 U
ACETONE	-----	-----	µg/L	5 U	5 U	5 U	5 U	5 U
ACROLEIN	-----	-----	µg/L	5 U	5 U	5 U	5 U	5 U
ACRYLONITRILE	-----	-----	µg/L	1 U	1 U	1 U	1 U	1 U
BENZENE	5	1	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
BROMOBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
BROMOCHLOROMETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
BROMOETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
BROMOFORM	-----	5	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
BROMOMETHANE	-----	-----	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
CARBON DISULFIDE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CARBON TETRACHLORIDE	5	0.3	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CFC-113	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CHLOROBENZENE	100	-----	µg/L	0.2 U	0.2 U	**2.05**	0.2 U	0.2 U
CHLOROBROMOMETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CHLORODIBROMOMETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CHLOROETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CHLOROFORM	-----	7	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CHLOROMETHANE	-----	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U

Groundwater Quality Data
December 2020 Quarterly Monitoring Event

VOLATILE ORGANIC COMPOUNDS	State Drinking Water Standards (a)	State Ground-water Standards (b)	Units	MW-1	MW-3	MW-6	MW-8	MW-10
CIS-1,3-DICHLOROPROPENE	-----	0.2	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
DIBROMOETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
DICHLOROBROMOMETHANE	-----	0.5	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
ETHYLBENZENE	700	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
ETHYLENE DIBROMIDE	-----	0.001	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
HEXACHLOROBUTADIENE	-----	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
IODOMETHANE	-----	-----	µg/L	1 U	1 U	1 U	1 U	1 U
ISOPROPYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
METHYLENE CHLORIDE	5	5	µg/L	1 U	1 U	1 U	1 U	1 U
M & P-XYLENE	10	-----	µg/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
NAPHTHALENE	-----	-----	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
N-BUTYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
N-PROPYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
O-XYLENE	10	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
SEC-BUTYLBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
STYRENE	100	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TERT-BUTLYBENZENE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TETRACHLOROETHENE	5	0.8	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TOLUENE	1000	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TRANS-1,2-DICHLOROETHENE	100	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TRANS-1,3-DICHLOROPROPENE	-----	0.2	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TRANS-1,4-DICHLORO-2-BUTENE			µg/L	1 U	1 U	1 U	1 U	1 U
TRICHLOROETHENE	5	3	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TRICHLOROFLUOROMETHANE	-----	-----	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
VINYL ACETATE			µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
VINYL CHLORIDE	2	0.02	µg/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U

Notes:

Regulatory Standards:

All regulatory standards listed for VOCs are Primary Regulatory Standards

(a) WAC 246-290-310

(b) WAC 173-200-040

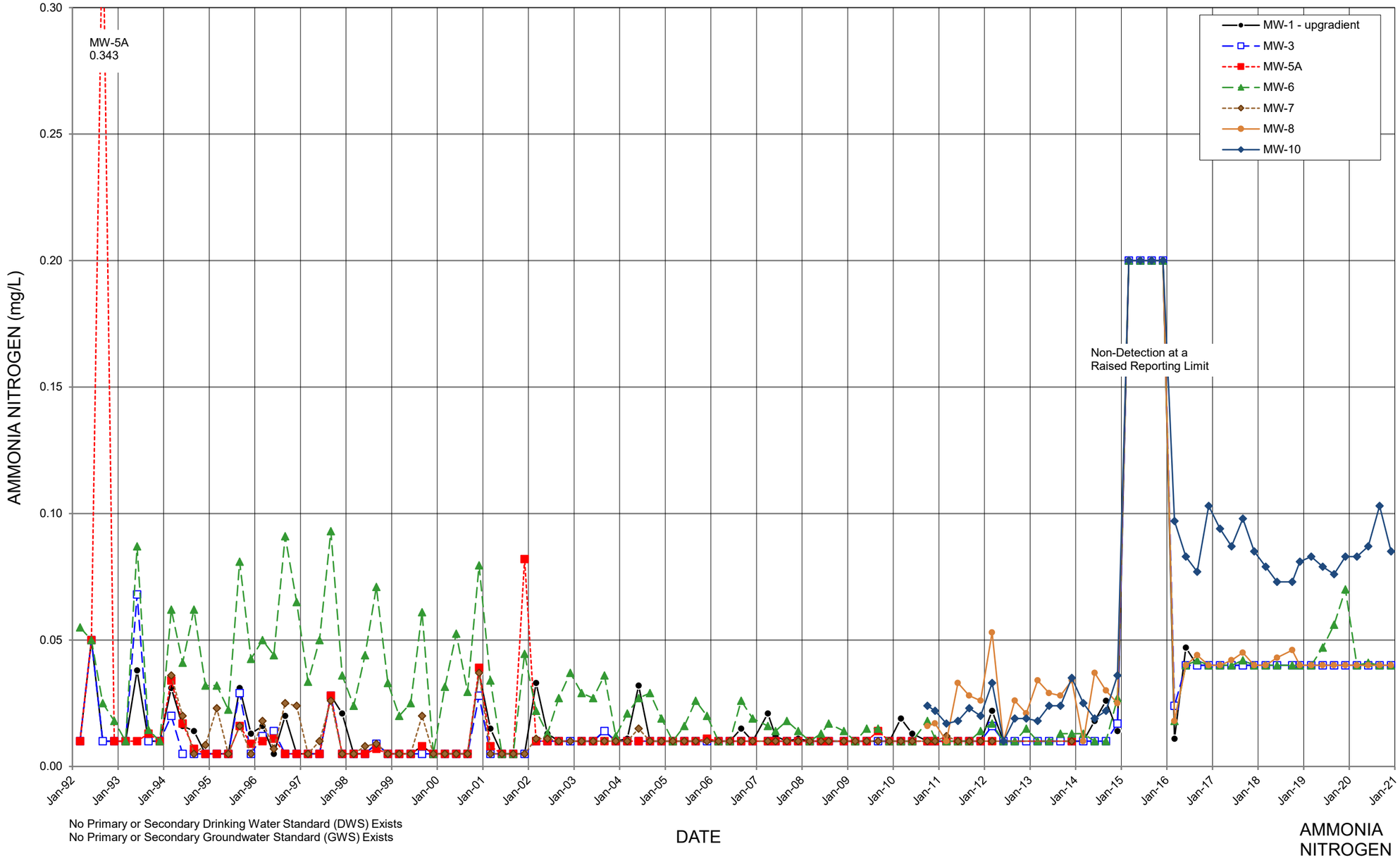
Data Qualifiers:

U = Indicates compound was analyzed for but was not detected at the specified detection limit.

Appendix B:
2020 Statistical Summaries

Time-Series Plots through December 2020
Mann-Kendall Statistically Significant Trend Test Summary Tables
Shapiro-Wilk Test for Normality Summary Tables
Confidence Interval Summary Tables

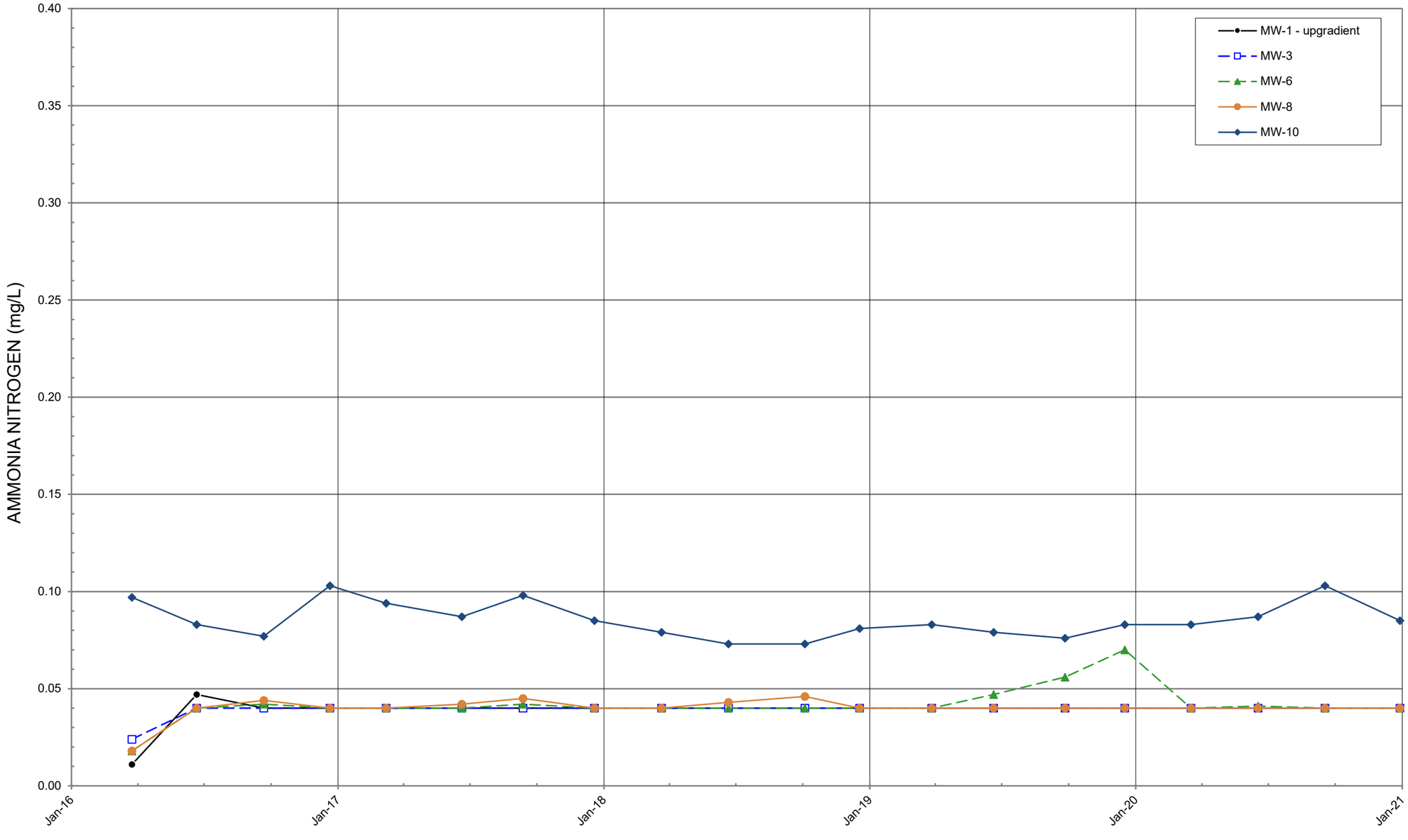
OLALLA LANDFILL
Quarterly Monitoring Data



No Primary or Secondary Drinking Water Standard (DWS) Exists
No Primary or Secondary Groundwater Standard (GWS) Exists

AMMONIA
NITROGEN

OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)

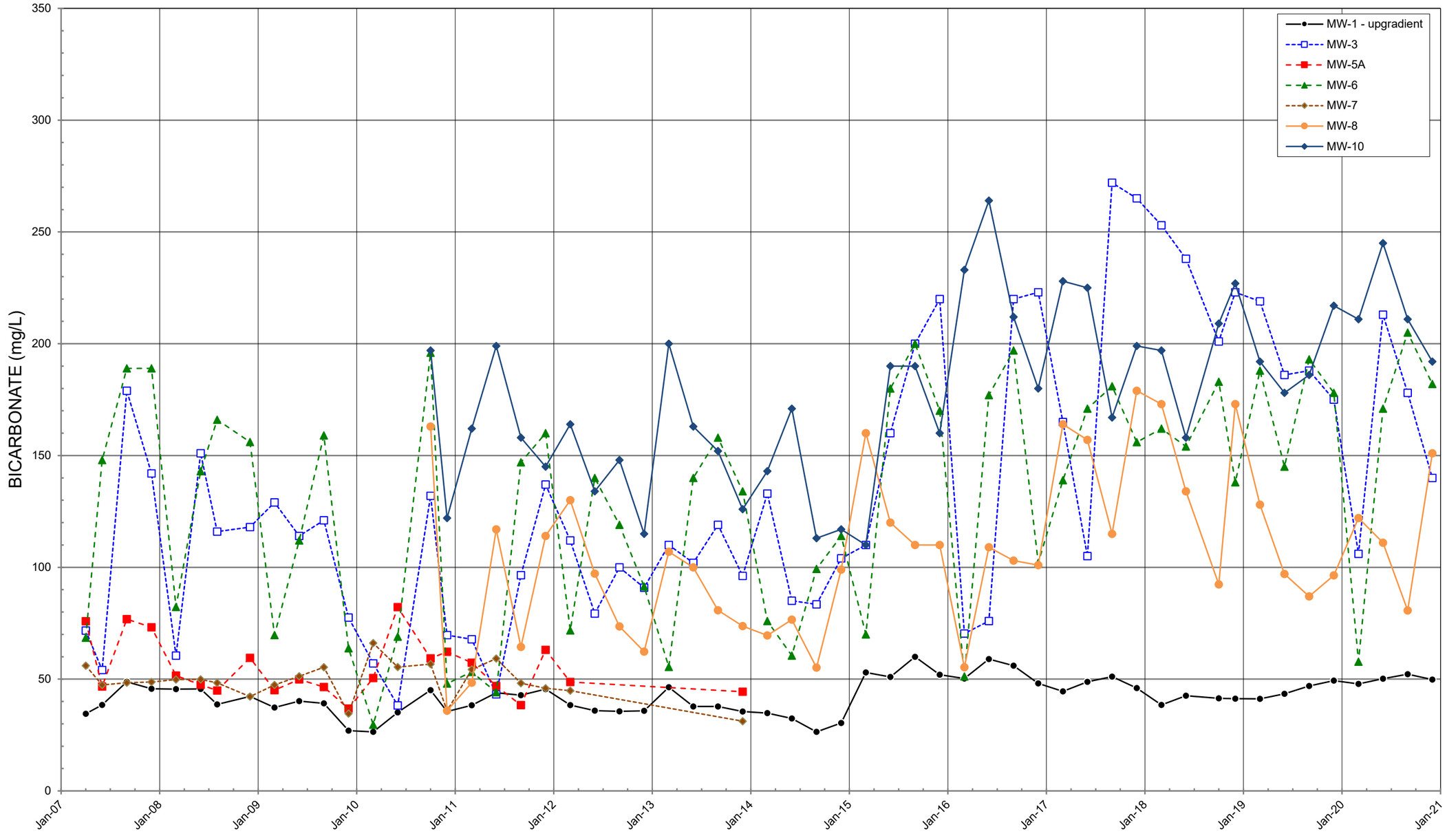


No Primary or Secondary Drinking Water Standard (DWS) Exists
No Primary or Secondary Groundwater Standard (GWS) Exists

DATE

AMMONIA NITROGEN
(RECENT)

OLALLA LANDFILL
Quarterly Monitoring Data

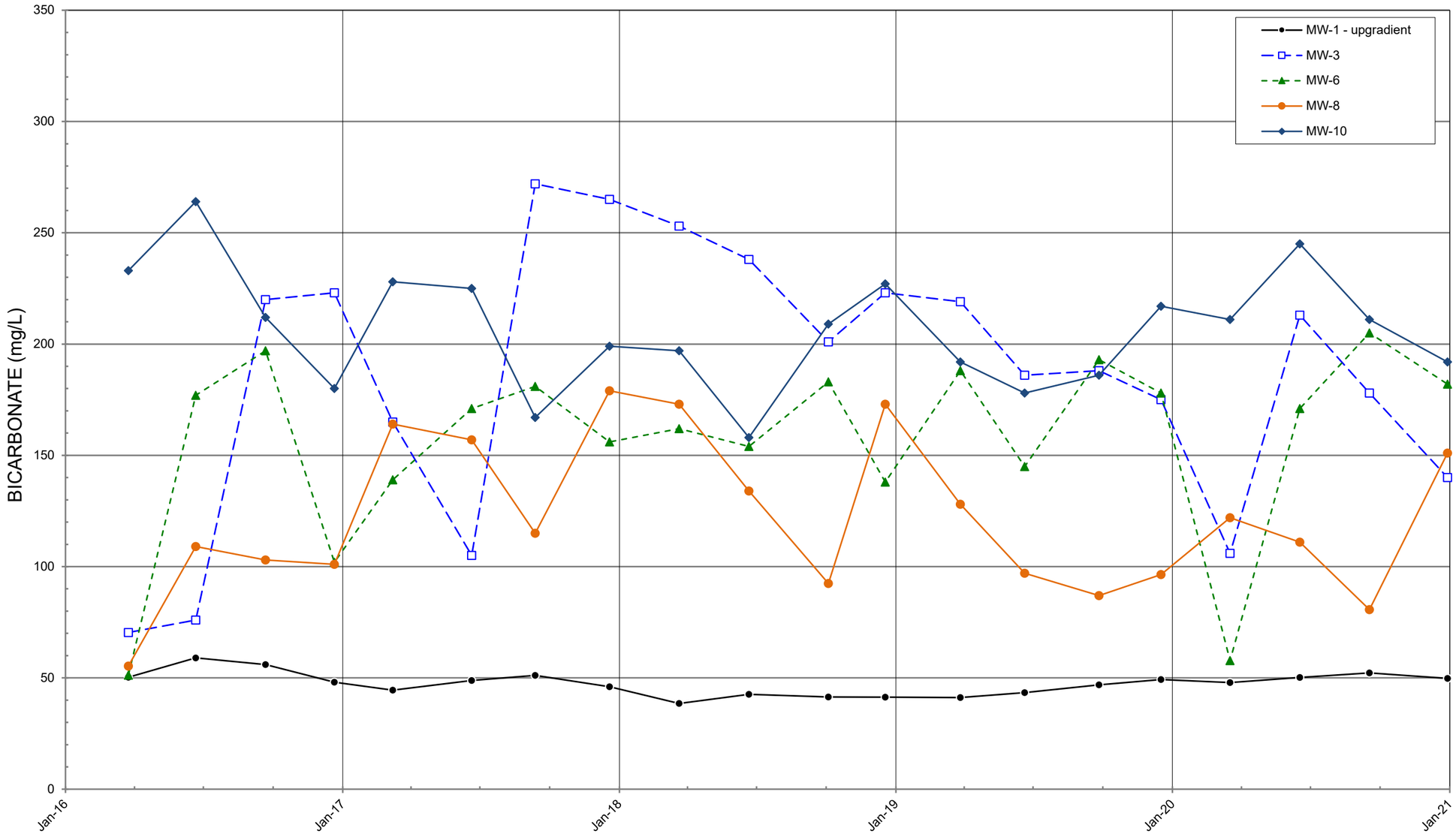


No Primary or Secondary Drinking Water Standard (DWS) Exists
No Primary or Secondary Groundwater Standard (GWS) Exists

DATE

BICARBONATE
(Analysis started in 2007)

OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)

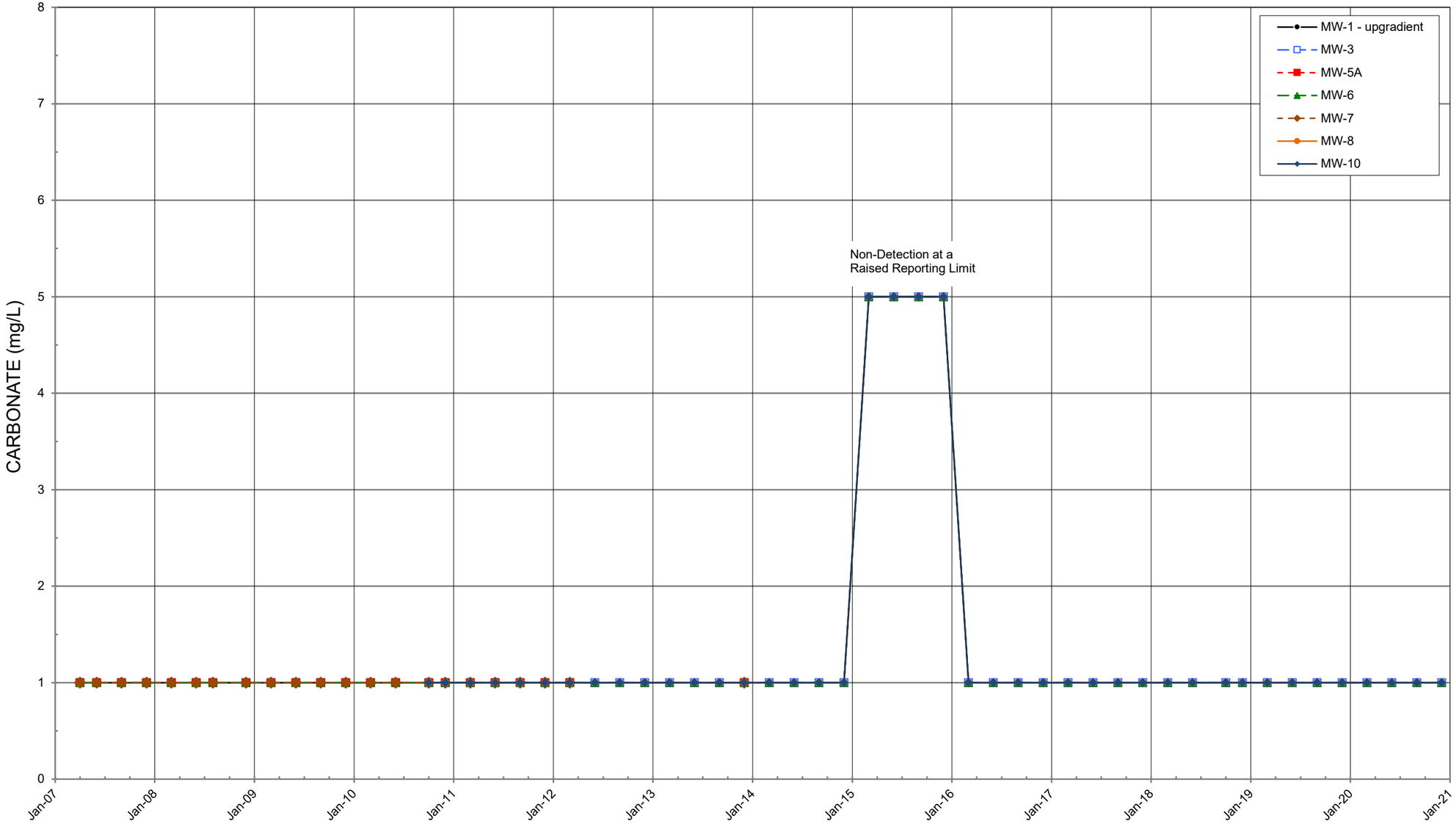


No Primary or Secondary Drinking Water Standard (DWS) Exists
No Primary or Secondary Groundwater Standard (GWS) Exists

DATE

BICARBONATE
(RECENT)

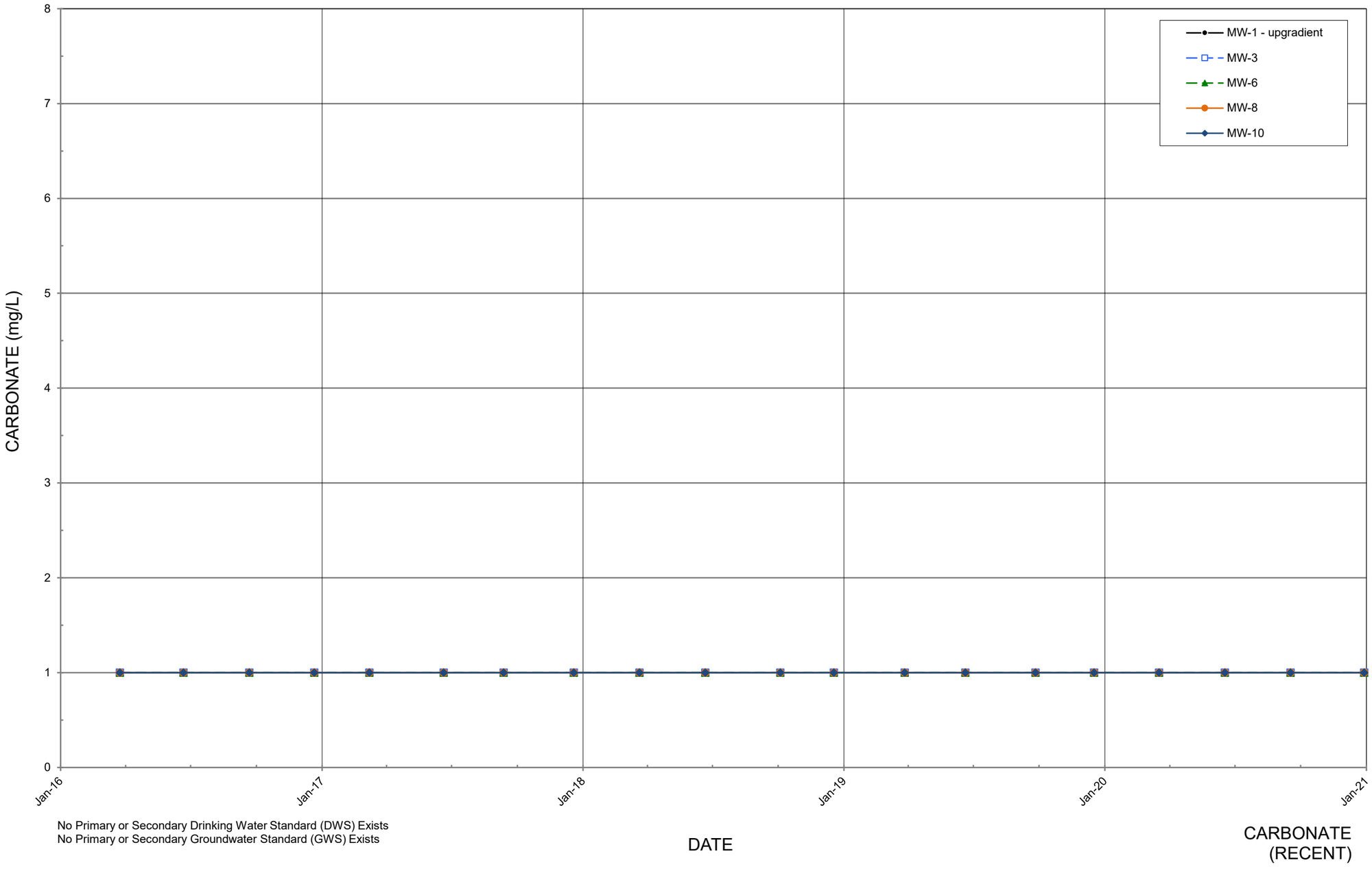
OLALLA LANDFILL
Quarterly Monitoring Data



No Primary or Secondary Drinking Water Standard (DWS) Exists
No Primary or Secondary Groundwater Standard (GWS) Exists

CARBONATE
(Analysis started in 2007)

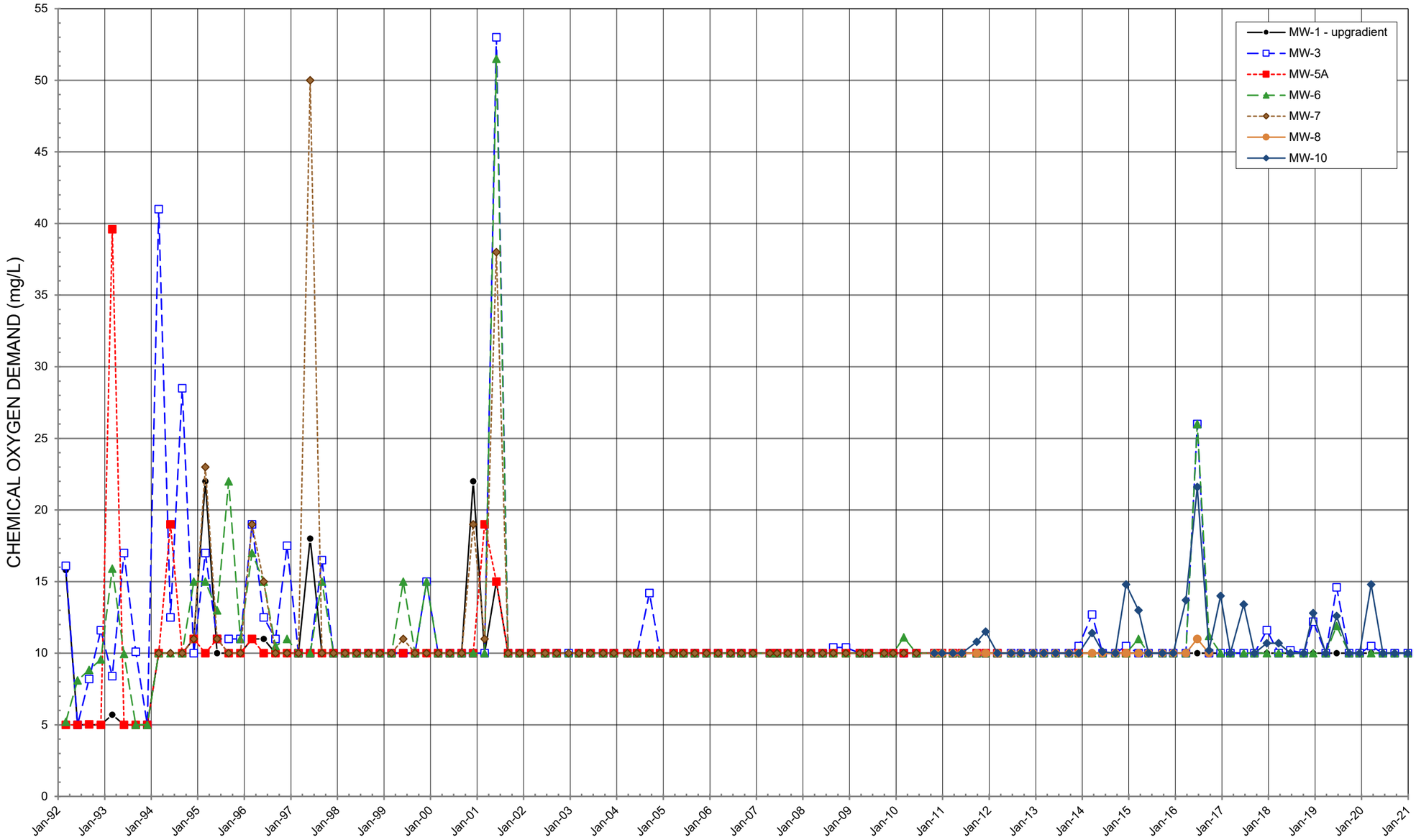
OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)



No Primary or Secondary Drinking Water Standard (DWS) Exists
No Primary or Secondary Groundwater Standard (GWS) Exists

CARBONATE
(RECENT)

OLALLA LANDFILL
Quarterly Monitoring Data

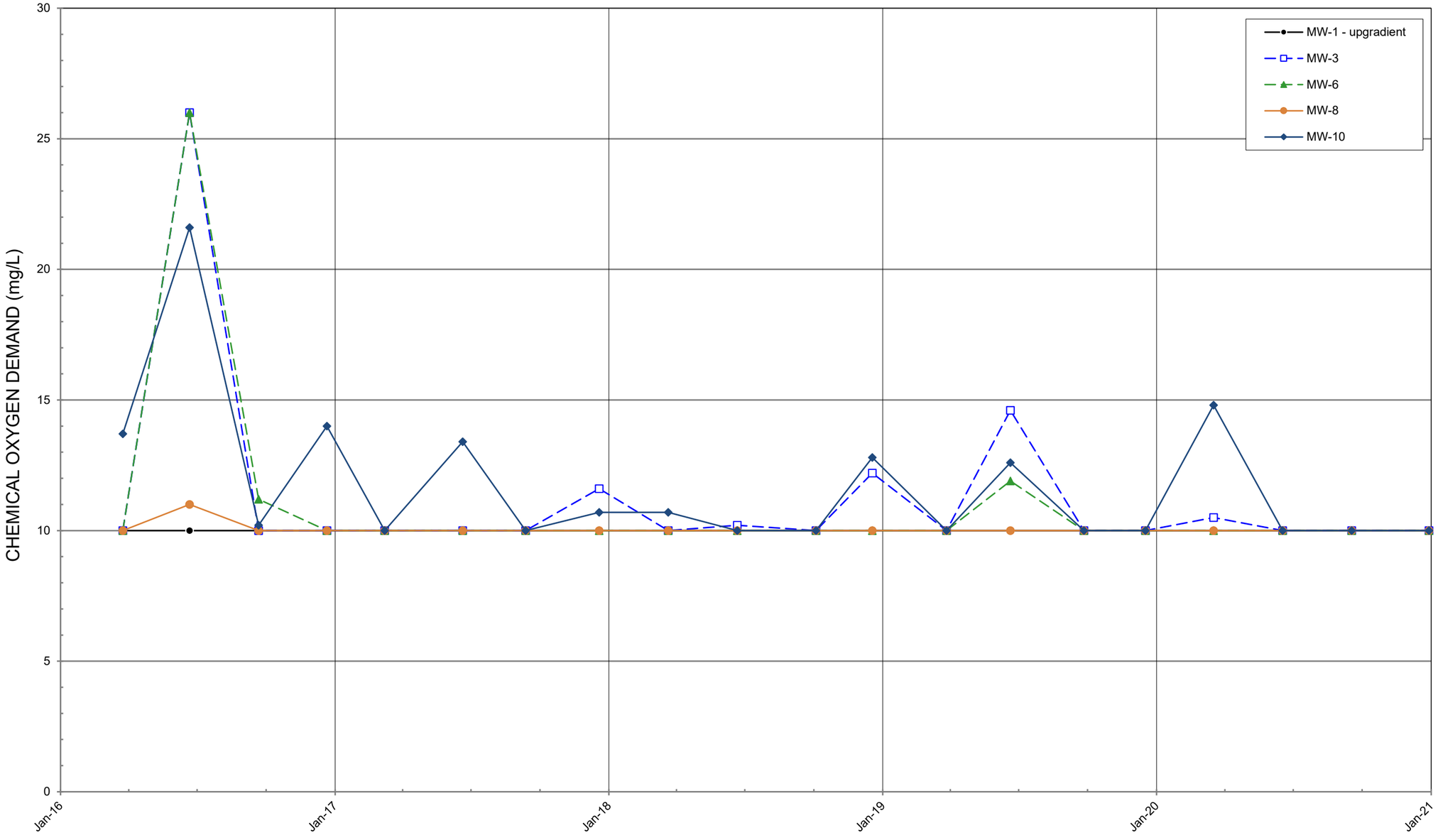


No Primary or Secondary Drinking Water Standard (DWS) Exists
No Primary or Secondary Groundwater Standard (GWS) Exists

DATE

CHEMICAL OXYGEN DEMAND

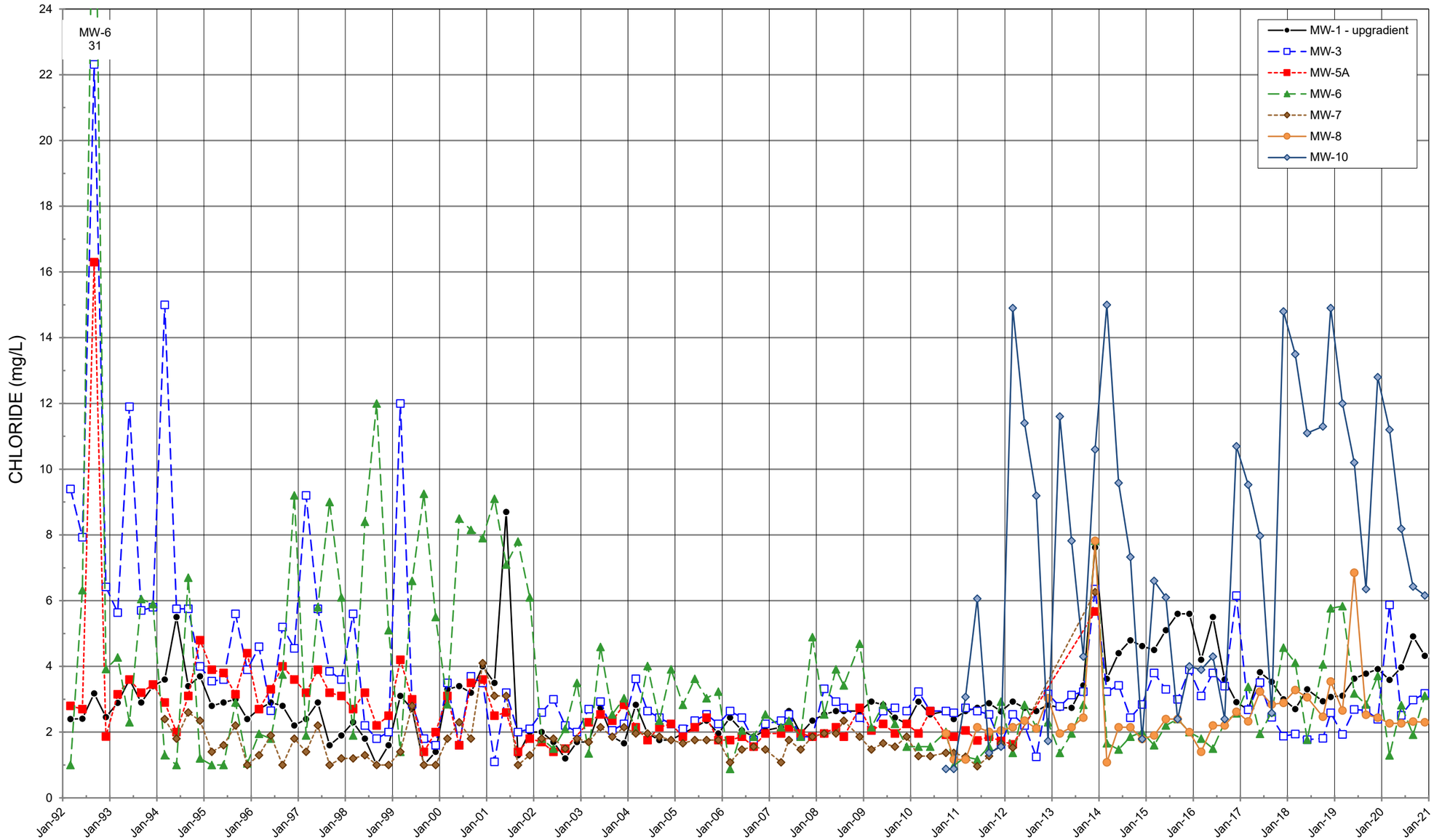
OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)



No Primary or Secondary Drinking Water Standard (DWS) Exists
No Primary or Secondary Groundwater Standard (GWS) Exists

CHEMICAL OXYGEN DEMAND (RECENT)

OLALLA LANDFILL
Quarterly Monitoring Data

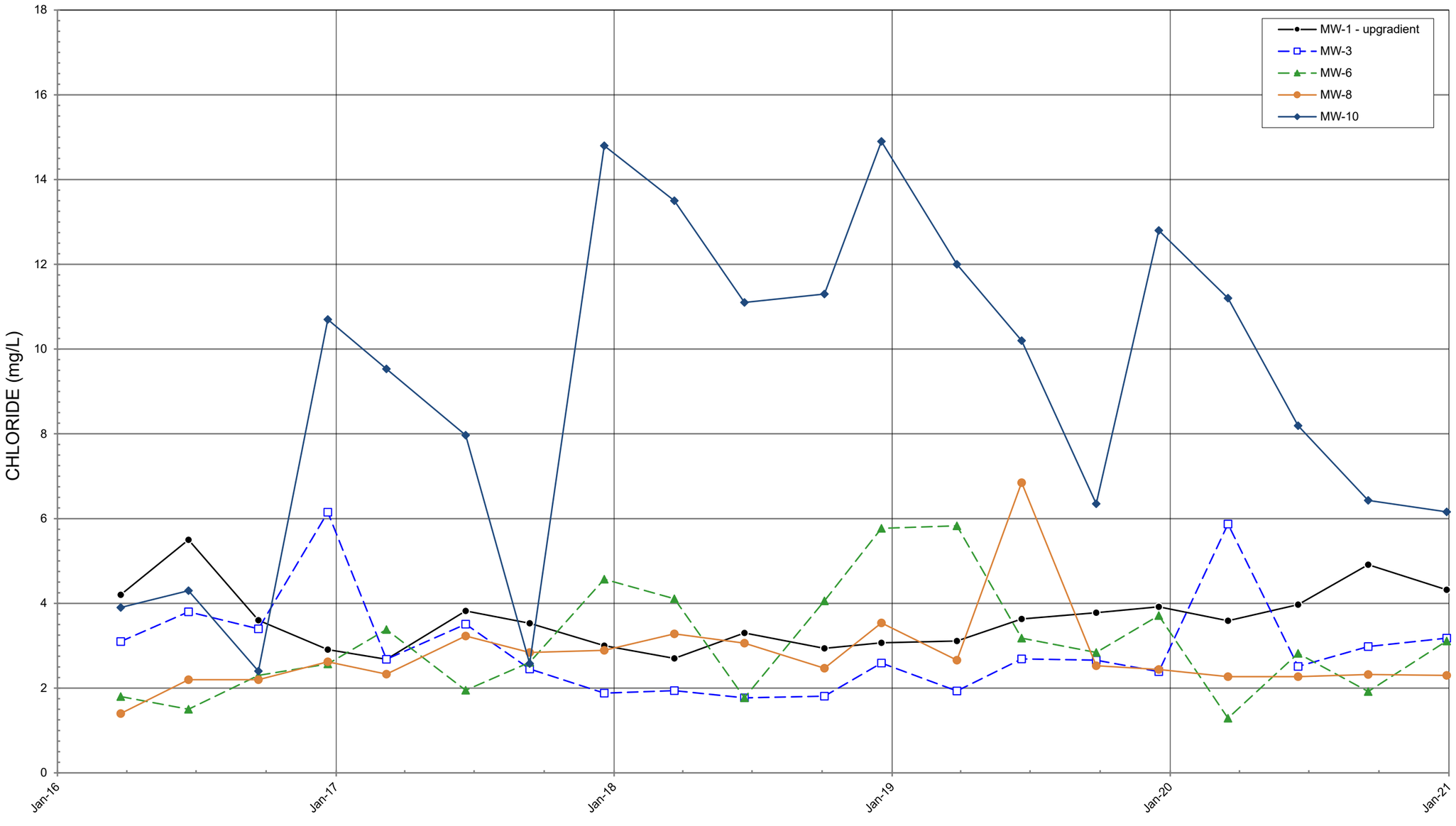


Secondary Drinking Water Standard (DWS) = 250 mg/L (off scale)
Secondary Groundwater Standard (GWS) = 250 mg/L (off scale)

DATE

CHLORIDE

OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)

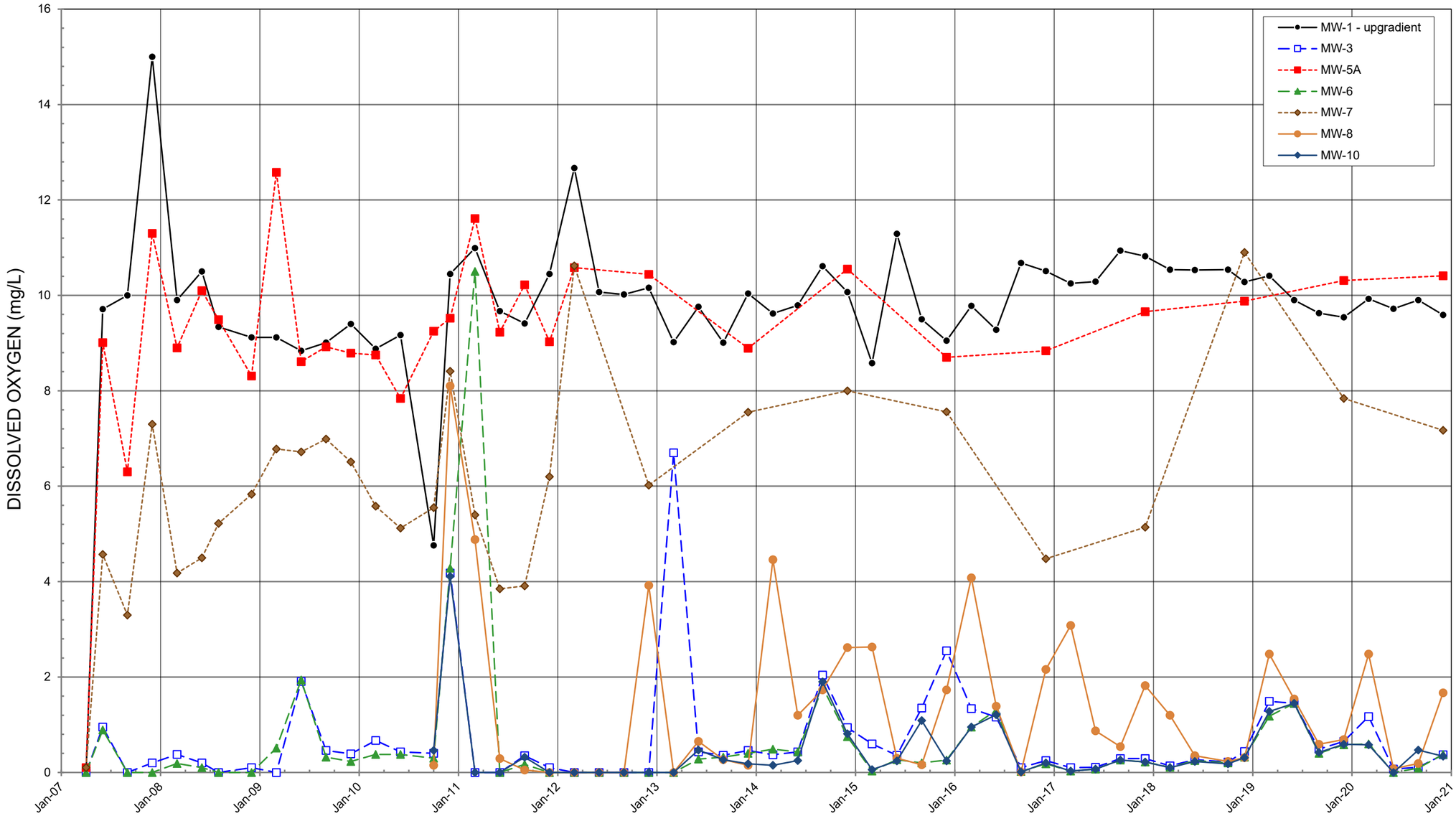


Secondary Drinking Water Standard (DWS) = 250 mg/L (off scale)
Secondary Groundwater Standard (GWS) = 250 mg/L (off scale)

DATE

CHLORIDE
(RECENT)

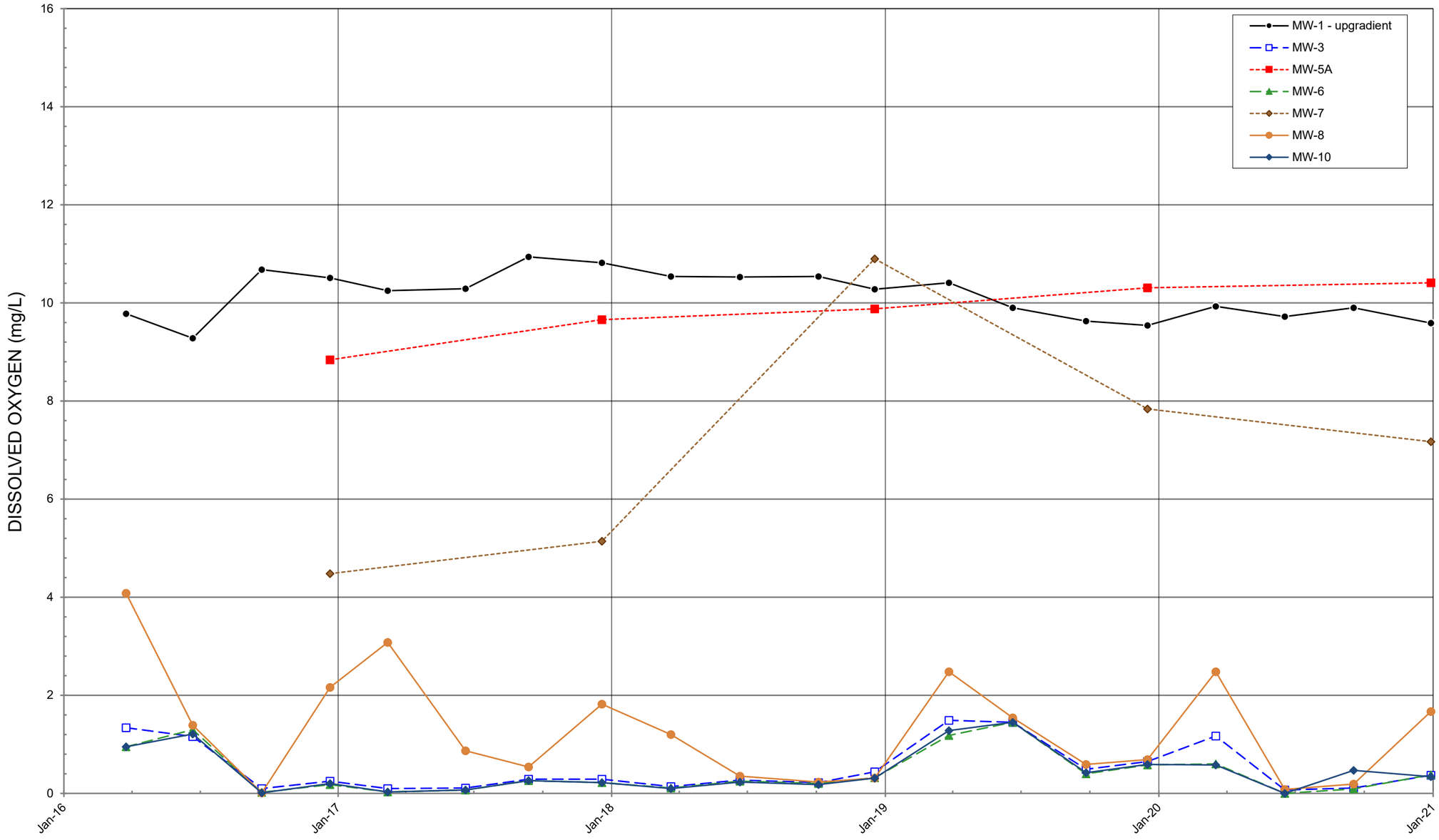
OLALLA LANDFILL
Quarterly Monitoring Data



No Primary or Secondary Drinking Water Standard (DWS) Exists
No Primary or Secondary Groundwater Standard (GWS) Exists

DISSOLVED OXYGEN
(Analysis started in 2007)

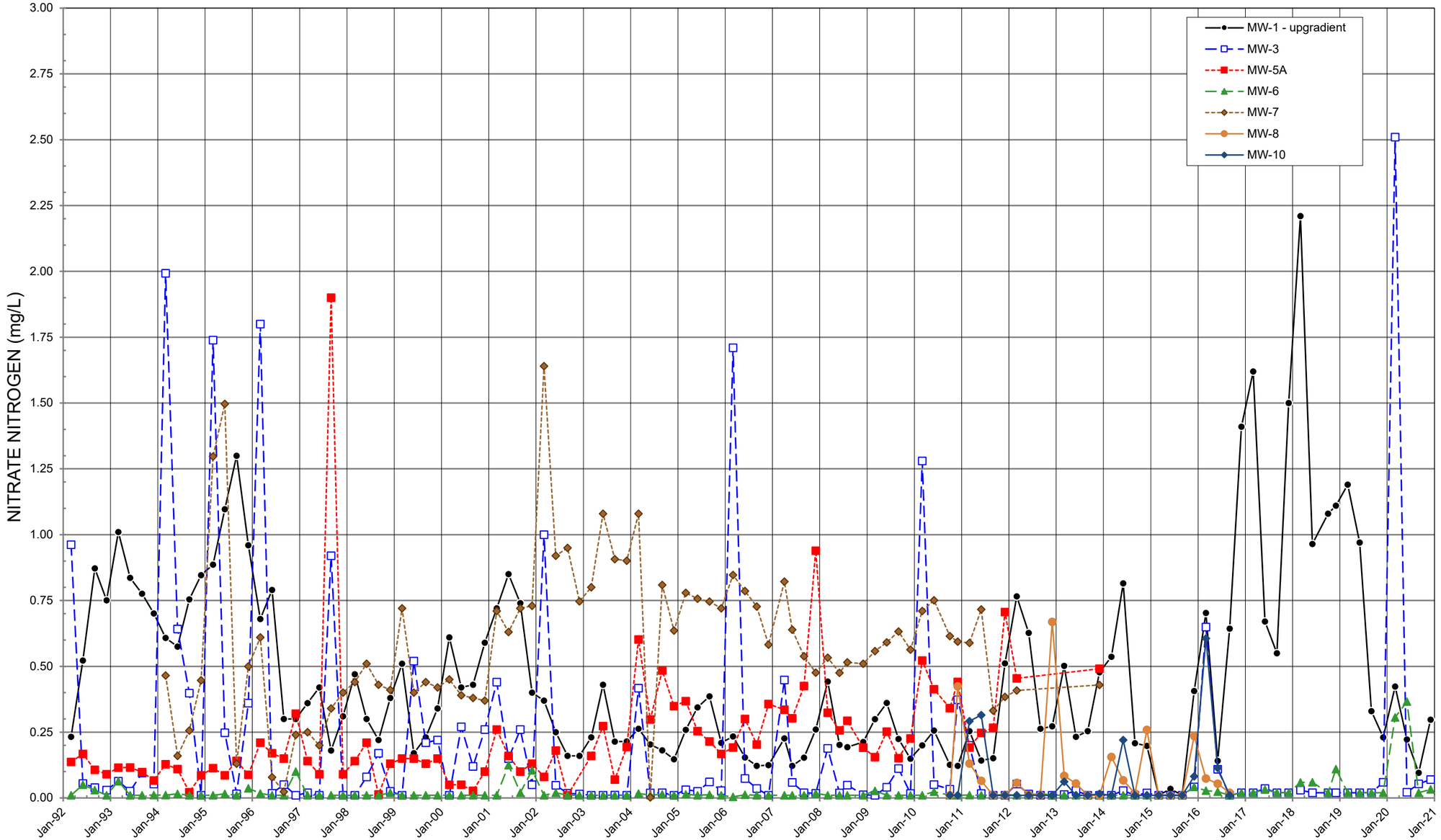
OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)



No Primary or Secondary Drinking Water Standard (DWS) Exists
No Primary or Secondary Groundwater Standard (GWS) Exists

DISSOLVED OXYGEN
(RECENT)

OLALLA LANDFILL
Quarterly Monitoring Data

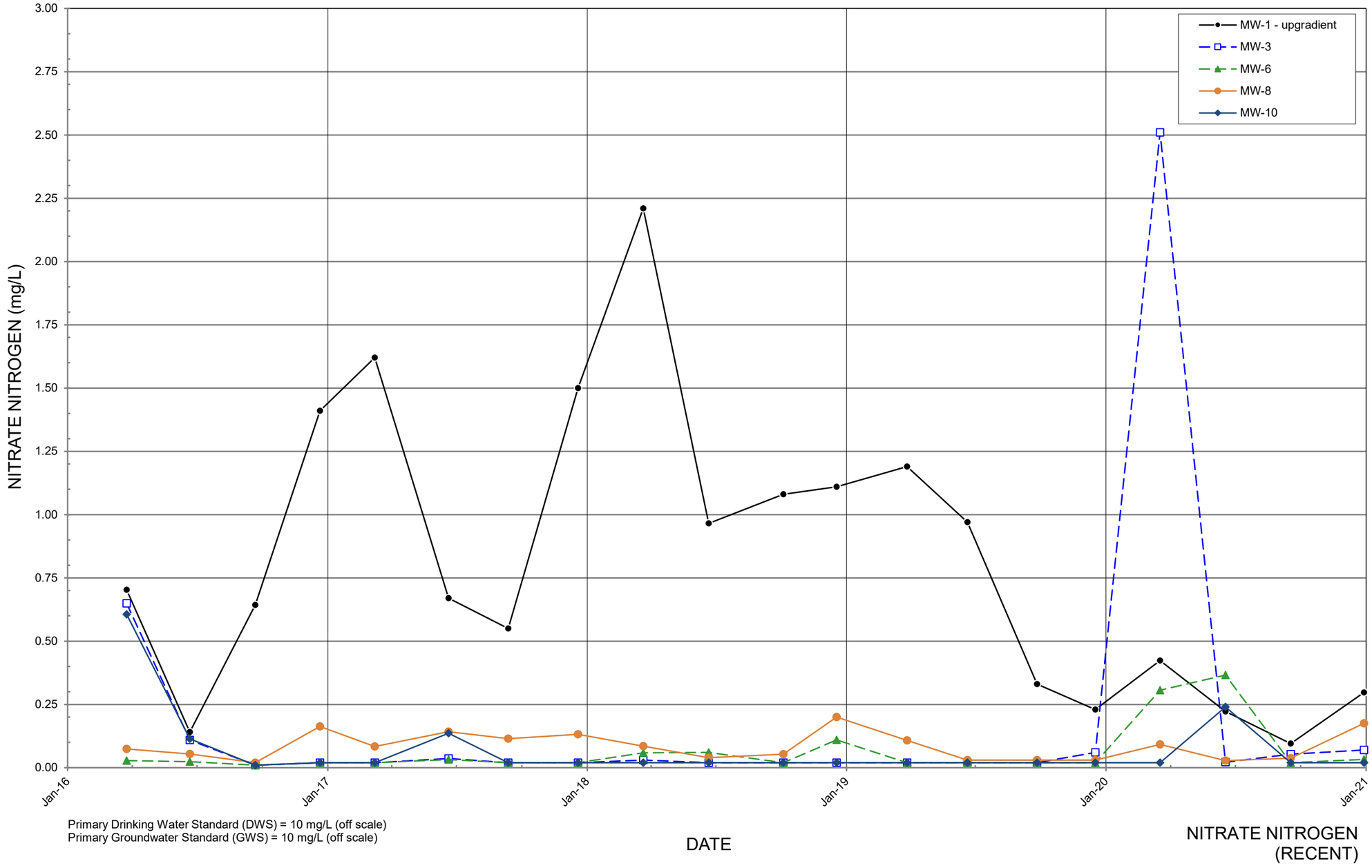


Primary Drinking Water Standard (DWS) = 10 mg/L (off scale)
Primary Groundwater Standard (GWS) = 10 mg/L (off scale)

DATE

NITRATE
NITROGEN

OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)

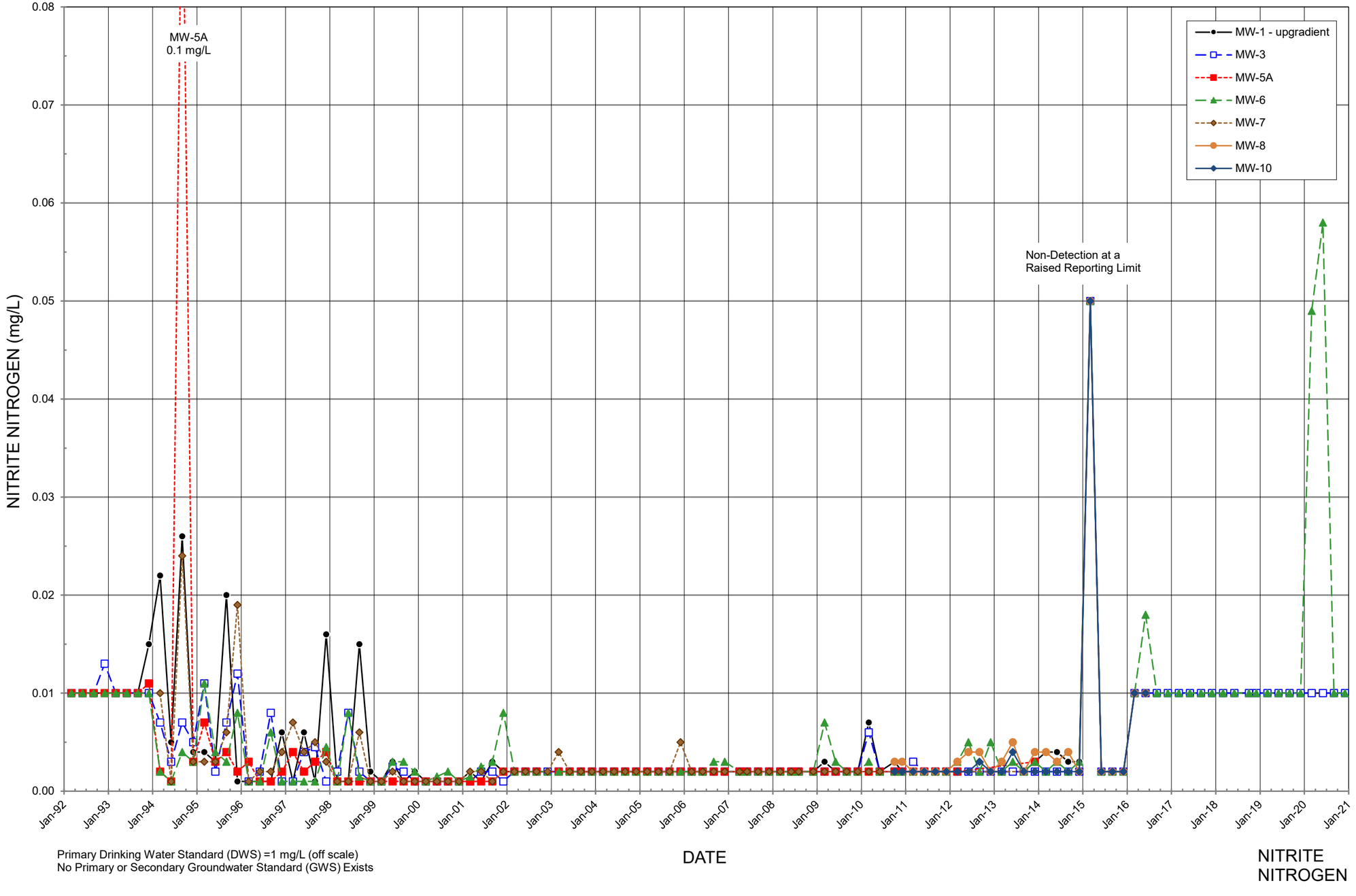


Primary Drinking Water Standard (DWS) = 10 mg/L (off scale)
Primary Groundwater Standard (GWS) = 10 mg/L (off scale)

DATE

NITRATE NITROGEN
(RECENT)

OLALLA LANDFILL
Quarterly Monitoring Data

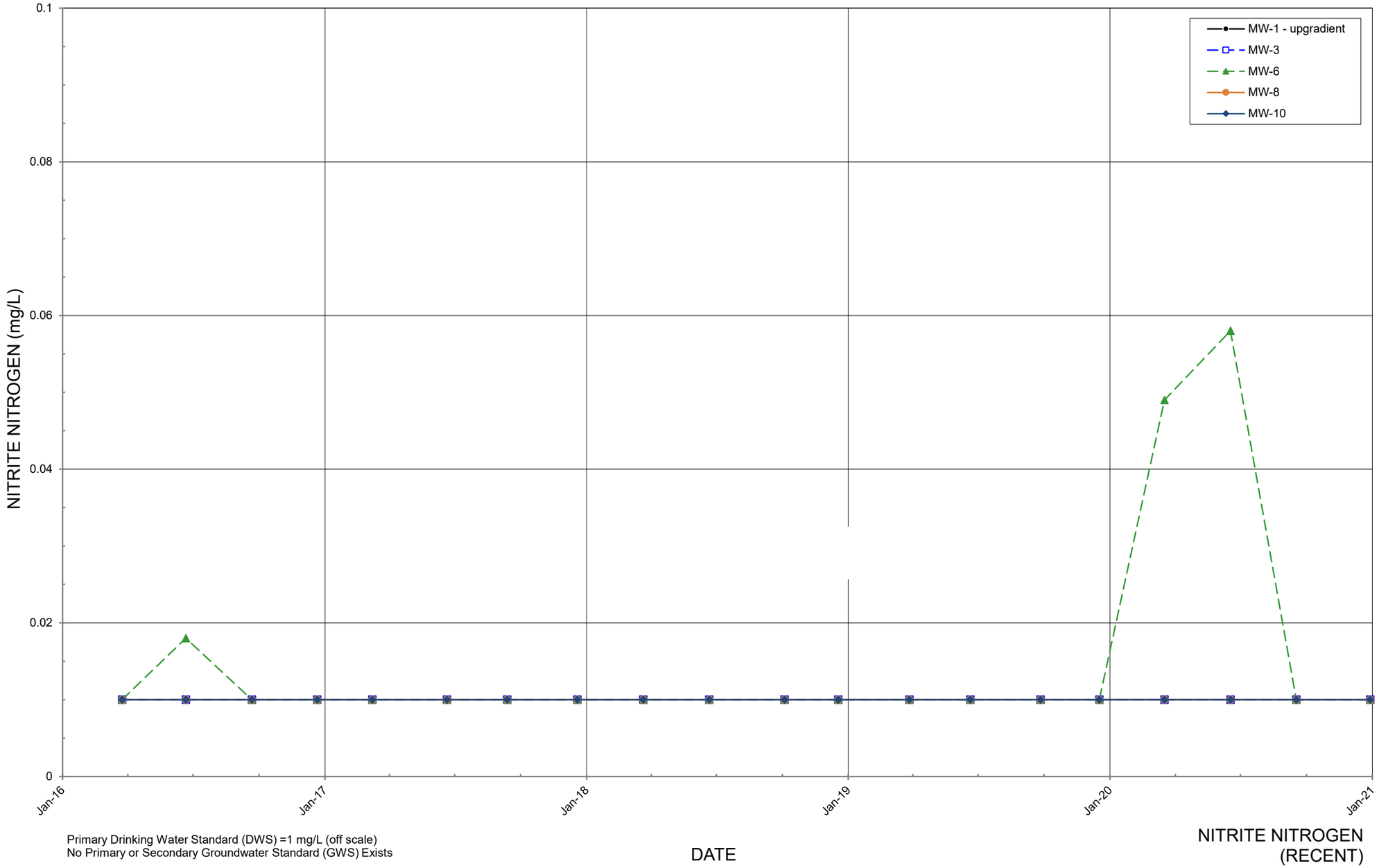


Primary Drinking Water Standard (DWS) =1 mg/L (off scale)
No Primary or Secondary Groundwater Standard (GWS) Exists

DATE

NITRITE
NITROGEN

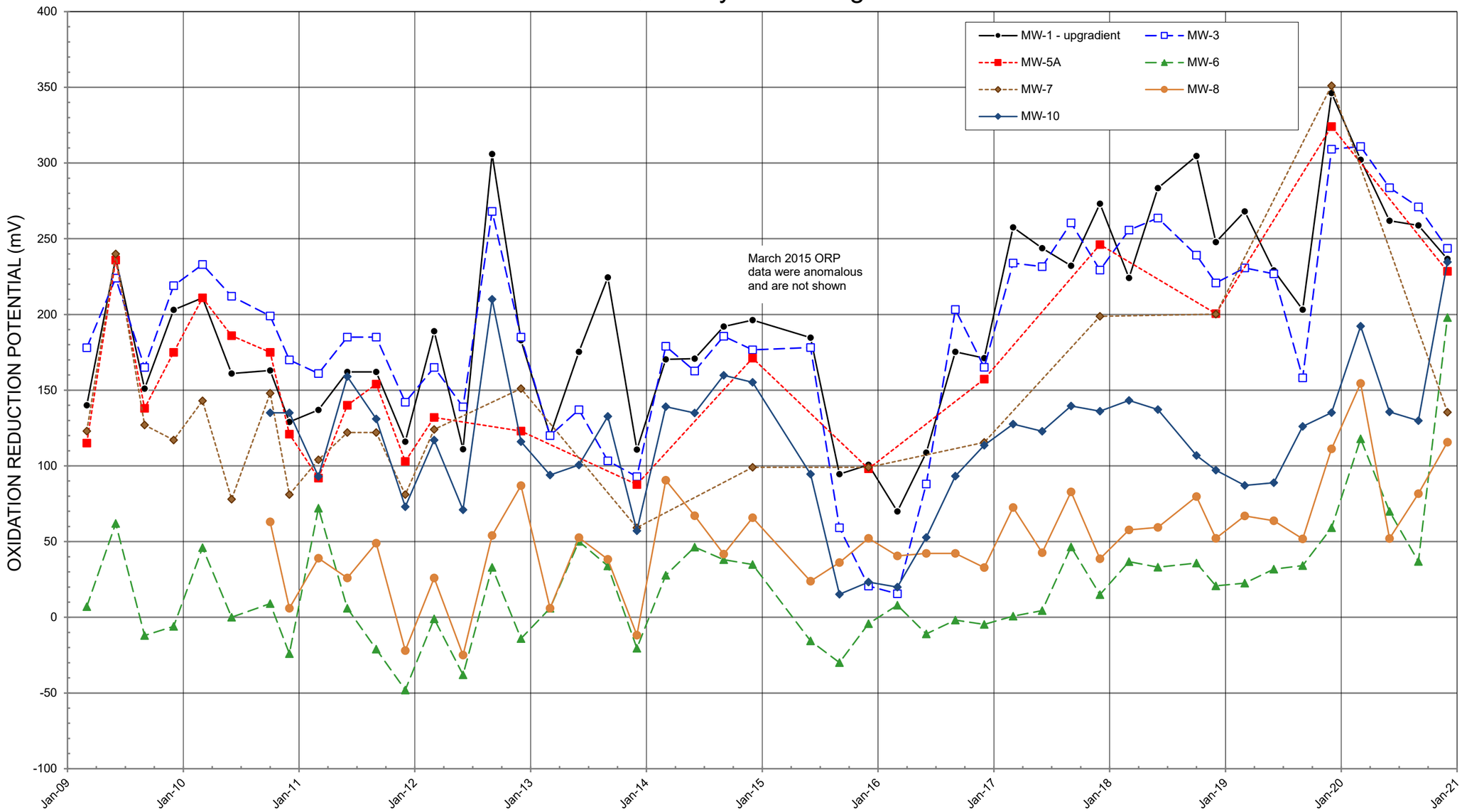
OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)



Primary Drinking Water Standard (DWS) =1 mg/L (off scale)
No Primary or Secondary Groundwater Standard (GWS) Exists

NITRITE NITROGEN
(RECENT)

OLALLA LANDFILL
Quarterly Monitoring Data

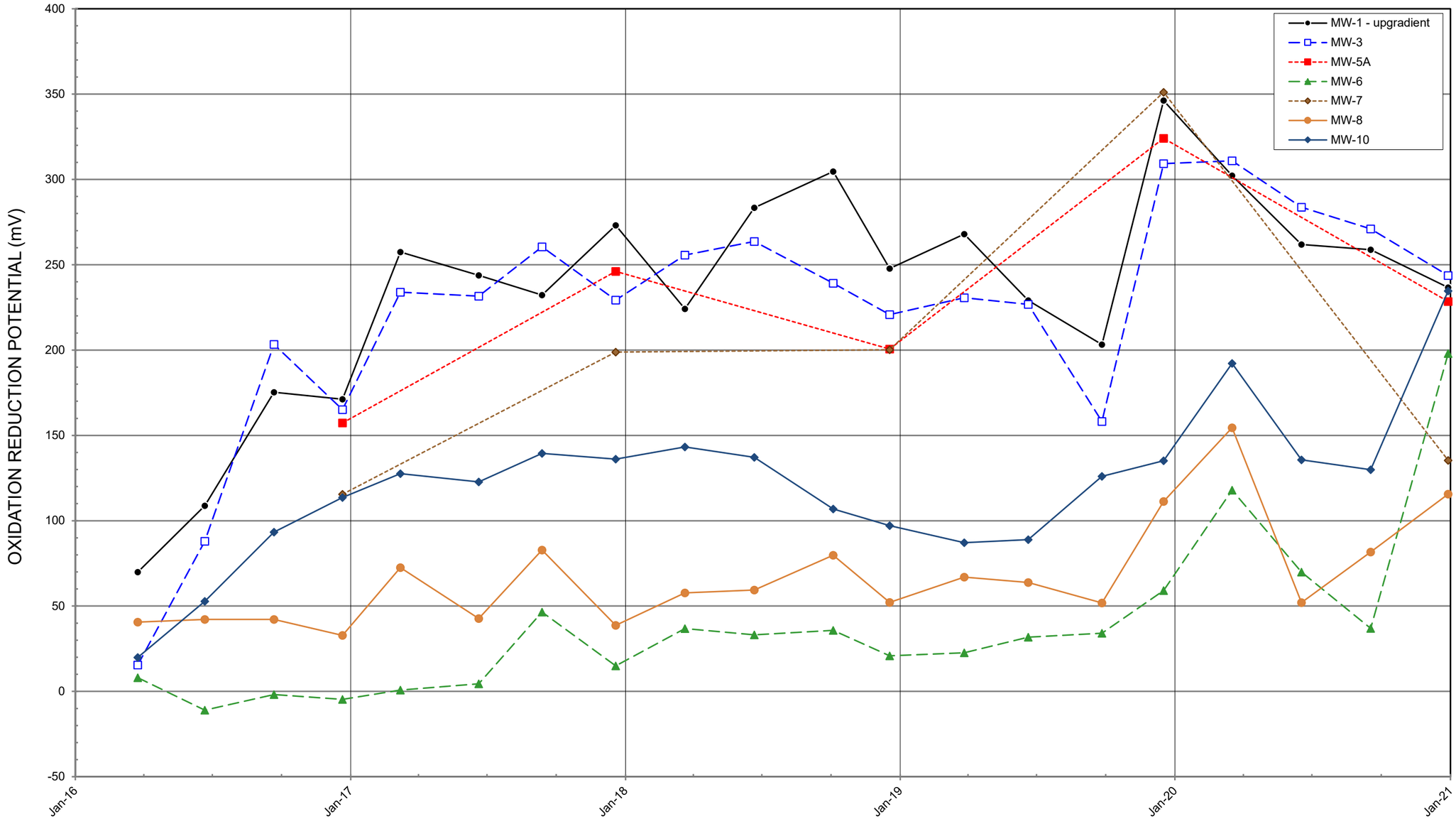


No Primary or Secondary Drinking Water Standard (DWS) Exists
No Primary or Secondary Groundwater Standard (GWS) Exists

DATE

OXIDATION REDUCTION POTENTIAL
(Analysis started in 2009)

OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)

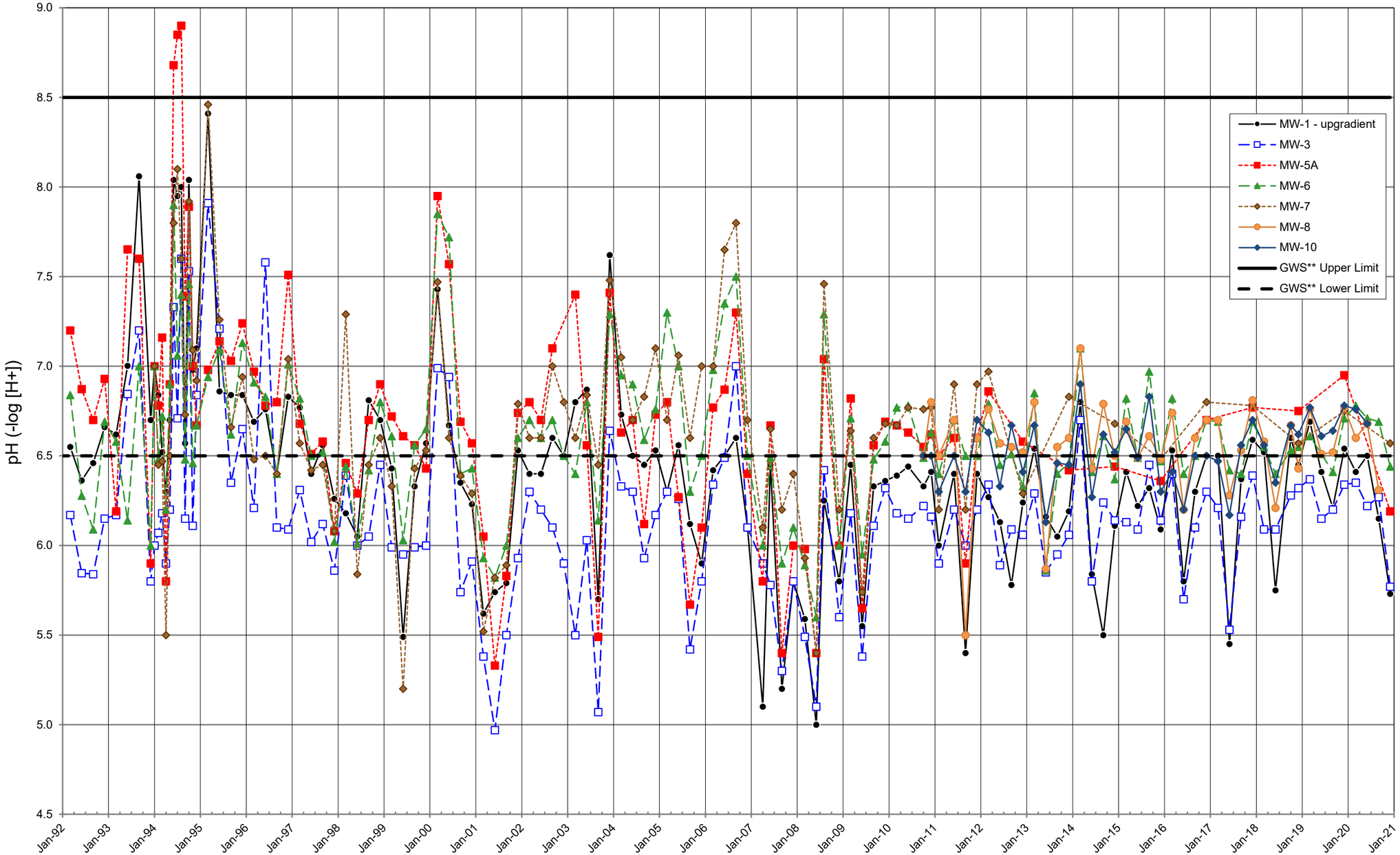


No Primary or Secondary Drinking Water Standard (DWS) Exists
No Primary or Secondary Groundwater Standard (GWS) Exists

DATE

OXIDATION REDUCTION POTENTIAL (RECENT)

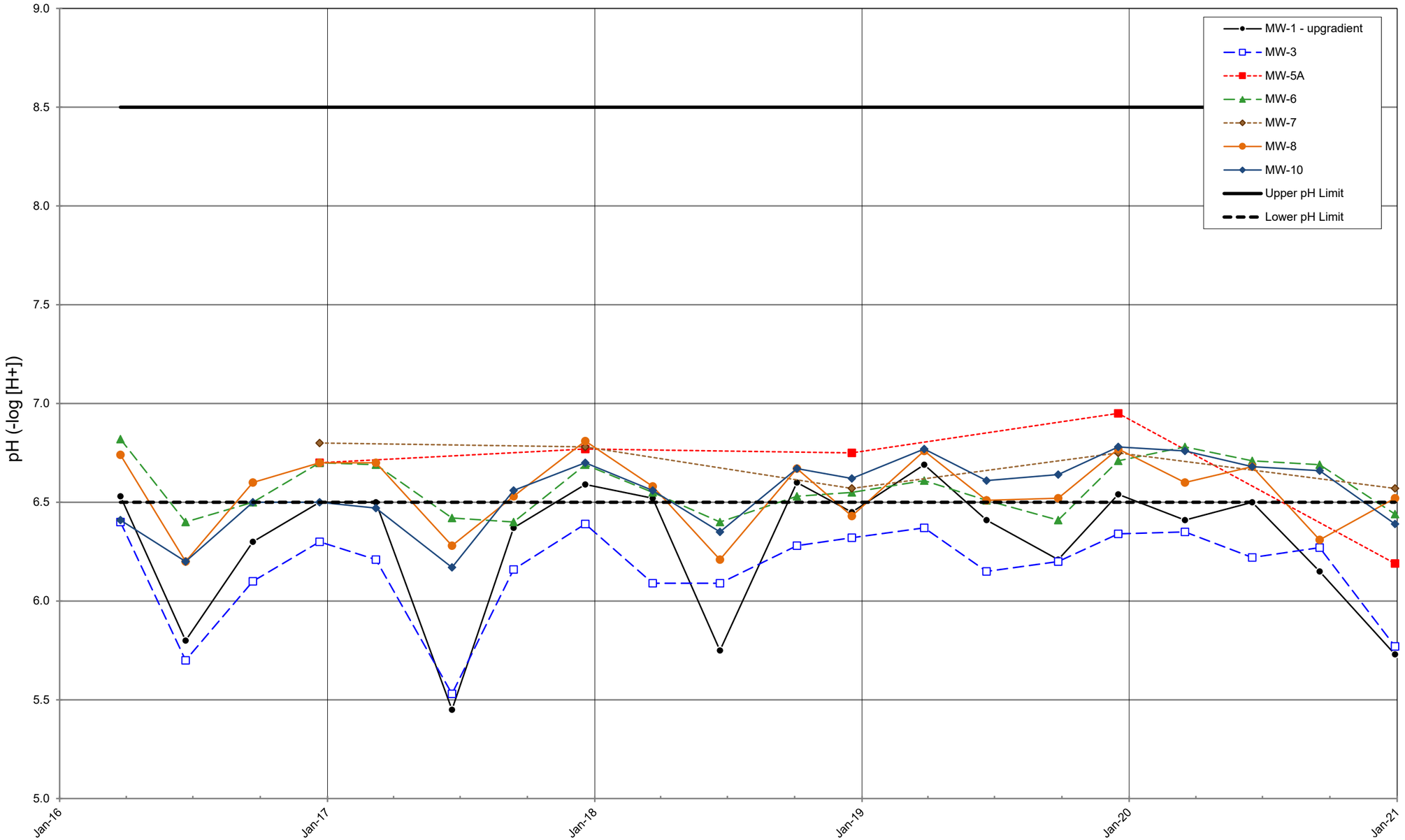
OLALLA LANDFILL
Quarterly Monitoring Data



No Primary or Secondary Drinking Water Standard (DWS) Exists
Secondary Groundwater Standard (GWS) = 6.5 - 8.5 -log H+
Field measured pH is shown.

pH - Field Measured

OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)

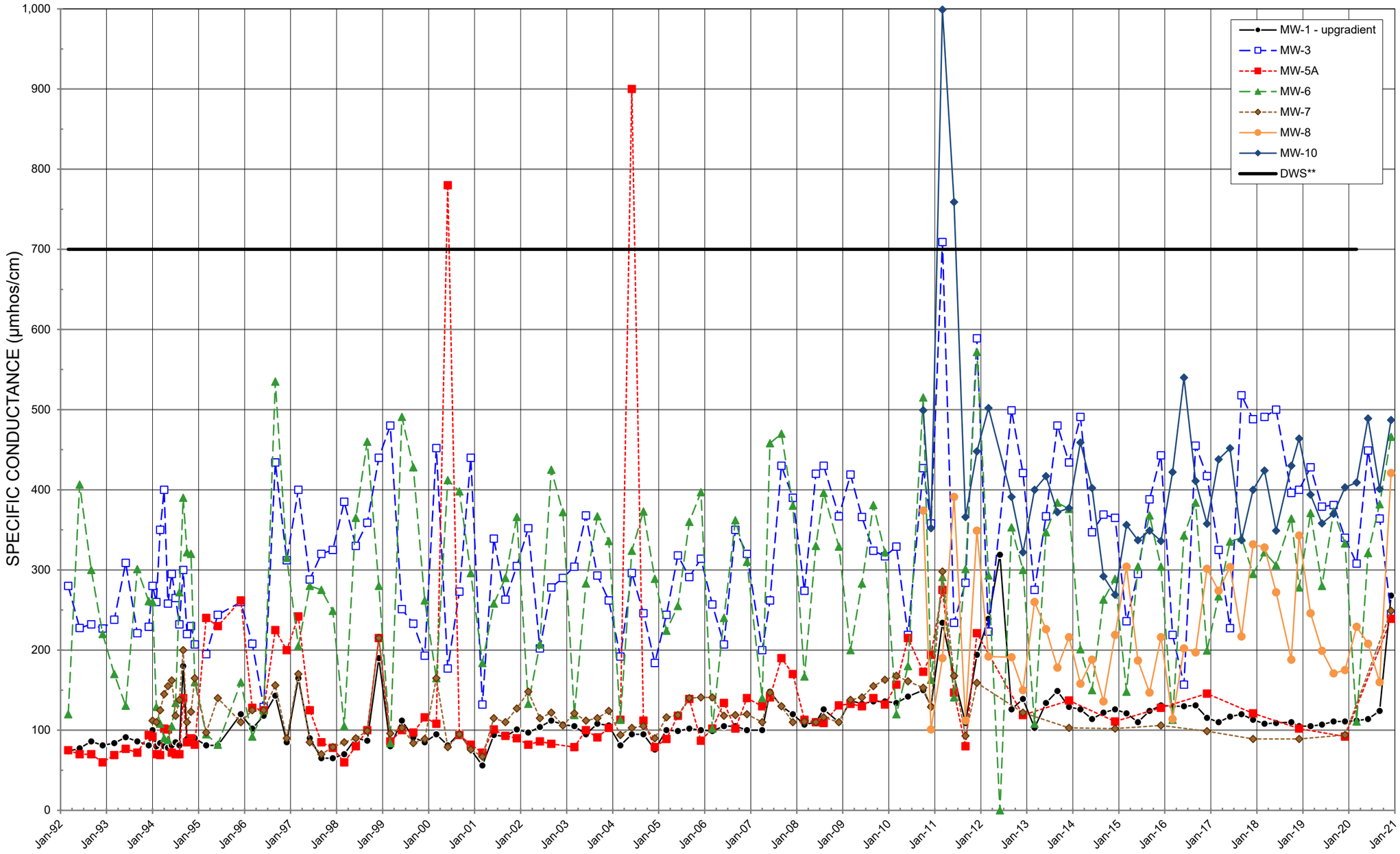


No Primary or Secondary Drinking Water Standard (DWS) Exists
Secondary Groundwater Standard (GWS) = 6.5 - 8.5 -log H+
Field measured pH is shown.

DATE

pH - Field Measured
(RECENT)

OLALLA LANDFILL
Quarterly Monitoring Data

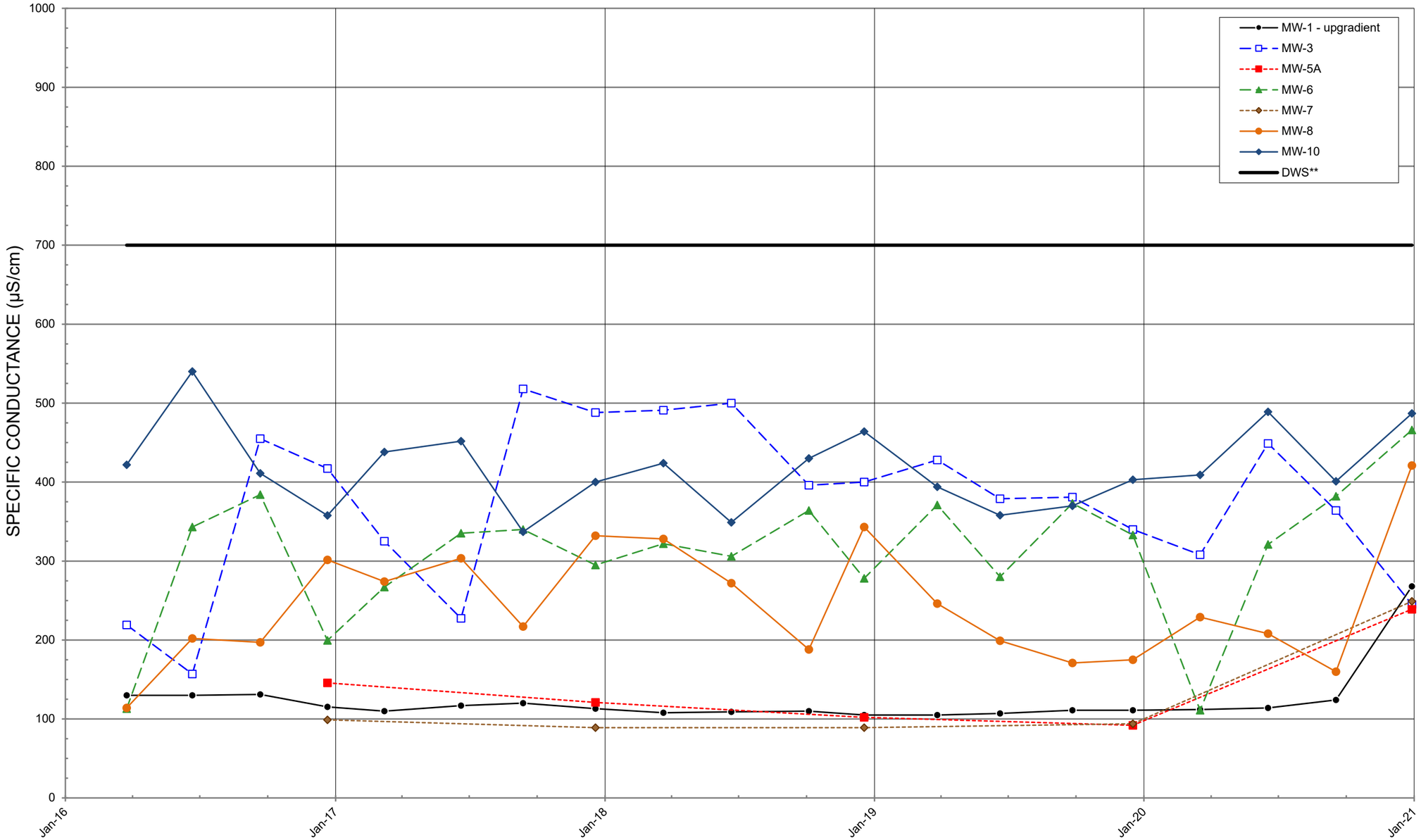


Secondary Drinking Water Standard (DWS) = 700 µmhos/cm
No Primary or Secondary Groundwater Standard (GWS) Exists

DATE

SPECIFIC CONDUCTANCE

OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)

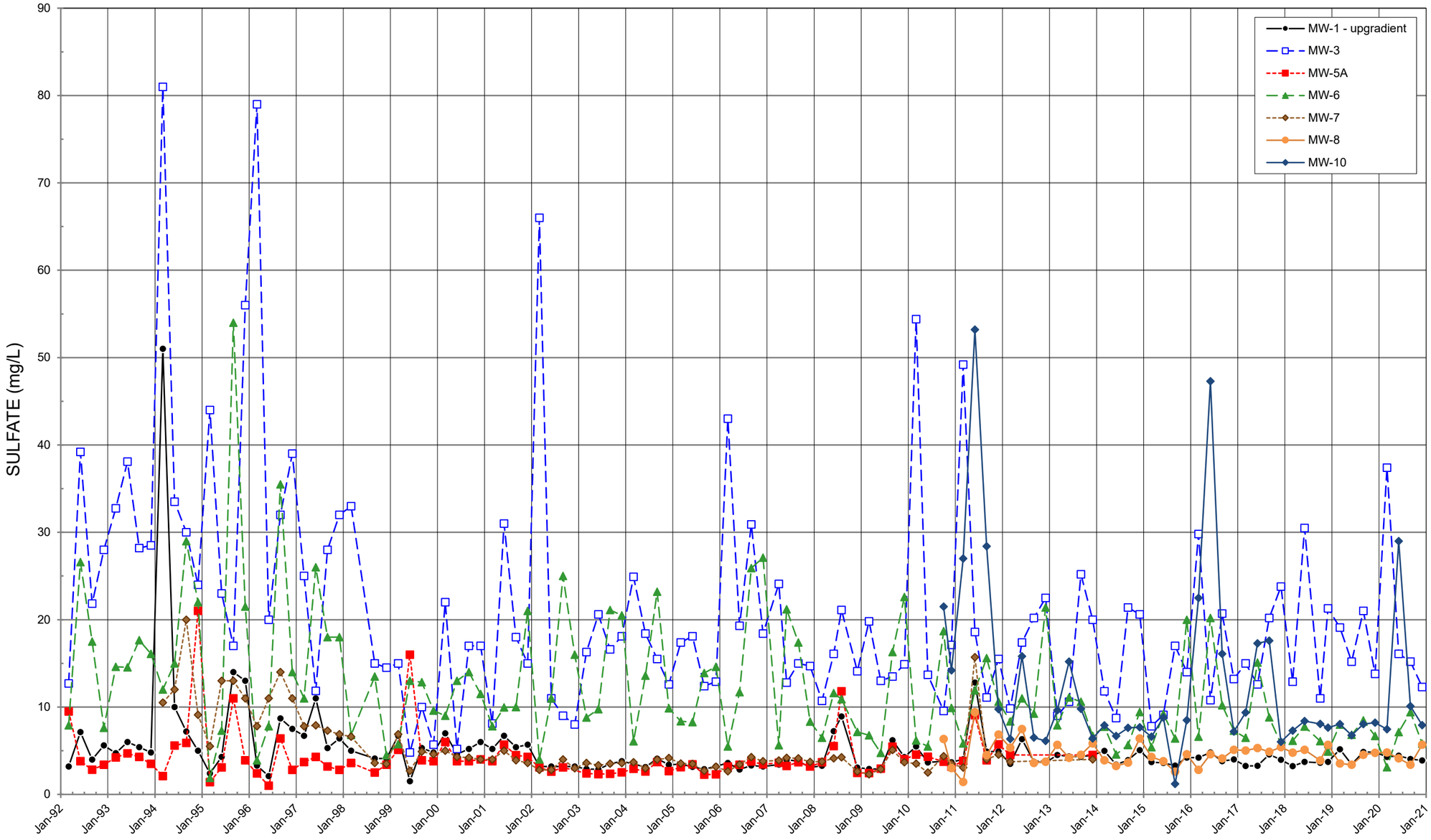


Secondary Drinking Water Standard (DWS) = 700 µS/cm
No Primary or Secondary Groundwater Standard (GWS) Exists

DATE

SPECIFIC CONDUCTANCE (RECENT)

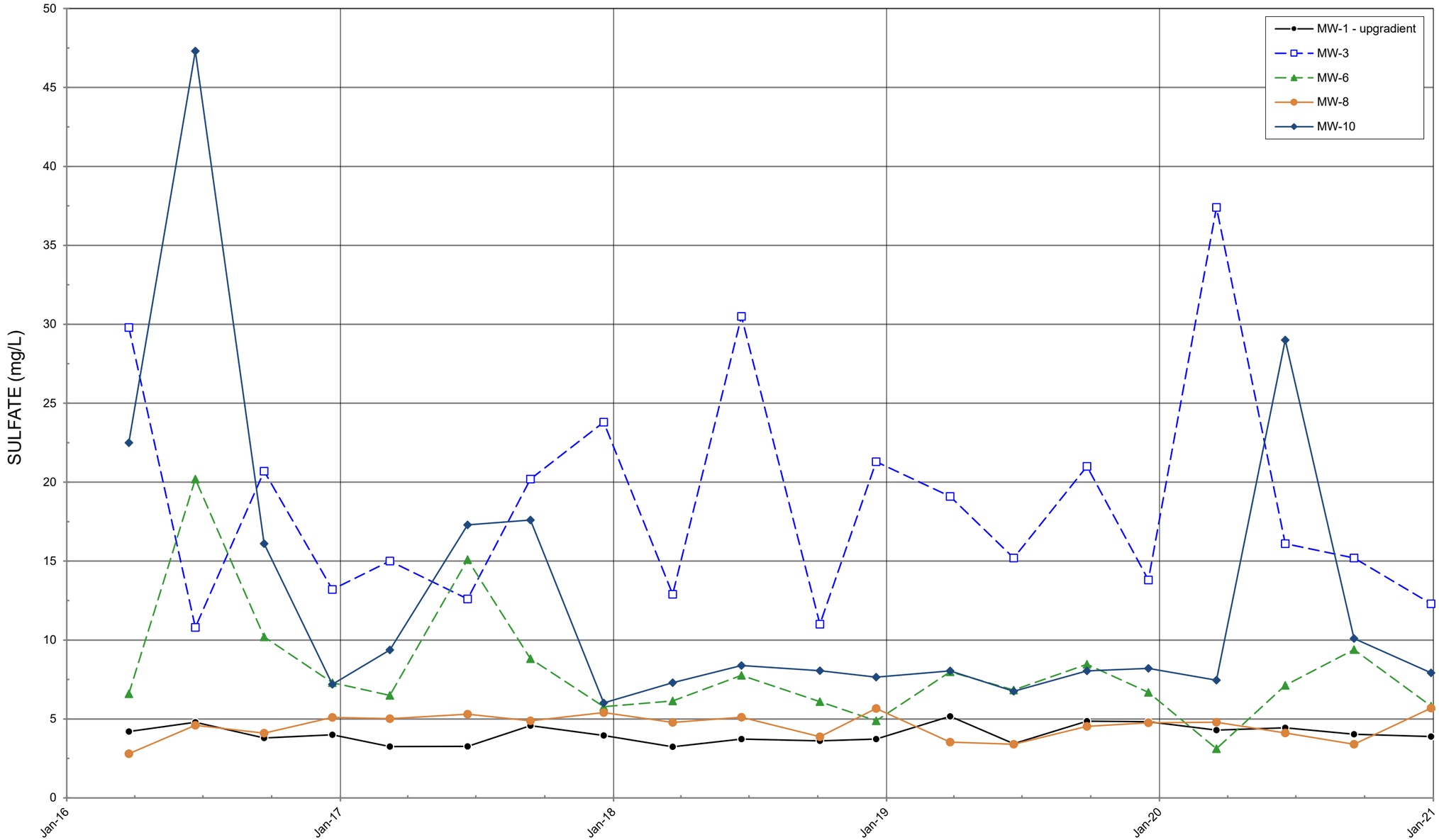
OLALLA LANDFILL
Quarterly Monitoring Data



Secondary Drinking Water Standard (DWS) = 250 mg/L (off scale)
Secondary Groundwater Standard (GWS) = 250 mg/L (off scale)

SULFATE

OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)

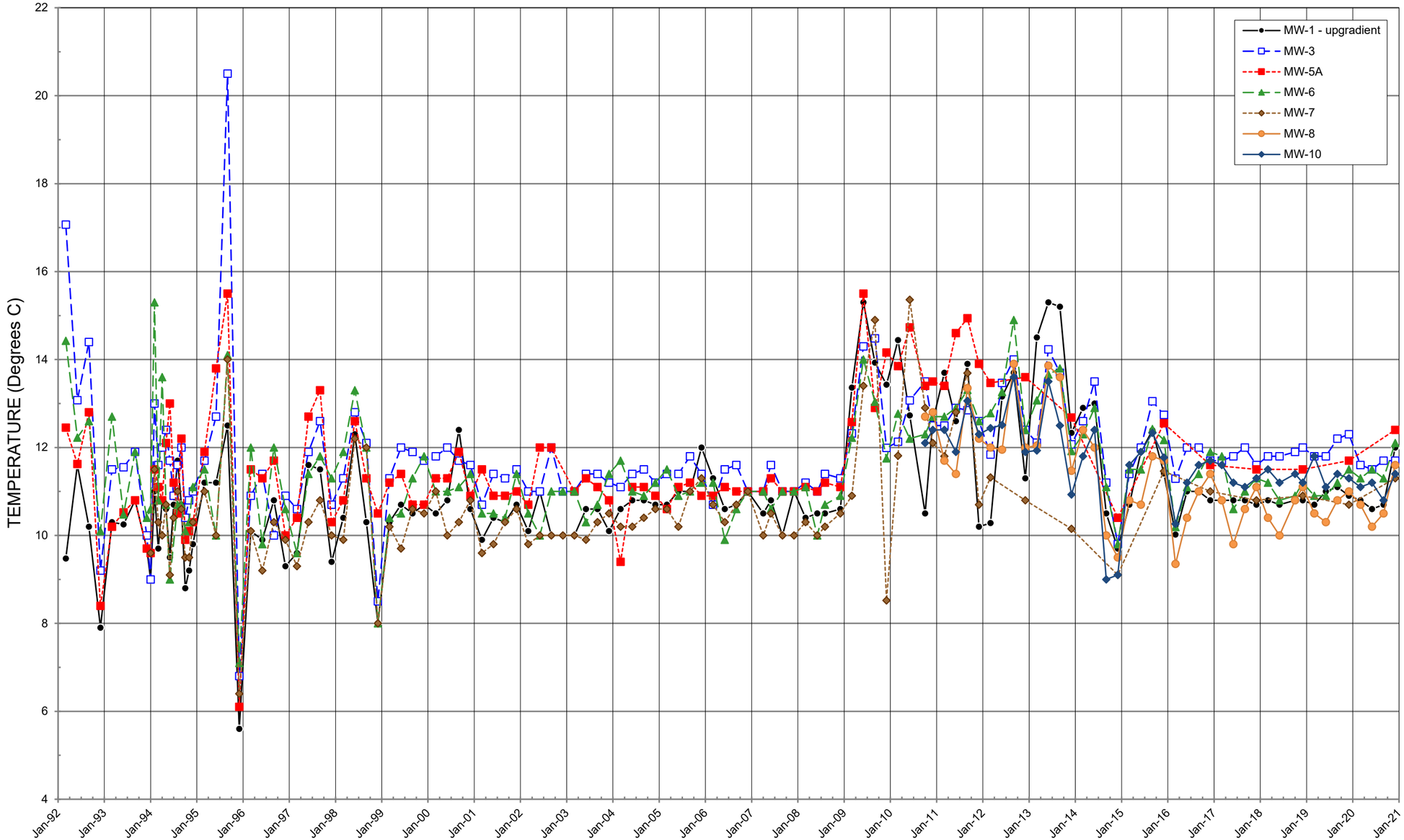


Secondary Drinking Water Standard (DWS) = 250 mg/L (off scale)
Secondary Groundwater Standard (GWS) = 250 mg/L (off scale)

DATE

SULFATE
(RECENT)

OLALLA LANDFILL
Quarterly Monitoring Data

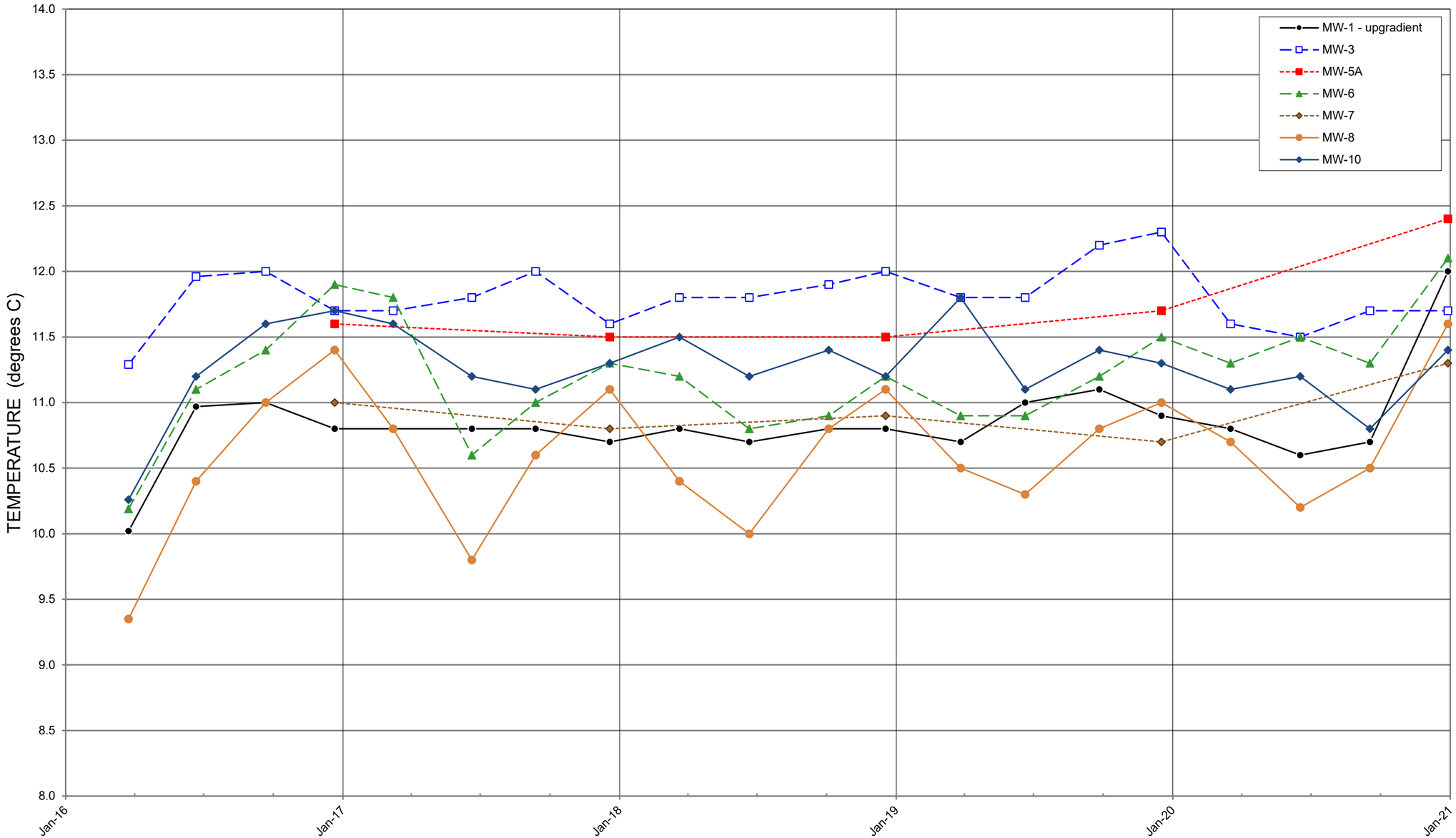


No Primary or Secondary Drinking Water Standard (DWS) Exists
No Primary or Secondary Groundwater Standard (GWS) Exists

DATE

TEMPERATURE

OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)

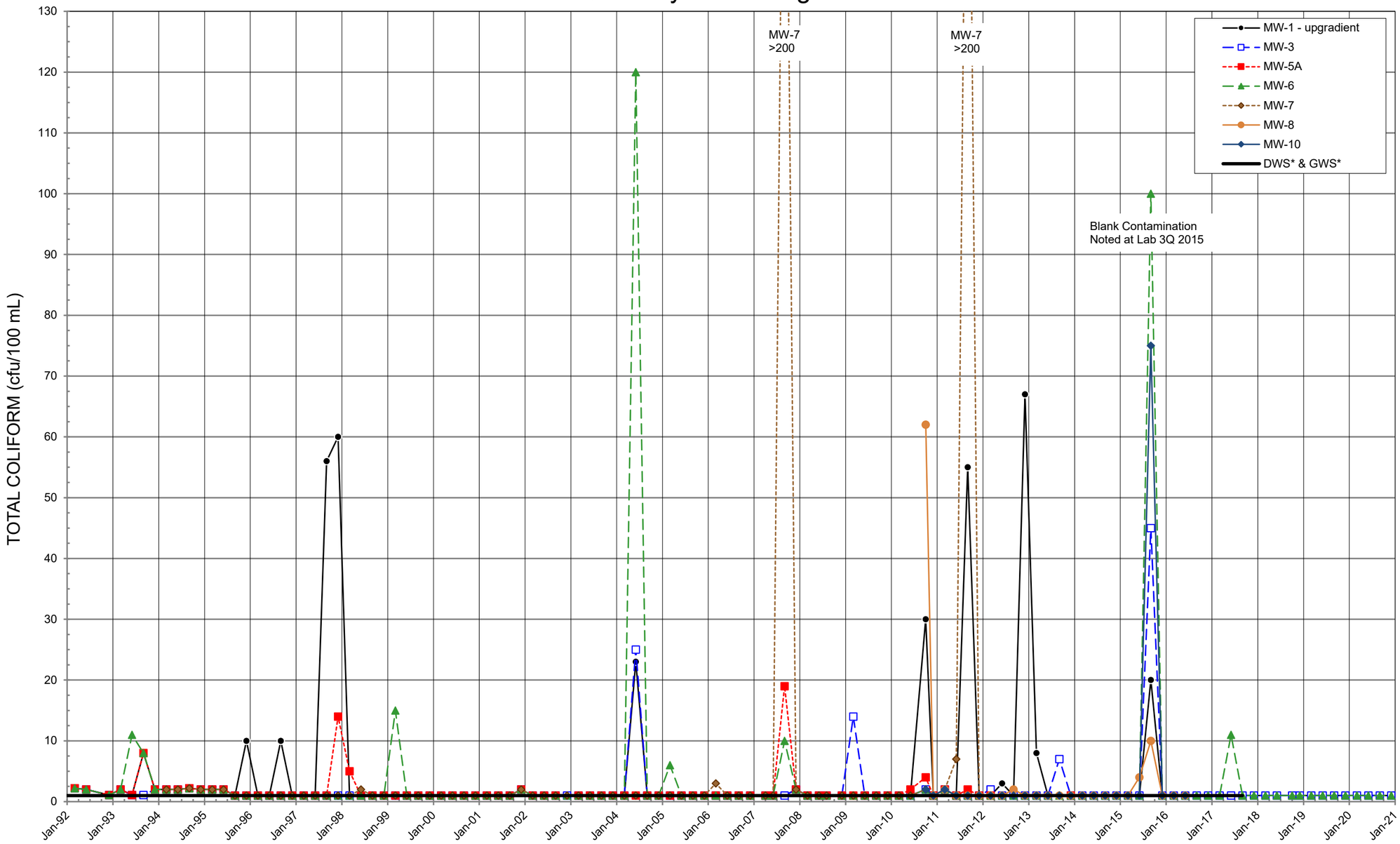


No Primary or Secondary Drinking Water Standard (DWS) Exists
No Primary or Secondary Groundwater Standard (GWS) Exists

DATE

TEMPERATURE (RECENT)

OLALLA LANDFILL
Quarterly Monitoring Data

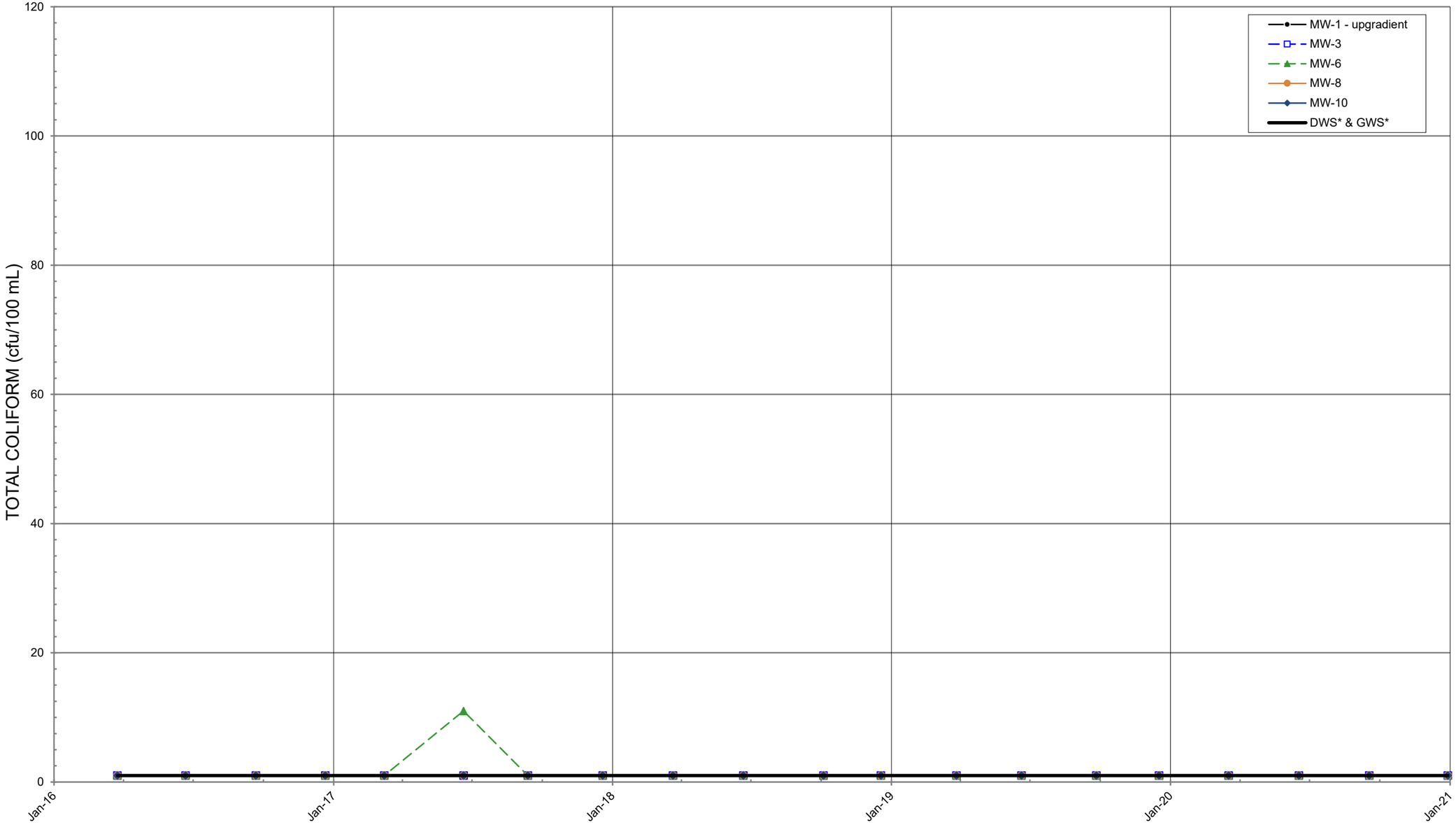


Primary Drinking Water Standard (DWS) = 1 cfu/100 mL
Primary Groundwater Standard (GWS) = 1 cfu/100 mL

DATE

TOTAL COLIFORM

OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)

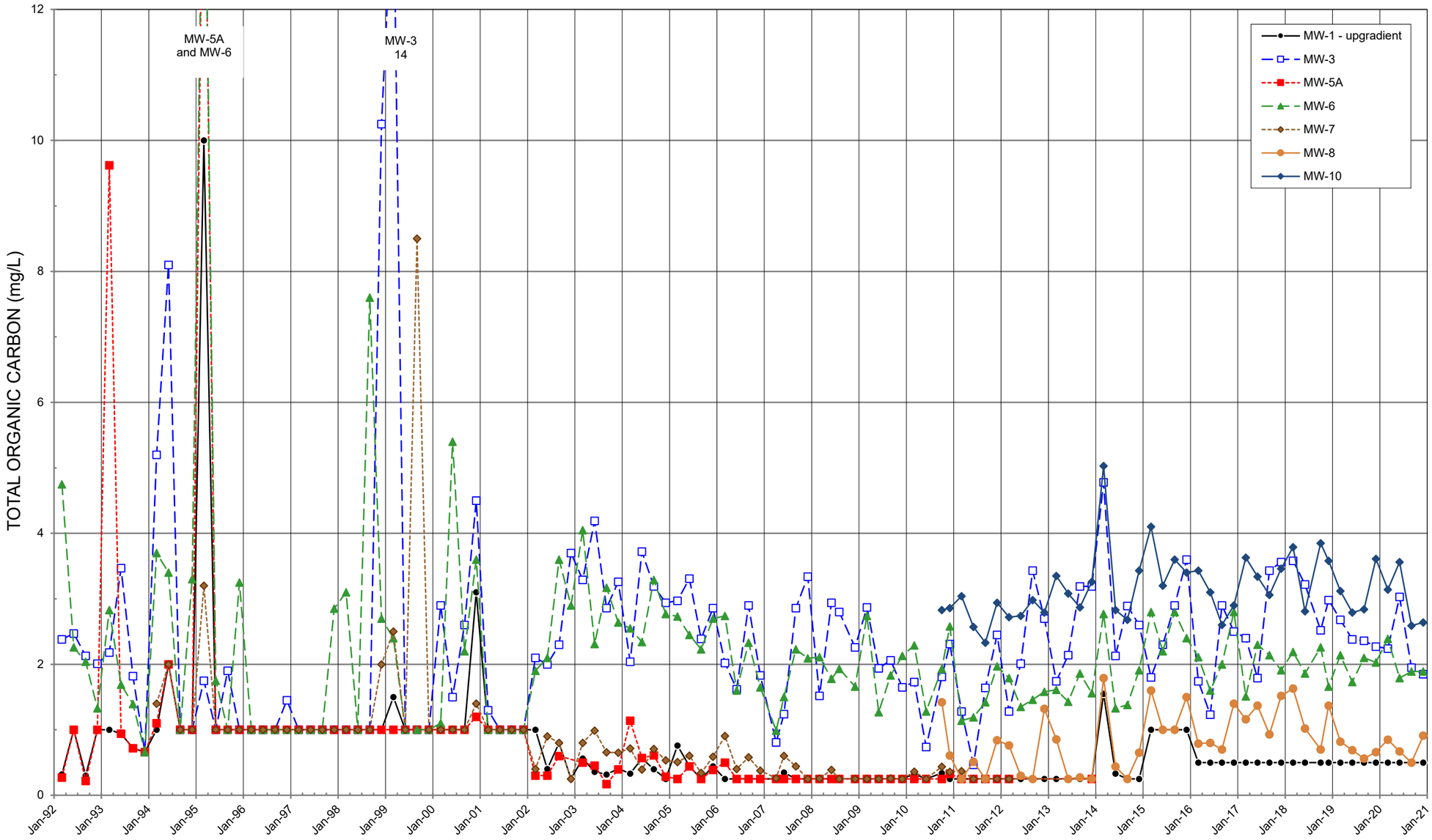


Primary Drinking Water Standard (DWS) = 1 cfu/100 mL
Primary Groundwater Standard (GWS) = 1 cfu/100 mL

DATE

TOTAL COLIFORM
(RECENT)

OLALLA LANDFILL
Quarterly Monitoring Data

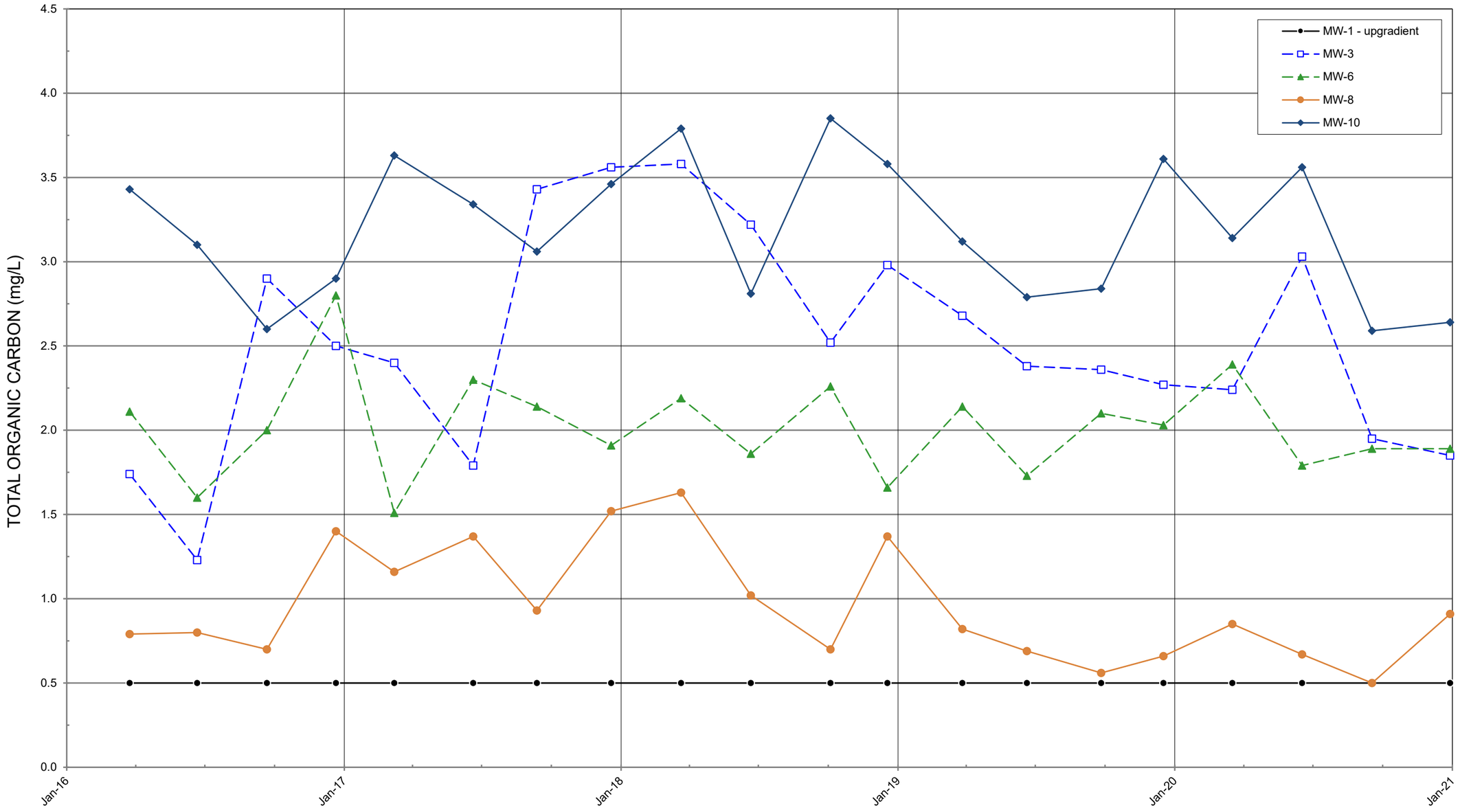


Data split (beginning 12/01) is due to a change in the Method Detection Limit
No Primary or Secondary Drinking Water Standard (DWS) Exists
No Primary or Secondary Groundwater Standard (GWS) Exists

DATE

TOTAL ORGANIC CARBON

OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)

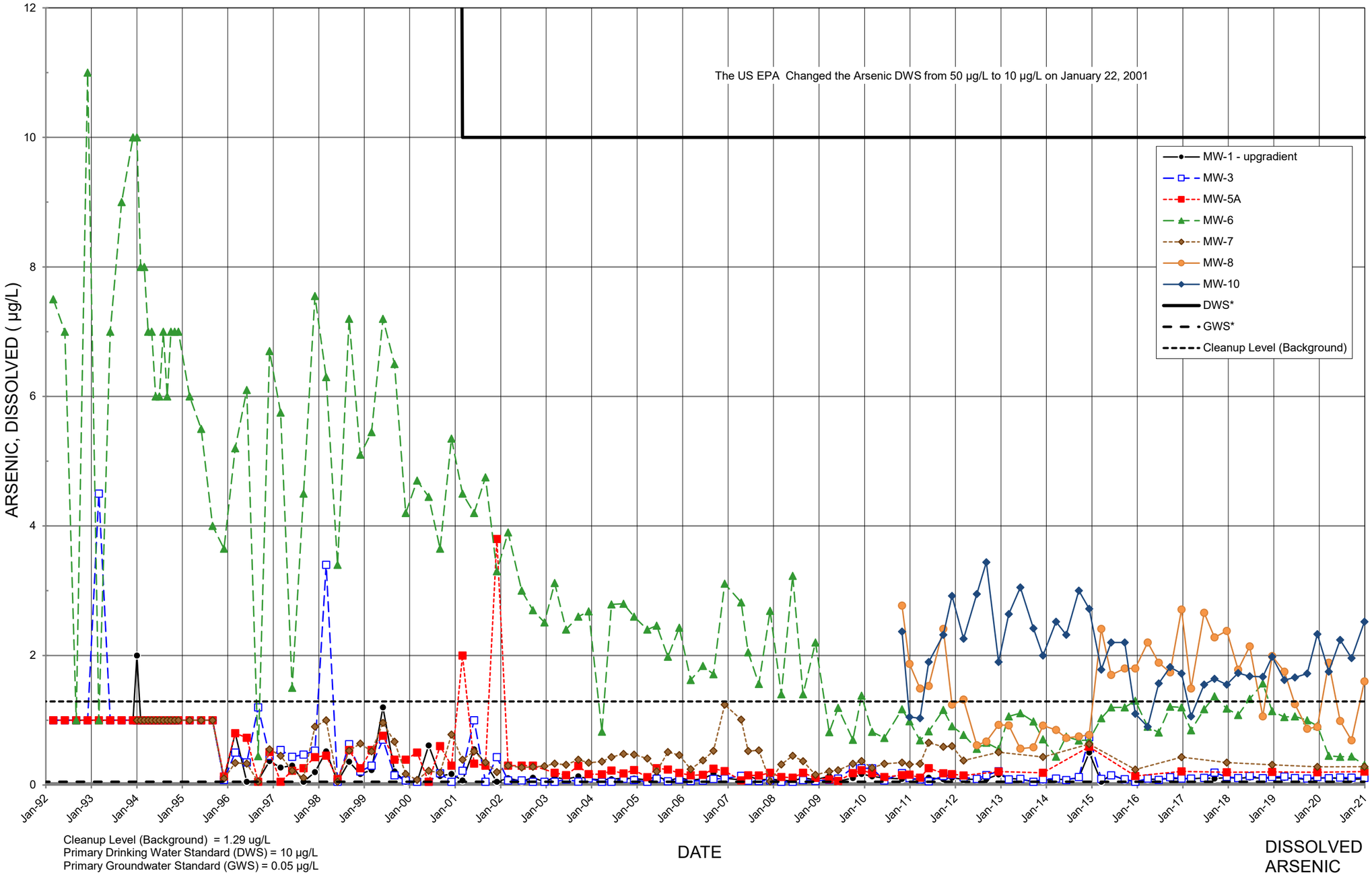


No Primary or Secondary Drinking Water Standard (DWS) Exists
No Primary or Secondary Groundwater Standard (GWS) Exists

DATE

TOTAL ORGANIC CARBON (RECENT)

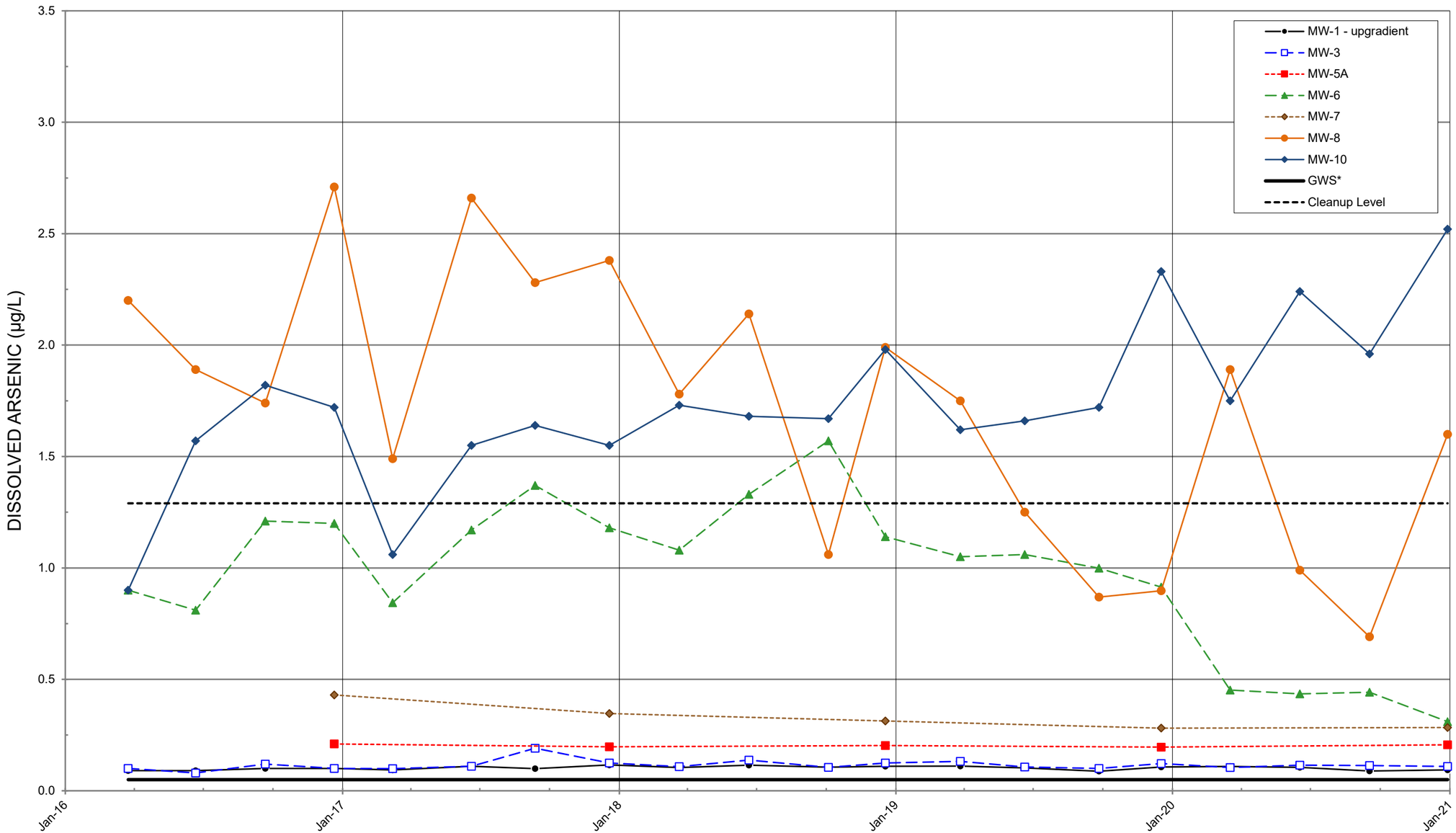
OLALLA LANDFILL
Quarterly Monitoring Data



Cleanup Level (Background) = 1.29 ug/L
Primary Drinking Water Standard (DWS) = 10 µg/L
Primary Groundwater Standard (GWS) = 0.05 µg/L

DISSOLVED ARSENIC

OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)

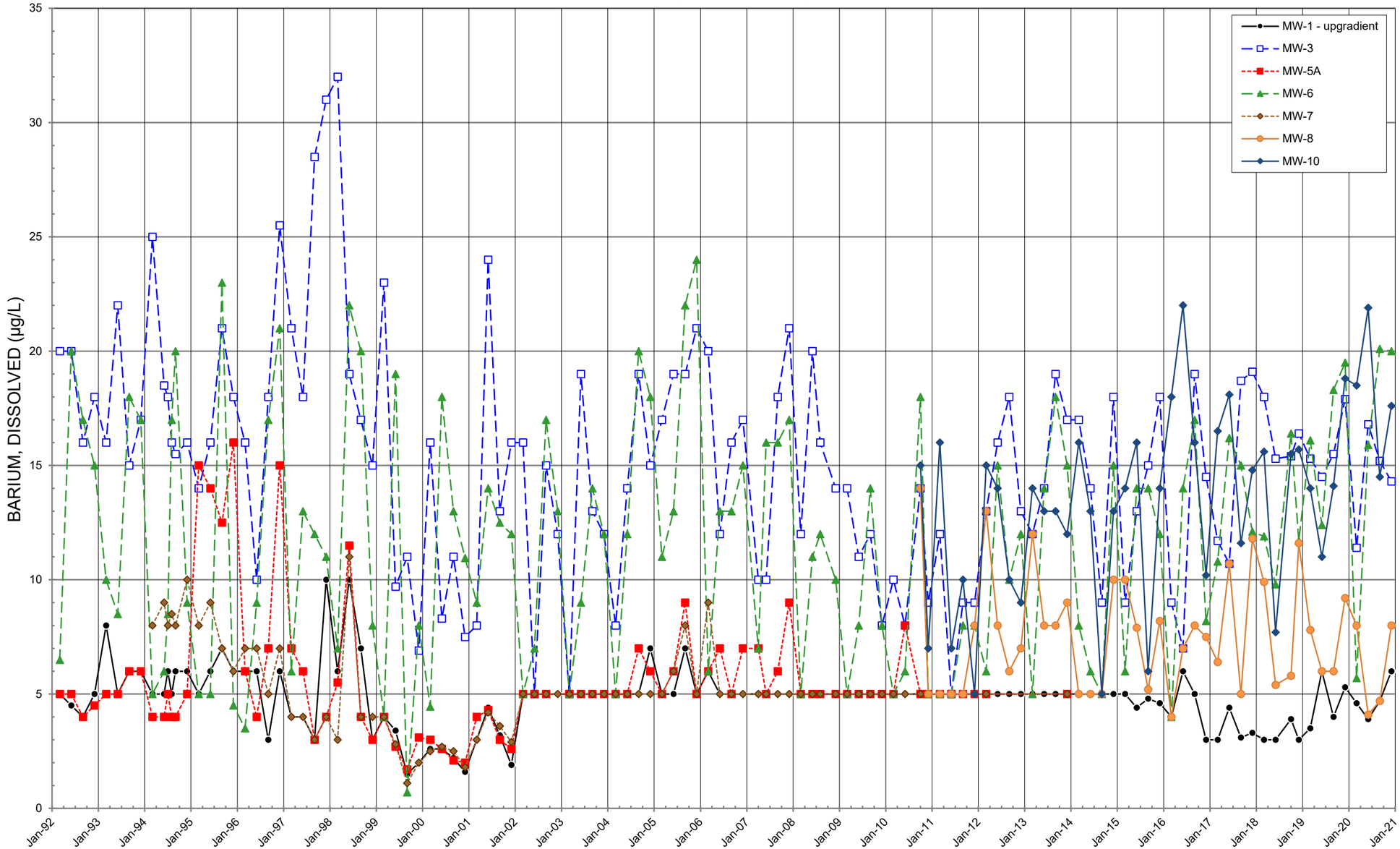


Site Specific Cleanup Level (background) = 1.29 µg/L
Primary Drinking Water Standard (DWS) = 10 µg/L (off scale)
Primary Groundwater Standard (GWS) = 0.05 µg/L

DATE

DISSOLVED ARSENIC
(RECENT)

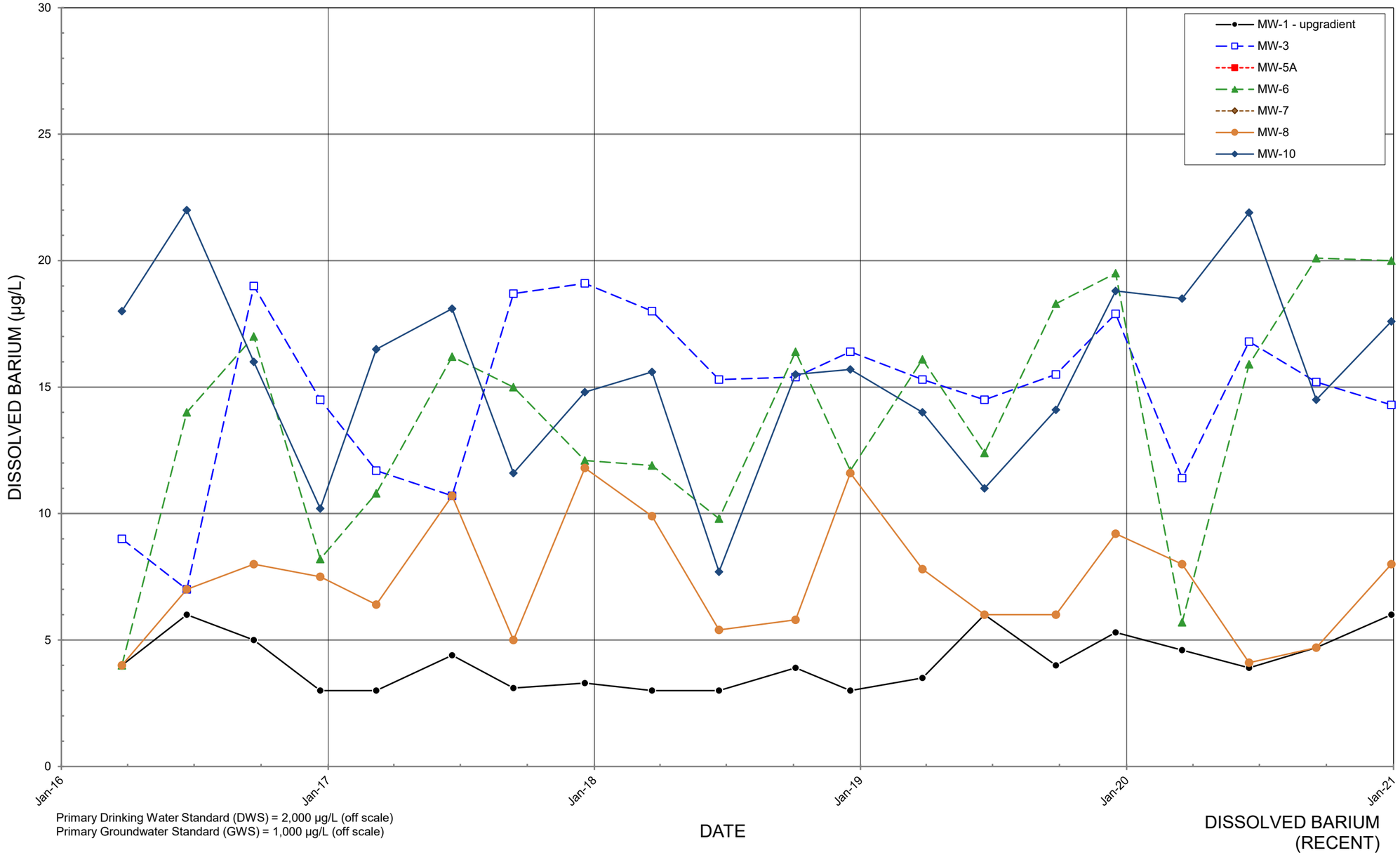
OLALLA LANDFILL
Quarterly Monitoring Data



Primary Drinking Water Standard (DWS) = 2000 µg/L (off scale)
Primary Groundwater Standard (GWS) = 1000 µg/L (off scale)

DISSOLVED BARIUM

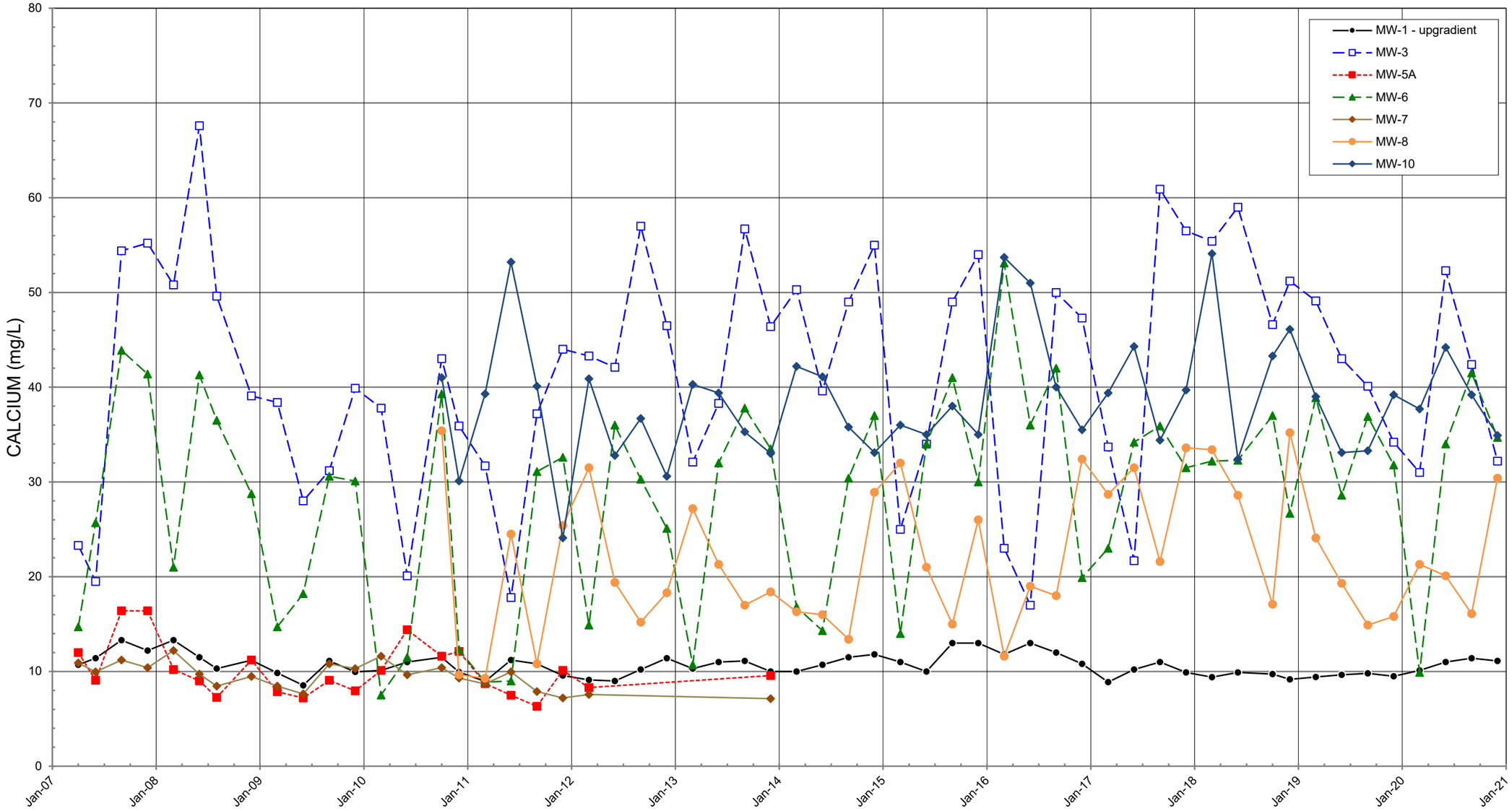
OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)



Primary Drinking Water Standard (DWS) = 2,000 µg/L (off scale)
Primary Groundwater Standard (GWS) = 1,000 µg/L (off scale)

DISSOLVED BARIUM
(RECENT)

OLALLA LANDFILL
Quarterly Monitoring Data

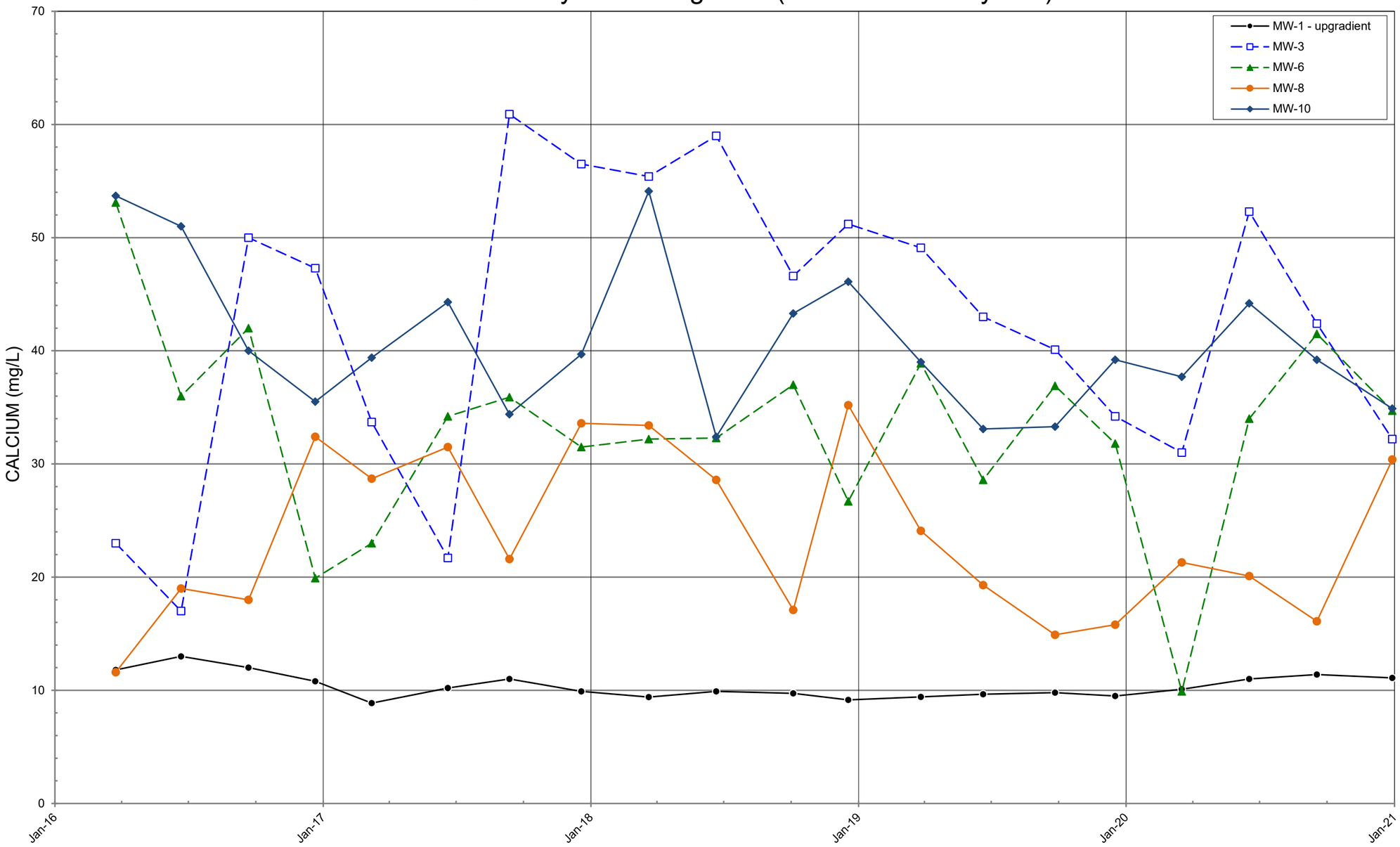


No Primary or Secondary Drinking Water Standard (DWS) Exists
No Primary or Secondary Groundwater Standard (GWS) Exists

DATE

CALCIUM
(Analysis started in 2007)

OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)

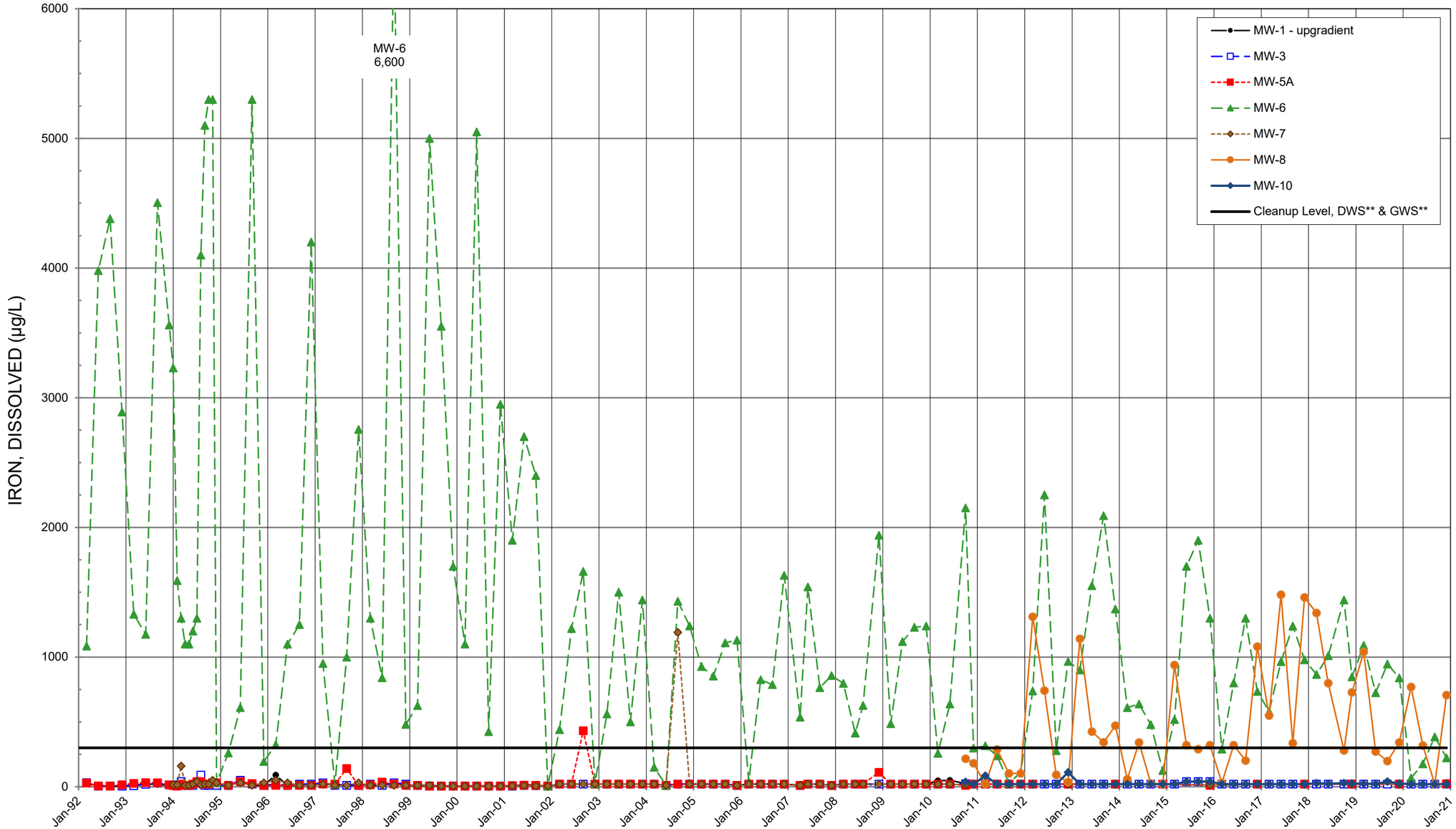


No Primary or Secondary Drinking Water Standard (DWS) Exists
No Primary or Secondary Groundwater Standard (GWS) Exists

DATE

CALCIUM
(RECENT)

OLALLA LANDFILL
Quarterly Monitoring Data

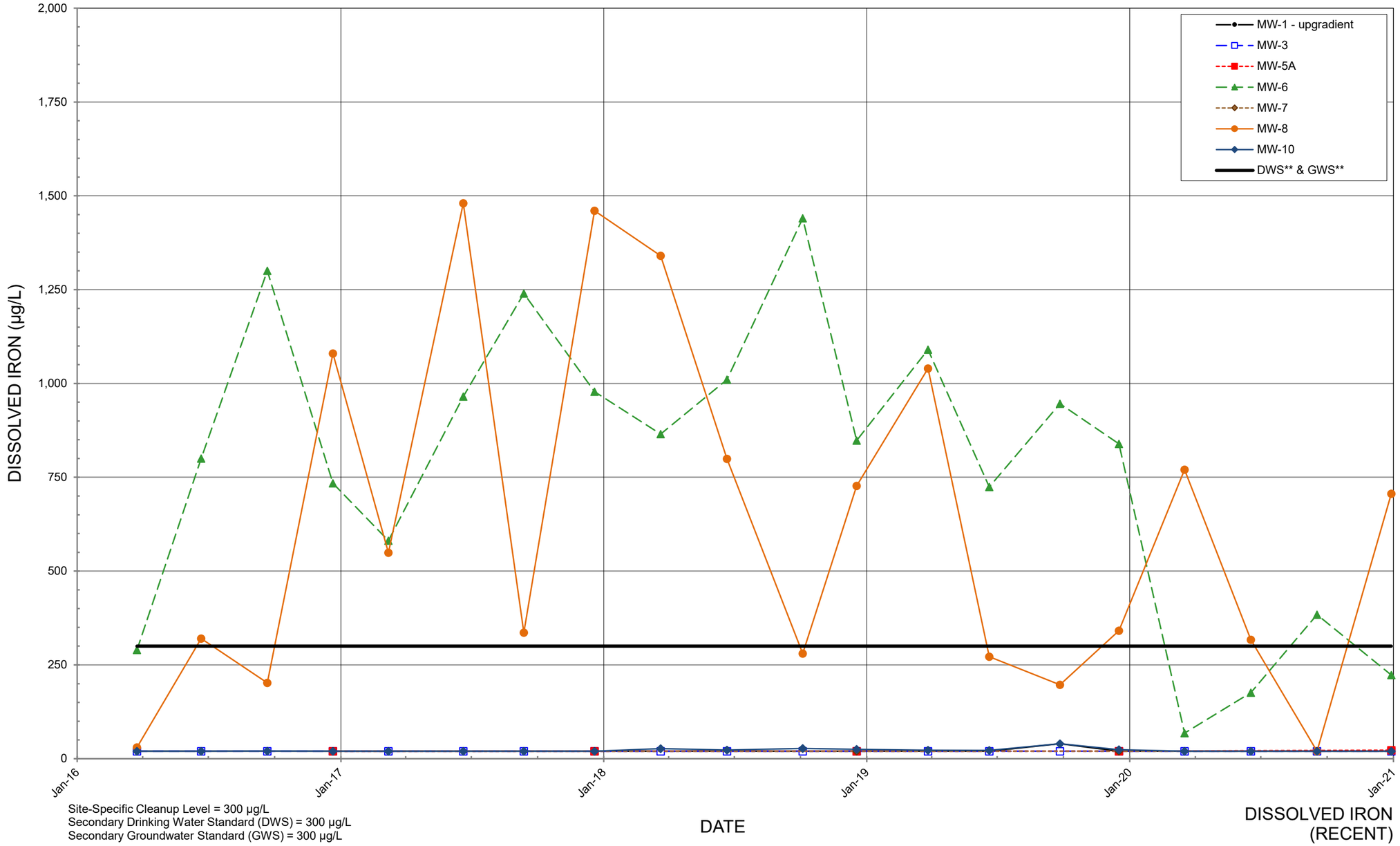


Cleanup Level = 300 µg/L
Secondary Drinking Water Standard (DWS) = 300 µg/L
Secondary Groundwater Standard (GWS) = 300 µg/L

DATE

DISSOLVED IRON

OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)

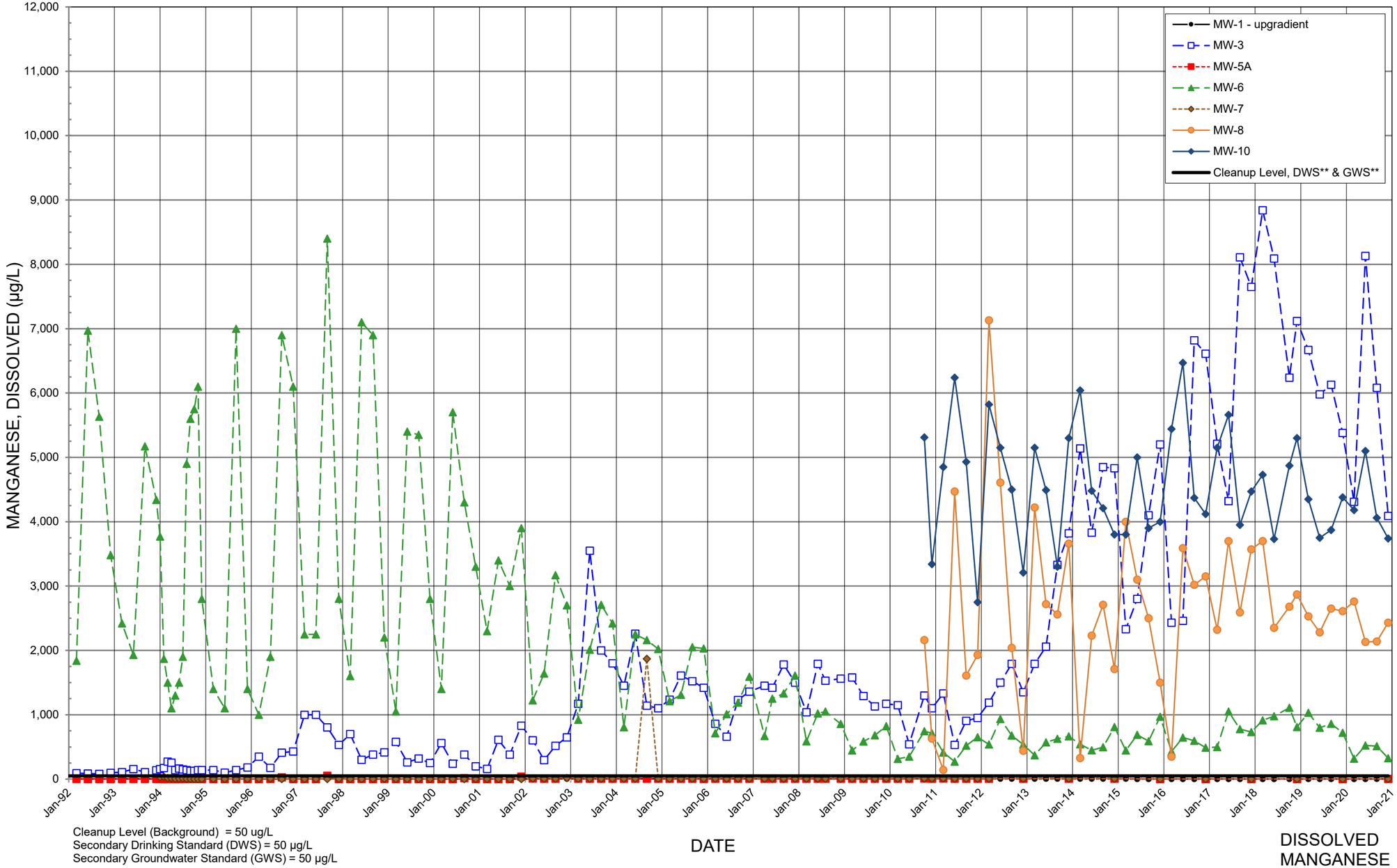


Site-Specific Cleanup Level = 300 µg/L
Secondary Drinking Water Standard (DWS) = 300 µg/L
Secondary Groundwater Standard (GWS) = 300 µg/L

DATE

DISSOLVED IRON
(RECENT)

OLALLA LANDFILL
Quarterly Monitoring Data

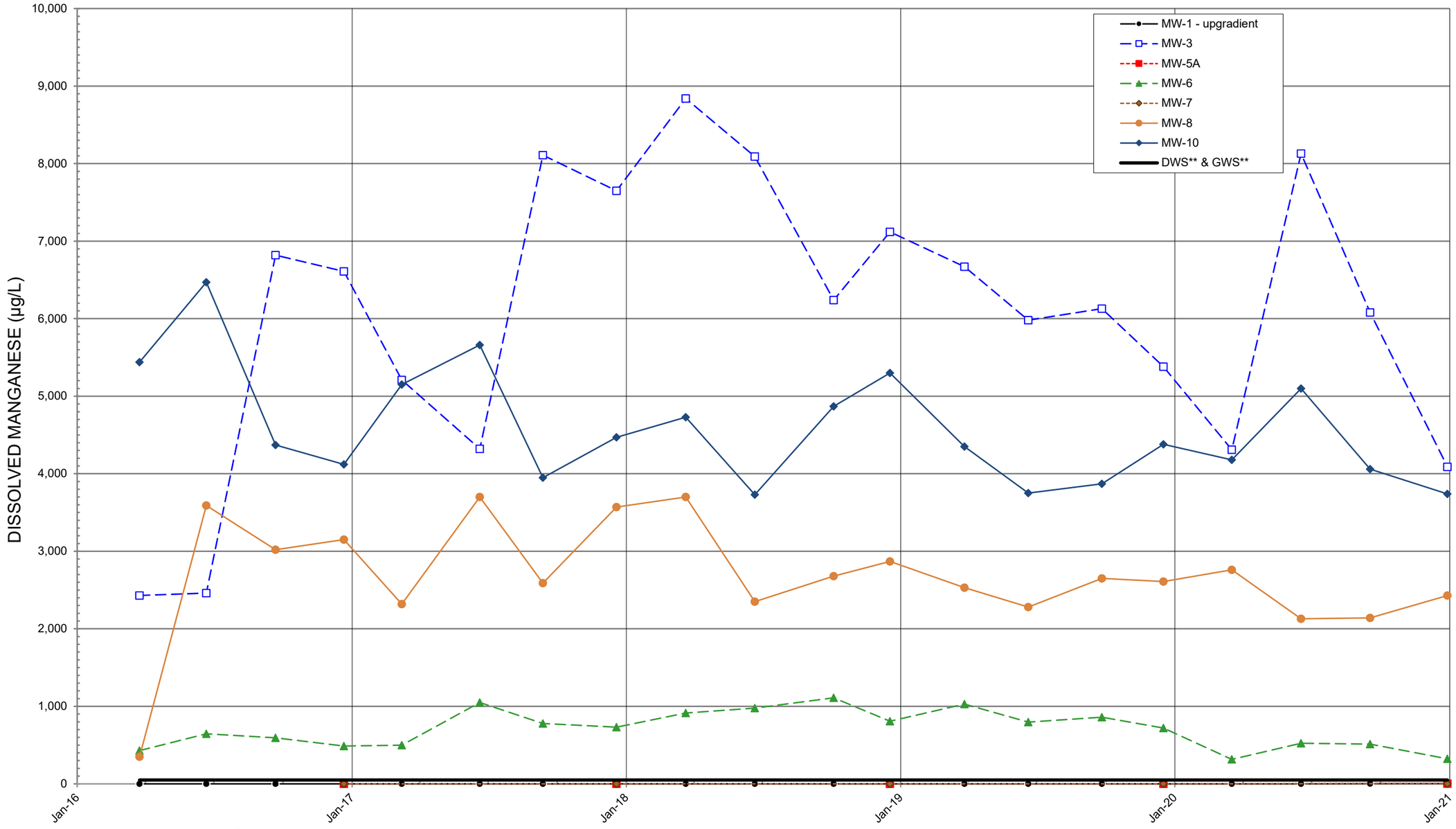


Cleanup Level (Background) = 50 ug/L
Secondary Drinking Standard (DWS) = 50 µg/L
Secondary Groundwater Standard (GWS) = 50 µg/L

DATE

DISSOLVED MANGANESE

OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)

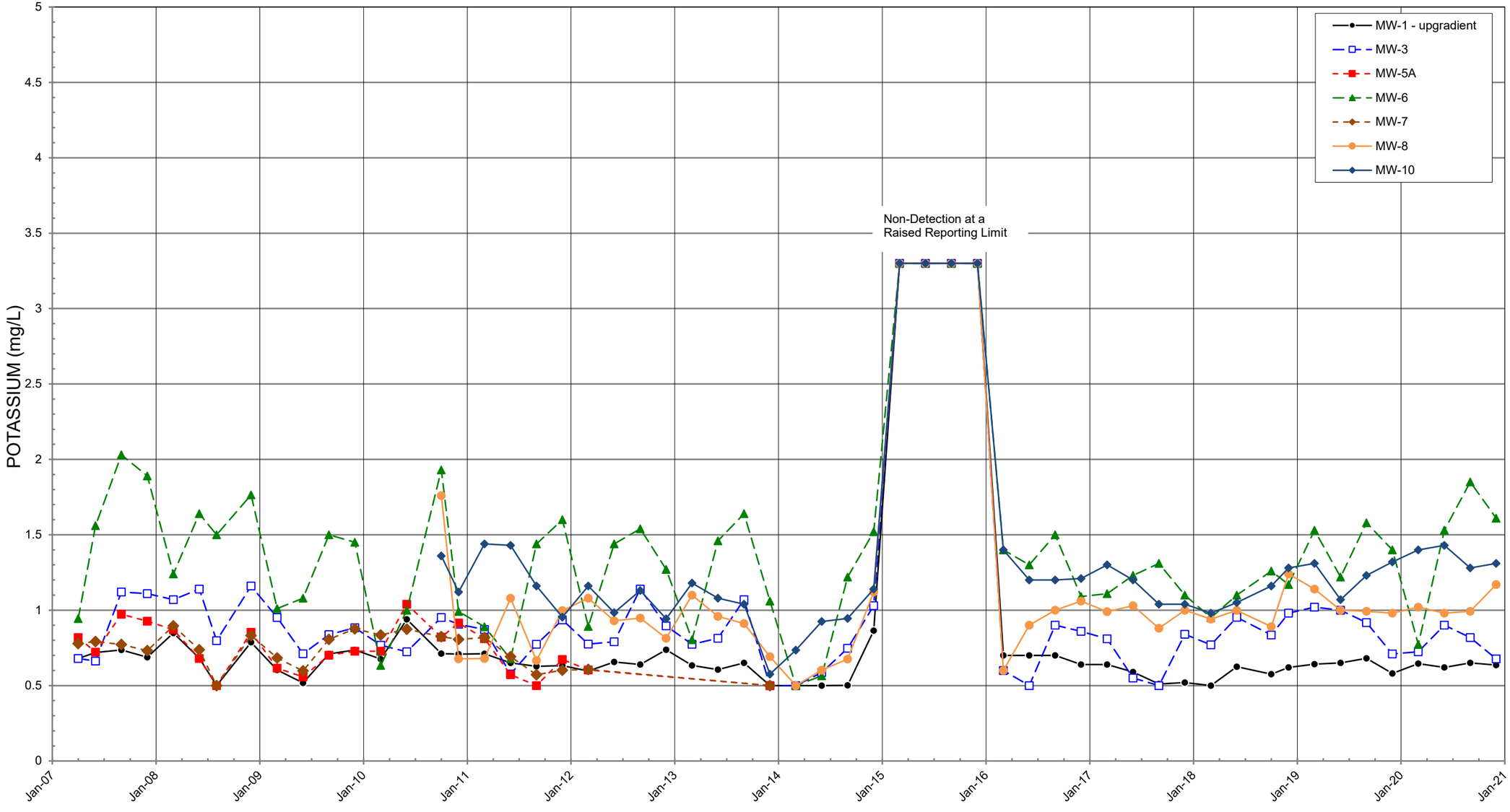


Site-specific Cleanup Level = 50 µg/L
Secondary Drinking Standard (DWS) = 50 µg/L
Secondary Groundwater Standard (GWS) = 50 µg/L

DATE

DISSOLVED MANGANESE (RECENT)

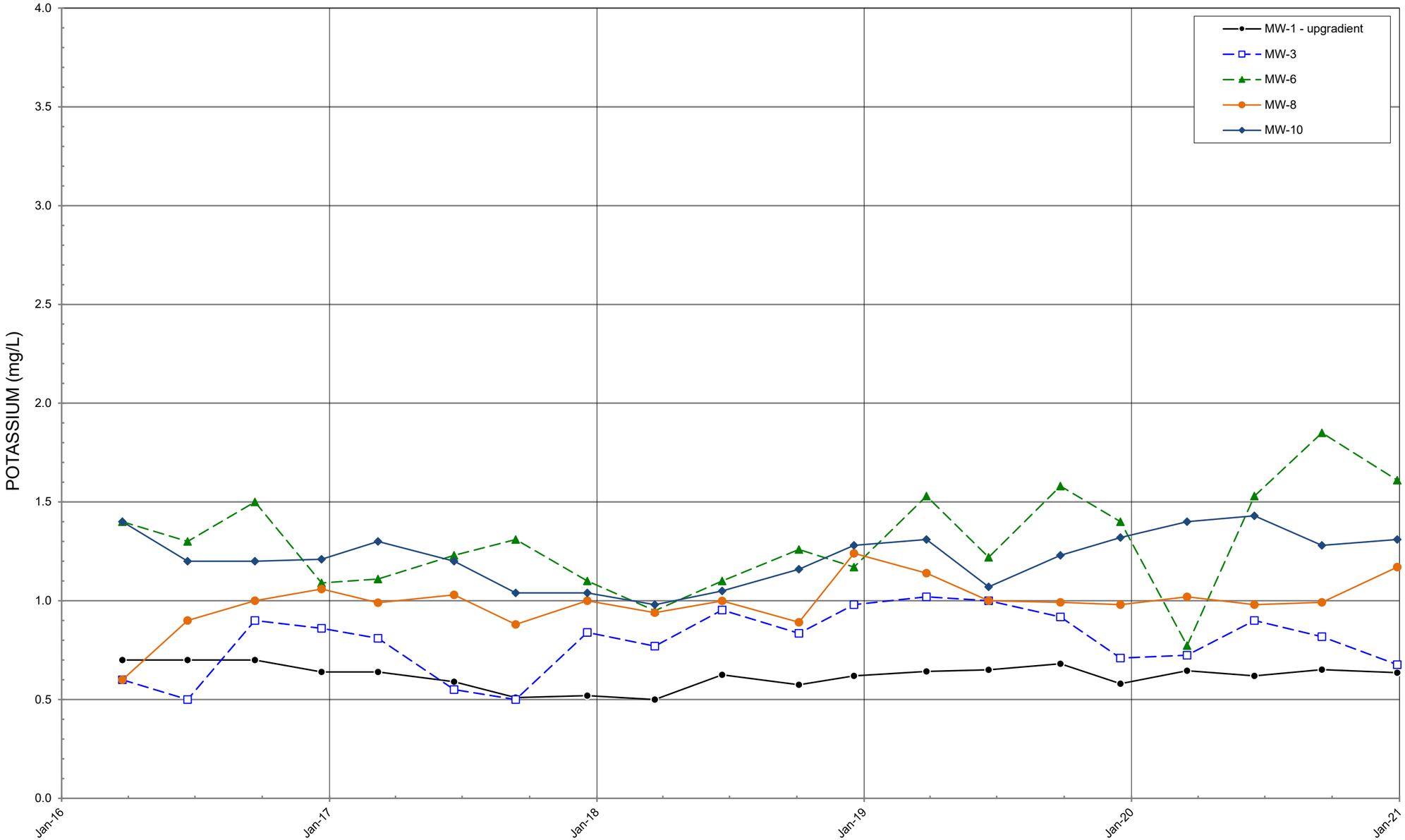
OLALLA LANDFILL
Quarterly Monitoring Data



No Primary or Secondary Drinking Water Standard (DWS) Exists
No Primary or Secondary Groundwater Standard (GWS) Exists

POTASSIUM
(Analysis started in 2007)

OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)

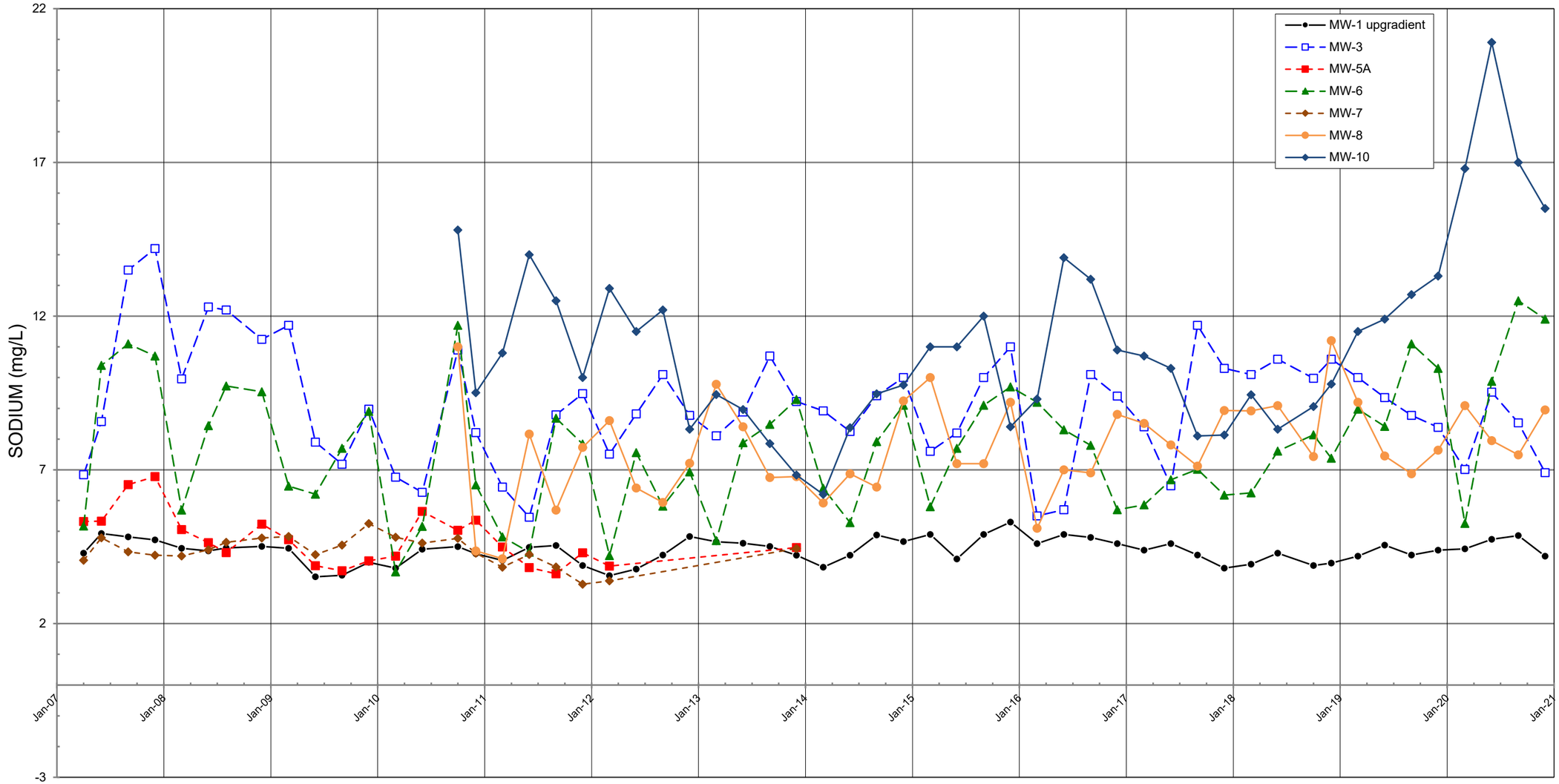


No Primary or Secondary Drinking Water Standard (DWS) Exists
No Primary or Secondary Groundwater Standard (GWS) Exists

DATE

POTASSIUM
(RECENT)

OLALLA LANDFILL
Quarterly Monitoring Data

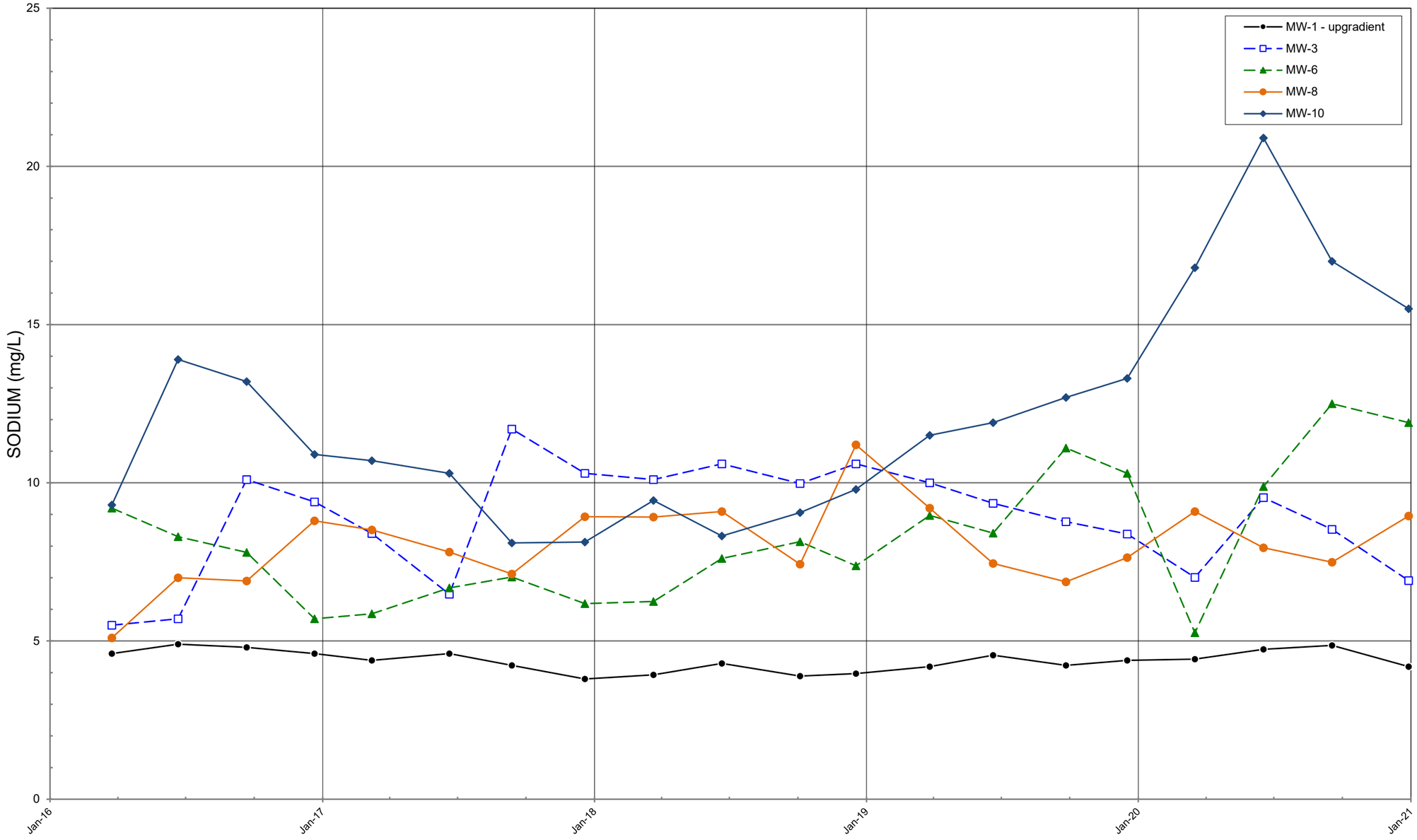


No Primary or Secondary Drinking Water Standard (DWS) Exists. Recommended level of concern for consumers with restricted daily sodium intake is 20 mg/L (off scale)
No Primary or Secondary Groundwater Standard (GWS) Exists

DATE

SODIUM
(Analysis started in 2007)

OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)

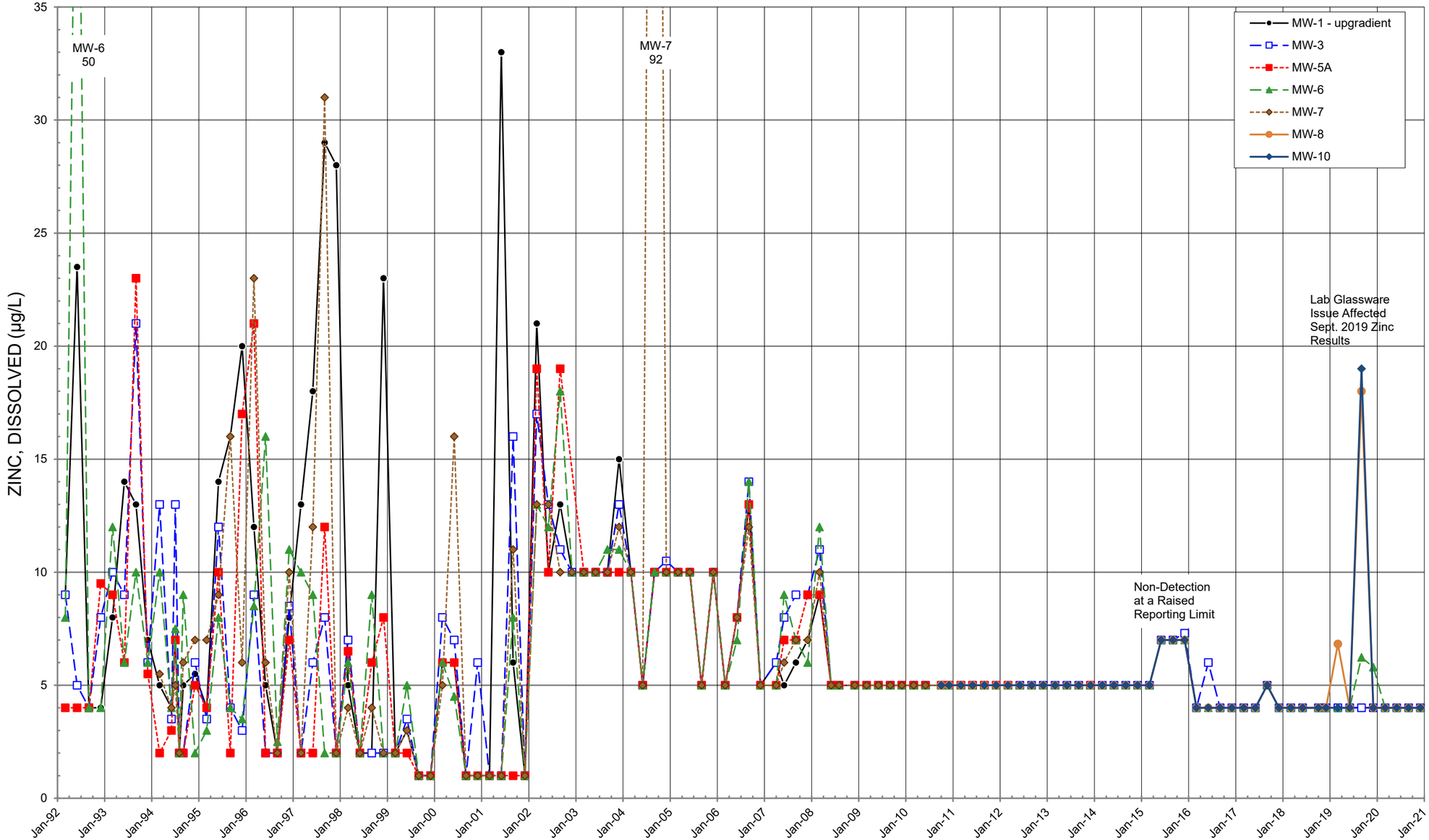


No Primary or Secondary Drinking Water Standard (DWS) Exists. Recommended level of concern for consumers with restricted daily sodium intake is 20 mg/L (off scale)
No Primary or Secondary Groundwater Standard (GWS) Exists

DATE

SODIUM (RECENT)

OLALLA LANDFILL
Quarterly Monitoring Data

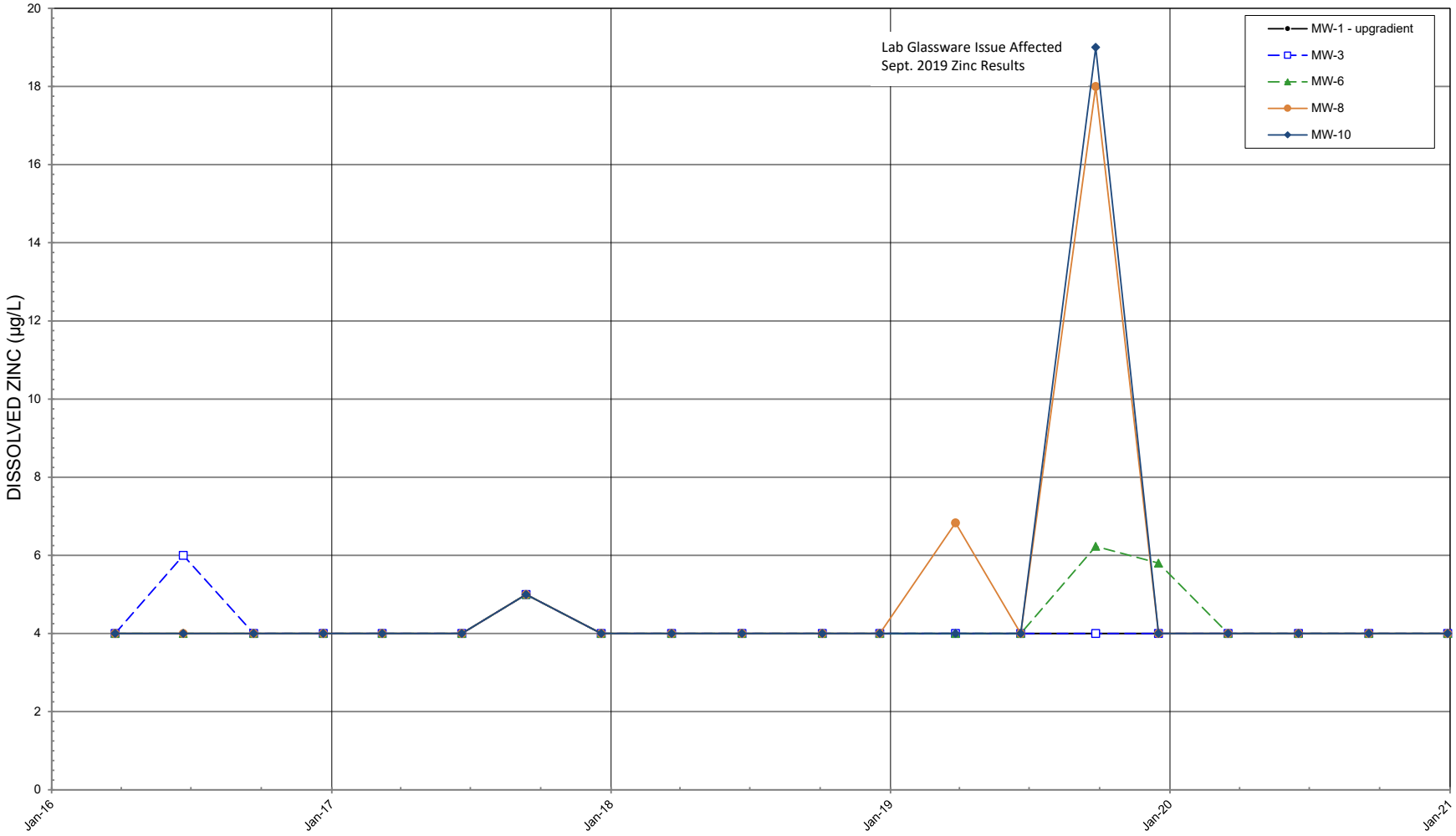


Secondary Drinking Water Standard (DWS) = 5000 µg/L (off scale)
Secondary Groundwater Standard (GWS) = 5000 µg/L (off scale)

DATE

DISSOLVED
ZINC

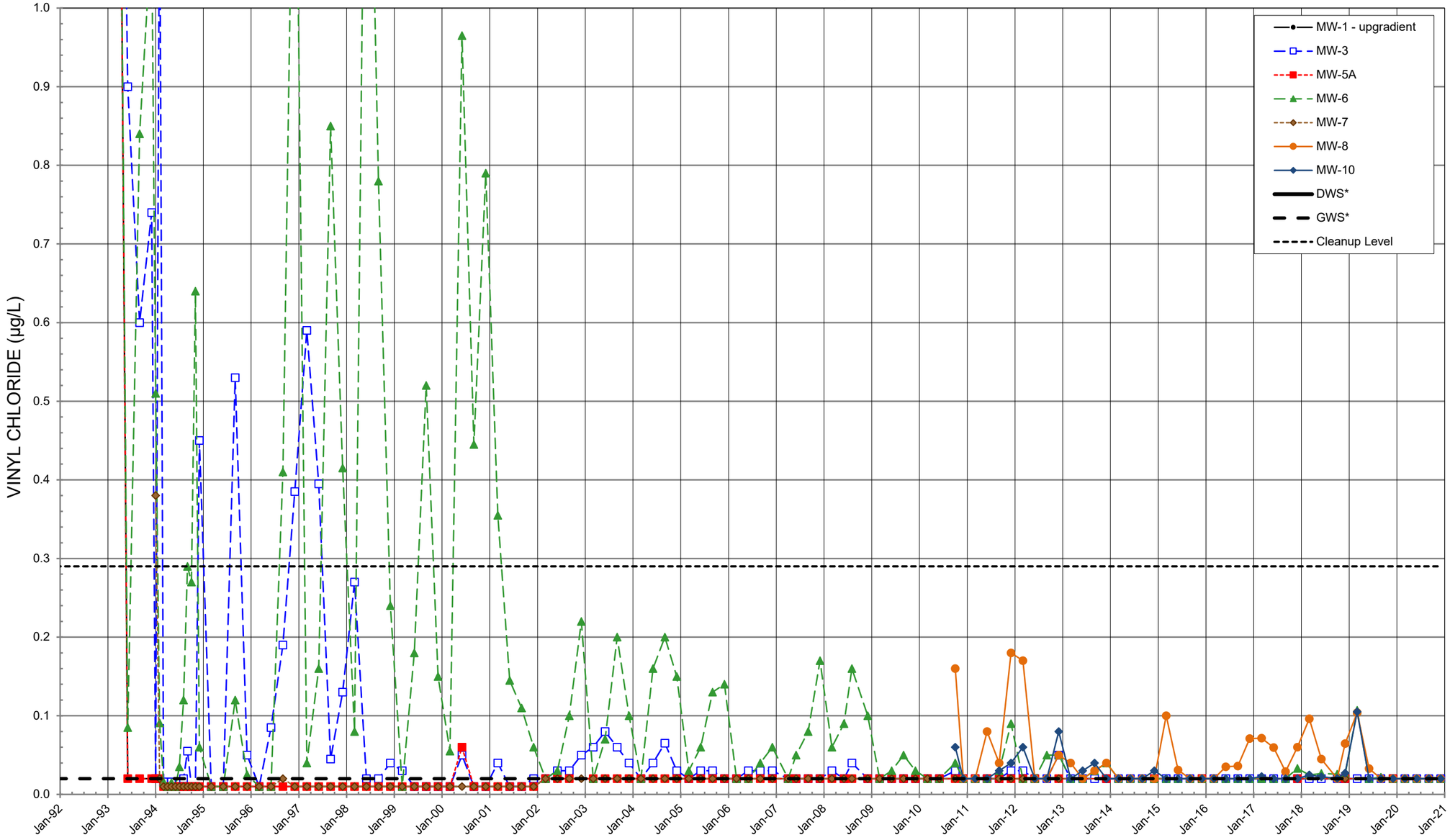
OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)



Secondary Drinking Water Standard (DWS) = 5000 µg/L (off scale)
Secondary Groundwater Standard (GWS) = 5000 µg/L (off scale)

DISSOLVED ZINC
(RECENT)

OLALLA LANDFILL
Quarterly Monitoring Data

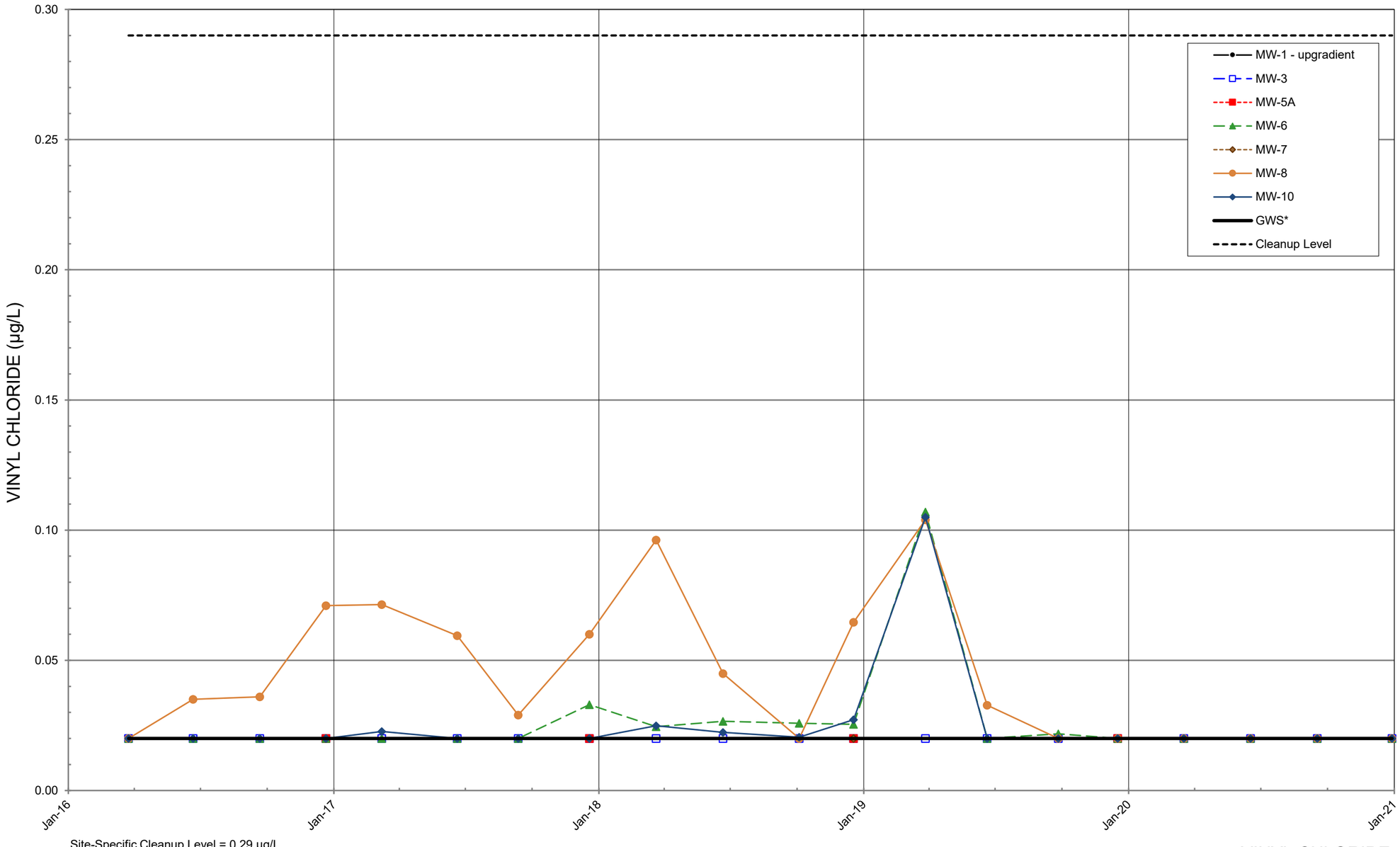


Site-Specific Cleanup Level = 0.29 ug/L
Primary Drinking Water Standard (DWS) = 2 µg/L (off scale)
Primary Groundwater Standard (GWS) = 0.02 µg/L

DATE

VINYL CHLORIDE

OLALLA LANDFILL
Quarterly Monitoring Data (most recent five years)



Site-Specific Cleanup Level = 0.29 µg/L
Primary Drinking Water Standard (DWS) = 2 µg/L (off scale)
Primary Groundwater Standard (GWS) = 0.02 µg/L

DATE

VINYL CHLORIDE
(RECENT)

March 2020 Mann-Kendall Statistically Significant Trend Test Results

Constituent or Parameter	MW-1	MW-3	MW-6	MW-8	MW-10
Ammonia (N)	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Arsenic - Dissolved	**UP**	NO TREND	NO TREND	NO TREND	NO TREND
Barium - Dissolved	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Bicarbonate	**DOWN**	NO TREND	NO TREND	NO TREND	NO TREND
Calcium	**DOWN**	NO TREND	NO TREND	NO TREND	NO TREND
Carbonate	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Chemical Oxygen Demand	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Chloride	NO TREND	**DOWN**	**UP**	**UP**	**UP**
Dissolved Oxygen	NO TREND	NO TREND	**UP**	NO TREND	NO TREND
Iron - Dissolved	NO TREND	NO TREND	NO TREND	NO TREND	**UP**
Manganese - Dissolved	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Nitrate	NO TREND	NO TREND	NO TREND	NO TREND	**DOWN**
Nitrite	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Oxidation Reduction Potential	**UP**	**UP**	**UP**	**UP**	**UP**
pH - Field	NO TREND	NO TREND	NO TREND	NO TREND	**UP**
pH - Laboratory	**DOWN**	NO TREND	**DOWN**	**DOWN**	NO TREND
Potassium	NO TREND	**UP**	NO TREND	**UP**	**UP**
Sodium	**DOWN**	NO TREND	NO TREND	NO TREND	NO TREND
Specific Conductance	**DOWN**	NO TREND	NO TREND	NO TREND	NO TREND
Sulfate	NO TREND	NO TREND	**DOWN**	NO TREND	NO TREND
Temperature	NO TREND	NO TREND	NO TREND	NO TREND	**DOWN**
Total Coliform	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Total Organic Carbon	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Vinyl Chloride	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Zinc - Dissolved	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND

NO TREND = No statistically significant trend.
UP = Statistically significant upward trend.
DOWN = Statistically significant downward trend.

June 2020 Mann-Kendall Statistically Significant Trend Test Results

Constituent or Parameter	MW-1	MW-3	MW-6	MW-8	MW-10
Ammonia (N)	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Arsenic - Dissolved	**UP**	**UP**	**DOWN**	**DOWN**	**UP**
Barium - Dissolved	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Bicarbonate	**DOWN**	NO TREND	NO TREND	NO TREND	NO TREND
Calcium	**DOWN**	NO TREND	NO TREND	NO TREND	NO TREND
Carbonate	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Chemical Oxygen Demand	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Chloride	NO TREND	**DOWN**	NO TREND	NO TREND	**UP**
Dissolved Oxygen	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Iron - Dissolved	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Manganese - Dissolved	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Nitrate	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Nitrite	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Oxidation Reduction Potential	**UP**	**UP**	**UP**	**UP**	**UP**
pH - Field	NO TREND	NO TREND	NO TREND	NO TREND	**UP**
pH - Laboratory	NO TREND	NO TREND	**DOWN**	NO TREND	NO TREND
Potassium	NO TREND	**UP**	NO TREND	NO TREND	**UP**
Sodium	**DOWN**	NO TREND	NO TREND	NO TREND	**UP**
Specific Conductance	**DOWN**	NO TREND	NO TREND	NO TREND	NO TREND
Sulfate	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Temperature	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Total Coliform	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Total Organic Carbon	NO TREND	NO TREND	NO TREND	**DOWN**	NO TREND
Vinyl Chloride	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Zinc - Dissolved	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND

NO TREND = No statistically significant trend.
UP = Statistically significant upward trend.
DOWN = Statistically significant downward trend.

September 2020 Mann-Kendall Statistically Significant Trend Test Results

Constituent or Parameter	MW-1	MW-3	MW-6	MW-8	MW-10
Ammonia (N)	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Arsenic - Dissolved	NO TREND	NO TREND	**DOWN**	**DOWN**	**UP**
Barium - Dissolved	NO TREND	NO TREND	**UP**	NO TREND	NO TREND
Bicarbonate	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Calcium	**DOWN**	NO TREND	NO TREND	NO TREND	NO TREND
Carbonate	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
COD	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Chloride	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Dissolved Oxygen	NO TREND	NO TREND	NO TREND	**DOWN**	NO TREND
Iron - Dissolved	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Manganese - Dissolved	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Nitrate	NO TREND	NO TREND	NO TREND	**DOWN**	NO TREND
Nitrite	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Oxidation Reduction Potential	**UP**	**UP**	**UP**	**UP**	**UP**
pH - Field	NO TREND	NO TREND	NO TREND	NO TREND	**UP**
pH - Laboratory	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Potassium	NO TREND	NO TREND	NO TREND	NO TREND	**UP**
Sodium	NO TREND	NO TREND	NO TREND	NO TREND	**UP**
Specific Conductance	**DOWN**	NO TREND	NO TREND	NO TREND	NO TREND
Sulfate	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Temperature	NO TREND	NO TREND	NO TREND	NO TREND	**DOWN**
Total Coliform	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
TOC	NO TREND	NO TREND	NO TREND	**DOWN**	NO TREND
Vinyl Chloride	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Zinc - Dissolved	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND

NO TREND = No statistically significant trend or data set has four or fewer detections and cannot be evaluated.
UP = Statistically significant upward trend.
DOWN = Statistically significant downward trend.

December 2020 Mann-Kendall Statistically Significant Trend Test Results

Constituent or Parameter	MW-1	MW-3	MW-5A	MW-6	MW-7	MW-8	MW-10
Ammonia (N)	**DOWN**	NO TREND	NA	NO TREND	NA	NO TREND	NO TREND
Arsenic - Dissolved	NO TREND	NO TREND	NO TREND	**DOWN**	**DOWN**	**DOWN**	**UP**
Barium - Dissolved	NO TREND	NO TREND	NA	**UP**	NA	NO TREND	NO TREND
Bicarbonate	NO TREND	NO TREND	NA	NO TREND	NA	NO TREND	NO TREND
Calcium	NO TREND	NO TREND	NA	NO TREND	NA	NO TREND	NO TREND
Carbonate	NO TREND	NO TREND	NA	NO TREND	NA	NO TREND	NO TREND
COD	NO TREND	NO TREND	NA	NO TREND	NA	NO TREND	**DOWN**
Chloride	NO TREND	NO TREND	NA	NO TREND	NA	NO TREND	NO TREND
Dissolved Oxygen	**DOWN**	NO TREND	**UP**	NO TREND	NO TREND	NO TREND	NO TREND
Iron - Dissolved	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Manganese - Dissolved	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND	**DOWN**
Nitrate	**DOWN**	NO TREND	NA	NO TREND	NA	**DOWN**	NO TREND
Nitrite	NO TREND	NO TREND	NA	NO TREND	NA	NO TREND	NO TREND
Oxidation Reduction Potential	**UP**	**UP**	NO TREND	**UP**	NO TREND	**UP**	**UP**
pH - Field	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND	**UP**
pH - Laboratory	NO TREND	NO TREND		NO TREND		NO TREND	NO TREND
Potassium	NO TREND	NO TREND	NA	NO TREND	NA	NO TREND	**UP**
Sodium	NO TREND	NO TREND	NA	**UP**	NA	NO TREND	**UP**
Specific Conductance	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Sulfate	NO TREND	NO TREND	NA	NO TREND	NA	NO TREND	NO TREND
Temperature	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND
Total Coliform	NO TREND	NO TREND	NA	NO TREND	NA	NO TREND	NO TREND
TOC	NO TREND	NO TREND	NA	NO TREND	NA	**DOWN**	NO TREND
Vinyl Chloride	NO TREND	NO TREND	NO TREND	NO TREND	NO TREND	**DOWN**	NO TREND
Zinc - Dissolved	NO TREND	NO TREND	NA	NO TREND	NA	NO TREND	NO TREND

NO TREND = No statistically significant trend or data set has four or fewer detections and cannot be evaluated.
UP = Statistically significant upward trend.
DOWN = Statistically significant downward trend.

March 2020 Shapiro-Wilk Test for Normality Results

Constituent or Parameter	MW-1	MW-3	MW-6	MW-8	MW-10
Ammonia (N)	Non-normal	ND	Non-normal	Non-normal	Non-normal
Arsenic - Dissolved	Non-normal	Non-normal	Normal	Normal	Normal
Barium - Dissolved	Non-normal	Non-normal	Normal	Normal	Normal
Bicarbonate	Non-normal	Non-normal	Non-normal	Non-normal	Non-normal
Calcium	Non-normal	Normal	Normal	Normal	Non-normal
Carbonate	ND	ND	ND	ND	ND
Chemical Oxygen Demand	ND	Non-normal	ND	ND	Non-normal
Chloride	Normal	Non-normal	Non-normal	Non-normal	Normal
Dissolved Oxygen	Normal	Non-normal	Non-normal	Normal	Non-normal
Iron - Dissolved	ND	ND	Normal	Non-normal	Non-normal
Manganese - Dissolved	ND	Normal	Normal	Non-normal	Non-normal
Nitrate	Normal	Non-normal	Non-normal	Non-normal	Non-normal
Nitrite	Non-normal	ND	Non-normal	Non-normal	ND
Oxidation Reduction Potential	Normal	Normal	Non-normal	Non-normal	Non-normal
pH - Field	Non-normal	Normal	Non-normal	Normal	Normal
pH - Laboratory	Normal	Non-normal	Non-normal	Normal	Non-normal
Potassium	Non-normal	Non-normal	Non-normal	Non-normal	Non-normal
Sodium	Normal	Normal	Normal	Normal	Normal
Specific Conductance	Normal	Non-normal	Normal	Normal	Normal
Sulfate	Non-normal	Normal	Non-normal	Normal	Non-normal
Temperature	Non-normal	Non-normal	Normal	Normal	Non-normal
Total Coliform	ND	ND	ND	ND	ND
Total Organic Carbon	ND	Non-normal	Non-normal	Normal	Non-normal
Vinyl Chloride	ND	ND	Non-normal	Non-normal	Non-normal
Zinc - Dissolved	ND	ND	ND	ND	ND

Notes:
ND = Data set has four or fewer quarters with detects and statistical tests cannot be performed.

June 2020 Shapiro-Wilk Test for Normality Results

Constituent or Parameter	MW-1	MW-3	MW-6	MW-8	MW-10
Ammonia (N)	ND	ND	Non-normal	Non-normal	Non-normal
Arsenic - Dissolved	Non-normal	Non-normal	Normal	Normal	Normal
Barium - Dissolved	Non-normal	Non-normal	Normal	Normal	Normal
Bicarbonate	Non-normal	Non-normal	Non-normal	Non-normal	Non-normal
Calcium	Non-normal	Normal	Normal	Normal	Normal
Carbonate	ND	ND	ND	ND	ND
COD	ND	Non-normal	ND	ND	Non-normal
Chloride	Non-normal	Non-normal	Normal	Non-normal	Normal
Dissolved Oxygen	Normal	Non-normal	Non-normal	Normal	Non-normal
Iron - Dissolved	ND	ND	Normal	Non-normal	Non-normal
Manganese - Dissolved	ND	Normal	Normal	Normal	Normal
Nitrate	Normal	Non-normal	Non-normal	Non-normal	Non-normal
Nitrite	ND	ND	ND	ND	ND
Oxidation-Reduction Potential	Normal	Non-normal	Non-normal	Non-normal	Normal
pH - Field	Non-normal	Non-normal	Normal	Non-normal	Normal
pH - Laboratory	Non-normal	Non-normal	Non-normal	Non-normal	Non-normal
Potassium	Non-normal	Non-normal	Non-normal	Non-normal	Non-normal
Sodium	Normal	Non-normal	Normal	Normal	Non-normal
Specific Conductance	Non-normal	Non-normal	Normal	Normal	Normal
Sulfate	Normal	Normal	Non-normal	Normal	Non-normal
Temperature	Non-normal	Non-normal	Normal	Normal	Non-normal
Total Coliform	ND	ND	ND	ND	ND
TOC	ND	Normal	Non-normal	Normal	Normal
Vinyl Chloride	ND	ND	Non-normal	Non-normal	Non-normal
Zinc - Dissolved	ND	ND	ND	ND	ND

Notes:
ND = Data set has four or fewer quarters with detects and statistical tests cannot be performed.

September 2020 Shapiro-Wilk Test for Normality Results

Constituent or Parameter	MW-1	MW-3	MW-6	MW-8	MW-10
Ammonia (N)	ND	ND	Non-normal	Non-normal	Non-normal
Arsenic - Dissolved	Non-normal	Non-normal	Normal	Normal	Normal
Barium - Dissolved	Non-normal	Non-normal	Normal	Normal	Normal
Bicarbonate	Normal	Normal	Normal	Normal	Normal
Calcium	Normal	Normal	Normal	Normal	Normal
Carbonate	ND	ND	ND	ND	ND
COD	ND	Non-normal	ND	ND	Non-normal
Chloride	Normal	Non-normal	Normal	Non-normal	Normal
Dissolved Oxygen	Normal	Non-normal	Non-normal	Normal	Non-normal
Iron - Dissolved	ND	ND	Normal	Non-normal	Non-normal
Manganese - Dissolved	ND	Normal	Normal	Normal	Normal
Nitrate	Normal	Non-normal	Non-normal	Normal	Non-normal
Nitrite	ND	ND	ND	ND	ND
Oxidation-Reduction Potential	Normal	Non-normal	Non-normal	Non-normal	Non-normal
pH - Field	Non-normal	Non-normal	Non-normal	Normal	Normal
pH - Laboratory	Non-normal	Non-normal	Non-normal	Non-normal	Non-normal
Potassium	Non-normal	Non-normal	Non-normal	Non-normal	Non-normal
Sodium	Normal	Normal	Normal	Normal	Non-normal
Specific Conductance	Non-normal	Non-normal	Normal	Normal	Normal
Sulfate	Normal	Normal	Normal	Normal	Non-normal
Temperature	Non-normal	Normal	Normal	Normal	Non-normal
Total Coliform	ND	ND	ND	ND	ND
TOC	ND	Normal	Normal	Normal	Normal
Vinyl Chloride	ND	ND	Non-normal	Non-normal	Non-normal
Zinc - Dissolved	ND	ND	ND	ND	ND

Notes:
ND = Data set has four or fewer quarters with detects and statistical tests cannot be performed.

December 2020 Shapiro-Wilk Test for Normality Results

Constituent or Parameter	MW-1	MW-3	MW-5A	MW-6	MW-7	MW-8	MW-10
Ammonia (N)	ND	ND	NA	Non-normal	NA	Non-normal	Normal
Arsenic - Dissolved	Normal	Non-normal	Normal	Normal	Normal	Normal	Normal
Barium - Dissolved	Non-normal	Normal	NA	Normal	NA	Normal	Normal
Bicarbonate	Non-normal	Non-normal	NA	Non-normal	NA	Non-normal	Non-normal
Calcium	Normal	Normal	NA	Normal	NA	Normal	Normal
Carbonate	ND	ND	NA	ND	NA	ND	ND
COD	ND	Non-normal	NA	ND	NA	ND	Non-Normal
Chloride	Normal	Non-normal	NA	Normal	NA	Non-normal	Normal
Dissolved Oxygen	Normal	Non-normal	Normal	Non-normal	Non-normal	Normal	Non-normal
Iron - Dissolved	ND	ND	ND	Normal	ND	Non-normal	Non-normal
Manganese - Dissolved	ND	Normal	ND	Normal	ND	Non-normal	Normal
Nitrate	Non-normal	Non-normal	NA	Non-normal	NA	Non-normal	Non-normal
Nitrite	ND	ND	NA	ND	NA	ND	ND
Oxidation-Reduction Potential	Normal	Non-normal	Normal	Non-normal	Normal	Non-normal	Normal
pH - Field	Non-normal	Non-normal	Normal	Non-normal	Normal	Normal	Normal
pH - Laboratory	Non-normal	Non-normal	Normal	Non-normal	Non-normal	Non-normal	Non-normal
Potassium	Non-normal	Non-normal	NA	Non-normal	NA	Non-normal	Non-normal
Sodium	Normal	Normal	NA	Normal	NA	Normal	Normal
Specific Conductance	Non-normal	Normal	Normal	Normal	Normal	Normal	Normal
Sulfate	Normal	Non-normal	NA	Non-normal	NA	Normal	Non-normal
Temperature	Non-normal	Normal	Normal	Normal	Normal	Normal	Non-normal
Total Coliform	ND	ND	NA	ND	NA	ND	ND
TOC	ND	Normal	NA	Normal	NA	Normal	Normal
Vinyl Chloride	ND	ND	ND	Non-normal	ND	Non-normal	Non-normal
Zinc - Dissolved	ND	ND	NA	ND	NA	ND	ND

Notes:
ND = Data set has four or fewer quarters with detects and statistical tests cannot be performed.
NA = Not analyzed per the SWHP

March 2020 Results of 95% Confidence Interval Evaluations

Constituent or Parameter	MW-1	MW-3	MW-6	MW-8	MW-10	Regulatory Level	Basis for Comparison
Ammonia (N) (mg/L)	ND	ND	ND to 18	ND to 30	ND to 83	None	
Arsenic - Dissolved	**0.09 to 0.11**	**0.10 to 0.12**	**0.95 to 1.14**	**1.35 to 1.87**	**1.71 to 2.06**	0.05 µg/L	Primary GW Standard
Arsenic - Dissolved	**0.09 to 0.11**	**0.10 to 0.12**	**0.95 to 1.14**	**1.35 to 1.87**	**1.71 to 2.06**	1.29 µg/L	Site-Specific Cleanup Level
Barium - Dissolved	**ND to 4.0**	**14.0 to 17.0**	**10.4 to 13.7**	**5.68 to 7.83**	**13.0 to 15.6**	1000 µg/L	Primary GW Standard
Bicarbonate (mg/L)	38.5 to 51.0	133 to 223	114 to 180	96.4 to 160	160 to 199	None	
Calcium (mg/L)	9,800 to 11,000	39,140 to 47,910	28,362 to 34,763	20,451 to 25,724	35,500 to 41,200	None	
Carbonate (mg/L)	ND	ND	ND	ND	ND	None	
Chemical Oxygen Demand (COD) (mg/L)	ND	ND	ND	ND	ND to 12.6	None	
Chloride	**3,623 to 4,282**	**2,440 to 3,225**	**1,940 to 3,180**	**2,180 to 2,660**	**5,113 to 8,442**	250,000 µg/L	Secondary GW and DW Standard
Dissolved Oxygen (mg/L)	9.83 to 10.3	0.29 to 0.94	0.22 to 0.49	11.1 to 20.6	0.22 to 0.59	None	
Iron - Dissolved	**ND**	**ND**	**725 to 1,042**	**280 to 799**	**ND to 20.5**	300 µg/L	Secondary GW and DW Standard
Manganese - Dissolved	**ND**	**4,868 to 6,143**	**651 to 800**	**2,350 to 3,020**	**4,000 to 4,870**	50 µg/L	Secondary GW and DW Standard
Nitrate	**518 to 910**	**ND to 19.0**	**ND**	**32.0 to 108**	**ND to ND**	10,000 µg/L	Primary GW and DW Standard
Nitrite	**ND**	**ND**	**ND**	**ND**	**ND**	1,000 µg/L	Primary DW Standard
Oxidation-Reduction Potential (ORP) (mV)	175 to 236	156 to 220	4.40 to 34.9	42.2 to 65.8	93.9 to 136	None	
pH - Field (standard units)	**6.2 to 6.5**	**6.1 to 6.2**	**6.5 to 6.7**	**6.5 to 6.7**	**6.5 to 6.6**	6.5 - 8.5	Secondary GW Standard
pH - Laboratory (standard units)	**6.3 to 6.5**	**6.2 to 6.3**	**6.5 to 6.7**	**6.5 to 6.8**	**6.5 to 6.7**	6.5 - 8.5	Secondary GW Standard
Potassium	502 to 641	550 to 859	1,090 to 1,300	602 to 993	976 to 1,210	None	
Sodium	**4,282 to 4,564**	**8,560 to 9,672**	**7,209 to 8,296**	**7,431 to 8,409**	**9,604 to 10,961**	20,000 µg/L	Secondary DW Standard
Specific Conductance (µmhos/cm)	**114 to 121**	**325 to 443**	**252 to 309**	**209 to 262**	**367 to 413**	700 µmhos/cm	Secondary DW Standard
Sulfate	**3,620 to 4,200**	**14,131 to 18,116**	**6,400 to 8,470**	**4,064 to 4,713**	**7,650 to 8,500**	250,000 µg/L	Secondary GW and DW Standard
Temperature (°C)	10.8 to 11.0	11.8 to 12.0	11.1 to 11.6	10.5 to 11.0	11.2 to 11.6	None	
Total Coliform (Colony Forming Units/100 mL)	**ND**	**ND**	**ND**	**ND**	**ND**	1/100 mL	Primary GW and DW Standard
Total Organic Carbon (TOC) (mg/L)	ND	2,360 to 2,980	1,730 to 2,140	733 to 1,100	2,840 to 3,430	None	
Vinyl Chloride	**ND**	**ND**	**ND**	**ND to 0.04**	**ND**	0.02 µg/L	Primary GW Standard
Vinyl Chloride	**ND**	**ND**	**ND**	**ND to 0.04**	**ND**	0.29 µg/L	Site-Specific Cleanup Level
Zinc - Dissolved	**ND**	**ND**	**ND**	**ND**	**ND**	5,000 µg/L	Secondary GW and DW Standard

Notes:

All concentrations reported as µg/L unless otherwise noted.

ND	= Data all non-detects or 4 or fewer detections
	= 95% Lower CI Exceeds Regulatory Level (Exceedance)
	= 95% Upper CI Exceeds Regulatory Level but Lower CI Does Not (No Exceedance, No Compliance)
	= 95% Upper CI Does not Exceed Regulatory Level (No Exceedance)
	= No Regulatory Level
mg/L	= milligrams per liter
mV	= millivolts
µmhos/cm	= micromhos per centimeter

Normally Distributed Data - Parametric Confidence Interval - Data not Transformed

Non-Normally Distributed Data - Non-Parametric Confidence Interval - Log Base-10 Transformed Data

Non-Detects treated as 0

June 2020 Results of 95% Confidence Interval Evaluations

Constituent or Parameter	MW-1	MW-3	MW-6	MW-8	MW-10	Regulatory Level	Basis for Comparison
Ammonia (N)	ND	ND	ND to 41	ND to 40	78 to 87	None	
Arsenic - Dissolved	**0.09 to 0.11**	**0.10 to 0.12**	**0.98 to 1.21**	**1.43 to 1.99**	**1.57 to 1.88**	0.05 µg/L	Primary GW Standard
Arsenic - Dissolved	**0.09 to 0.11**	**0.10 to 0.12**	**0.979 to 1.21**	**1.43 to 1.99**	**1.57 to 1.88**	1.29 µg/L	Site-Specific Cleanup Level
Barium - Dissolved	**ND to 4.4**	**14.5 to 17.8**	**11.7 to 14.9**	**5.48 to 7.89**	**13.6 to 16.8**	1000 µg/L	Primary GW Standard
Bicarbonate	41.3 to 52.0	200 to 251	155 to 186	97.0 to 174	178 to 229	None	
Calcium	9,727 to 11,000	38,719 to 49,603	30,631 to 36,714	20,321 to 26,623	37,706 to 42,672	None	
Carbonate	ND	ND	ND	ND	ND	None	
COD (mg/L)	ND	ND	ND	ND	ND to 12.6	None	
Chloride	**3,112 to 3,920**	**2,259 to 3,100**	**2,601 to 3,622**	**2,330 to 2,890**	**4,525 to 8,309**	250,000 µg/L	Secondary GW and DW Standard
Dissolved Oxygen (mg/L)	9.85 to 10.3	0.219 to 1.18	0.20 to .575	8.59 to 18.4	0.182 to .589	None	
Iron - Dissolved	**ND**	**ND**	**716 to 1,089**	**288 to 794**	**ND to 23.2**	300 µg/L	Secondary GW and DW Standard
Manganese - Dissolved	**ND**	**5,276 to 6,815**	**665 to 833**	**2,269 to 2,989**	**4,310 to 4,941**	50 µg/L	Secondary GW and DW Standard
Nitrate	**591 to 1,038**	**ND to 23.8**	**ND to 24.0**	**32.4 to 108**	**ND**	10,000 µg/L	Primary GW and DW Standard
Nitrite	**ND**	**ND**	**ND**	**ND**	**ND**	1,000 µg/L	Primary DW Standard
Oxidation-Reduction Potential	190 to 249	166 to 257	4.40 to 35.8	42.7 to 63.1	87.0 to 123	None	
pH - Field	**6.3 to 6.5**	**6.1 to 6.3**	**6.5 to 6.6**	**6.5 to 6.7**	**6.5 to 6.6**	6.5 - 8.5	Secondary GW Standard
pH - Laboratory	**6.3 to 6.6**	**6.1 to 6.3**	**6.5 to 6.6**	**6.5 to 6.7**	**6.5 to 6.6**	6.5 - 8.5	Secondary GW Standard
Potassium	575 to 646	600 to 897	1,099 to 1,309	891 to 993	1,047 to 1,230	None	
Sodium	**4,285 to 4,616**	**8,770 to 10,093**	**7,387 to 8,699**	**7,414 to 8,493**	**9,300 to 12,001**	20,000 µg/L	Secondary DW Standard
Specific Conductance (µmhos/cm)	**109 to 124**	**325 to 455**	**270 to 332**	**219 to 283**	**380 to 428**	700 µmhos/cm	Secondary DW Standard
Sulfate	**3,769 to 4,289**	**15,033 to 19,134**	**6,486 to 8,511**	**4,086 to 4,771**	**7,943 to 9,376**	250,000 µg/L	Secondary GW and DW Standard
Temperature (°C)	10.8 to 11.0	11.8 to 12.0	11.1 to 11.5	10.4 to 10.9	11.2 to 11.5	None	
Total Coliform (Colony Forming Units/100 mL)	**ND**	**ND**	**ND**	**ND**	**ND**	1/100mL	Primary GW and DW Standard
TOC	ND	2,448 to 2,998	1,790 to 2,138	791 to 1,124	3,094 to 3,397	None	
Vinyl Chloride	**ND**	**ND**	**ND to 0.02**	**ND to 0.06**	**ND**	0.02 µg/L	Primary GW Standard
Vinyl Chloride	**ND**	**ND**	**ND to 0.02**	**ND to 0.06**	**ND**	0.29 µg/L	Site-Specific Cleanup Level
Zinc - Dissolved	**ND**	**ND**	**ND**	**ND**	**ND**	5,000 µg/L	Secondary GW and DW Standard

Notes:

All concentrations reported as µg/L unless otherwise noted.

ND = Data all non-detects or 4 or fewer detections

= 95% Lower CI Exceeds Regulatory Level (Exceedence)

= 95% Upper CI Exceeds Regulatory Level but Lower CI Does Not (No Exceedence, No Compliance)

= 95% Upper CI Does not Exceed Regulatory Level (No Exceedence)

= No Regulatory Level

Normally Distributed Data - Parametric Confidence Interval - Data not Transformed

Non-Normally Distributed Data - Non-Parametric Confidence Interval - Log Base-10 Transformed Data

Non-Detects treated as 0

September 2020 Results of 95% Confidence Interval Evaluations

Constituent or Parameter	MW-1	MW-3	MW-6	MW-8	MW-10	Regulatory Level	Basis for Comparison
Ammonia (N)	ND	ND	ND to 41	ND to 40	79 to 87	None	
Arsenic - Dissolved	**0.09 to 0.11**	**0.10 to 0.12**	**0.964 to 1.21**	**1.40 to 2.00**	**1.53 to 1.84**	0.05 µg/L	Primary GW Standard
Arsenic - Dissolved	**0.09 to 0.11**	**0.10 to 0.12**	**0.964 to 1.21**	**1.40 to 2.00**	**1.53 to 1.84**	1.29 µg/L	Site-Specific Cleanup Level
Barium - Dissolved	**ND to 4.4**	**14.5 to 18.0**	**11.6 to 14.9**	**5.51 to 8.06**	**13.8 to 17.0**	1000 µg/L	Primary GW Standard
Bicarbonate	42.4 to 47.2	201 to 232	157 to 177	106 to 145	183 to 212	None	
Calcium	9,972 to 11,046	38,108 to 49,645	30,104 to 36,379	20,746 to 27,195	37,685 to 42,950	None	
Carbonate	ND	ND	ND	ND	ND	None	
COD (mg/L)	ND	ND	ND	ND	ND to 12.6	None	
Chloride	**3,374 to 4,088**	**2,260 to 3,100**	**2,569 to 3,604**	**2,320 to 2,890**	**4,894 to 8,511**	250,000 µg/L	Secondary GW and DW Standard
Dissolved Oxygen (mg/L)	9.86 to 10.3	0.14 to 1.16	0.11 to 0.58	8.11 to 17.6	0.18 to 0.58	None	
Iron - Dissolved	**ND**	**ND**	**679 to 1,002**	**280 to 1,080**	**ND to 23.2**	300 µg/L	Secondary GW and DW Standard
Manganese - Dissolved	**ND**	**5,369 to 6,951**	**671 to 846**	**2,252 to 3,021**	**4,342 to 4,995**	50 µg/L	Secondary GW and DW Standard
Nitrate	**634 to 1,080**	**ND to 23.8**	**ND to 24.0**	**53.2 to 101**	**ND**	10,000 µg/L	Primary GW and DW Standard
Nitrite	**ND**	**ND**	**ND**	**ND**	**ND**	1,000 µg/L	Primary DW Standard
Oxidation-Reduction Potential	200 to 255	203 to 261	8.00 to 36.8	42.7 to 67.0	93.9 to 136	None	
pH - Field	**6.3 to 6.5**	**6.1 to 6.3**	**6.5 to 6.7**	**6.5 to 6.6**	**6.5 to 6.6**	6.5 - 8.5	Secondary GW Standard
pH - Laboratory	**6.3 to 6.4**	**6.1 to 6.3**	**6.5 to 6.6**	**6.5 to 6.6**	**6.5 to 6.6**	6.5 - 8.5	Secondary GW Standard
Potassium	575 to 650	600 to 918	1,100 to 1,400	891 to 999	1,052 to 1,280	None	
Sodium	**4,255 to 4,593**	**8,410 to 9,935**	**7,292 to 8,669**	**7,429 to 8,566**	**9,060 to 12,700**	20,000 µg/L	Secondary DW Standard
Specific Conductance (µmhos/cm)	**108 to 130**	**227 to 460**	**264 to 329**	**219 to 283**	**382 to 433**	700 µmhos/cm	Secondary DW Standard
Sulfate	**3,807 to 4,338**	**14,925 to 19,042**	**7,264 to 10,825**	**4,159 to 4,782**	**8,050 to 10,100**	250,000 µg/L	Secondary GW and DW Standard
Temperature (°C)	10.7 to 10.9	11.7 to 12.0	11.0 to 11.4	10.4 to 10.8	11.2 to 11.4	None	
Total Coliform (Colony Forming Units/100 mL)	**ND**	**ND**	**ND**	**ND**	**ND**	1/100mL	Primary GW and DW Standard
TOC	ND	2,366 to 2,906	1,898 to 2,142	791 to 1,124	3,077 to 3,393	None	
Vinyl Chloride	**ND**	**ND**	**ND to 0.02**	**ND to 0.06**	**ND**	0.02 µg/L	Primary GW Standard
Vinyl Chloride	**ND**	**ND**	**ND to 0.02**	**ND to 0.06**	**ND**	0.29 µg/L	Site-Specific Cleanup Level
Zinc - Dissolved	**ND**	**ND**	**ND**	**ND**	**ND**	5,000 µg/L	Secondary GW and DW Standard

Notes:

All concentrations reported as µg/L unless otherwise noted.

ND = Data all non-detects or 4 or fewer detections

= 95% Lower CI Exceeds Regulatory Level (Exceedence)

= 95% Upper CI Exceeds Regulatory Level but Lower CI Does Not (No Exceedence, No Compliance)

= 95% Upper CI Does not Exceed Regulatory Level (No Exceedence)

= No Regulatory Level

Normally Distributed Data - Parametric Confidence Interval - Data not Transformed

Non-Normally Distributed Data - Non-Parametric Confidence Interval - Log Base-10 Transformed Data

Non-Detects treated as 0

Table 6: December 2020 Results of 95% Confidence Interval Evaluations

Constituent or Parameter	MW-1	MW-3	MW-5A	MW-6	MW-7	MW-8	MW-10	Regulatory Level	Basis for Comparison
Ammonia (N)	ND to 40	ND	NA	ND to 41	NA	ND to 40	82 to 89	None	
Arsenic - Dissolved	**0.09 to 0.10**	**0.107 to 0.118**	**0.198 to 0.209**	**0.801 to 1.10**	**0.276 to 0.370**	**1.36 to 1.89**	**1.67 to 1.98**	0.05 µg/L	Primary GW Standard
Arsenic - Dissolved	**0.09 to 0.10**	**0.107 to 0.118**	**0.198 to 0.209**	**0.801 to 1.10**	**0.276 to 0.370**	**1.36 to 1.89**	**1.67 to 1.98**	1.29 µg/L	Site-Specific Cleanup Level
Barium - Dissolved	**ND to 4.0**	**13.7 to 16.2**	NA	**12.8 to 16.2**	NA	**5.70 to 7.86**	**14.18 to 16.98**	1000 µg/L	Primary GW Standard
Bicarbonate (mg of $CaCO_3$/L)	41.4 to 49.8	186 to 253	NA	156 to 183	NA	111 to 173	192 to 227	None	
Calcium	10,017 to 10,851	37,431 to 47,349	NA	31,508 to 36,982	NA	21,226 to 27,024	37,661 to 42,179	None	
Carbonate (mg of $CaCO_3$/L)	ND	ND	NA	ND	NA	ND	ND	None	
COD	ND	ND	NA	ND	NA	ND	ND to 12.6	None	
Chloride	**3,397 to 3,992**	**2,260 to 3,180**	NA	**2,663 to 3,622**	NA	**2,300 to 2,890**	**5,219 to 8,435**	250,000 µg/L	Secondary GW and DW Standard
Dissolved Oxygen (mg/L)	9.88 to 10.3	0.14 to 0.65	9.96 to 10.5	0.20 to 0.40	NA*	8.54 to 17.5	0.18 to 0.58	None	
Iron - Dissolved	**ND**	**ND**	**ND**	**587 to 894**	**ND**	**317 to 799**	**ND to 22.5**	300 µg/L	Secondary GW and DW Standard
Manganese - Dissolved	**ND**	**5,316 to 6,729**	**ND**	**613 to 799**	**ND**	**2,350 to 3,020**	**4,268 to 4,857**	50 µg/L	Secondary GW and DW Standard
Nitrate	**332 to 964**	**ND to 35.9**	NA	**ND to 24.0**	NA	**39.8 to 108**	**ND**	10,000 µg/L	Primary GW and DW Standard
Nitrite	**ND to 10**	**ND**	NA	**ND to 10**	NA	**ND to 10**	**ND**	1,000 µg/L	Primary DW Standard
Oxidation-Reduction Potential	211 to 258	224 to 256	169 to 286	15.0 to 36.9	95.2 to 280	42.7 to 79.9	107 to 145	None	
pH - Field	**6.2 to 6.5**	**6.1 to 6.3**	**6.3 to 6.9**	**6.4 to 6.7**	**6.6 to 6.7**	**6.5 to 6.6**	**6.5 to 6.6**	6.5 - 8.5	Secondary GW Standard
pH - Laboratory	**6.2 to 6.4**	**6.1 to 6.3**	**6.4 to 6.8**	**6.5 to 6.6**	NA*	**6.3 to 6.6**	**6.5 to 6.6**	6.5 - 8.5	Secondary GW Standard
Potassium	590 to 650	677 to 918	NA	1,170 to 1,530	NA	939 to 1,030	1,160 to 1,310	None	
Sodium	**4,239 to 4,495**	**8,189 to 9,539**	NA	**7,746 to 9,378**	NA	**7,575 to 8,560**	**10,680 to 13,268**	20,000 µg/L	Secondary DW Standard
Specific Conductance (µmhos/cm)	**108 to 120**	**284 to 426**	**60.1 to 187**	**261 to 331**	**79.5 to 108**	**219 to 288**	**387 to 439**	700 µmhos/cm	Secondary DW Standard
Sulfate	**3,795 to 4,295**	**12,900 to 20,200**	NA	**6,140 to 8,470**	NA	**4,258 to 4,915**	**7,920 to 10,100**	250,000 µg/L	Secondary GW and DW Standard
Temperature (°C)	10.8 to 10.9	11.7 to 11.9	11.5 to 12.3	11.1 to 11.4	10.8 to 11.3	10.4 to 10.9	11.2 to 11.4	None	
Total Coliform (count)	**ND**	**ND**	NA	**ND**	NA	**ND**	**ND**	1/100mL	Primary GW and DW Standard
TOC	ND	2,254 to 2,765	NA	1,877 to 2,099	NA	776 to 1,075	3,003 to 3,331	None	
Vinyl Chloride	**ND**	**ND**	**ND**	**ND to 0.02**	**ND**	**ND to 0.06**	**ND**	0.02 µg/L	Primary GW Standard
Vinyl Chloride	**ND**	**ND**	**ND**	**ND to 0.02**	**ND**	**ND to 0.06**	**ND**	0.29 µg/L	Site-Specific Cleanup Level
Zinc - Dissolved	**ND**	**ND**	NA	**ND**	NA	**ND**	**ND**	5,000 µg/L	Secondary GW and DW Standard

Notes:

All concentrations reported as µg/L unless otherwise noted.

NA = Not analyzed per the SWHP

ND = Data all non-detects or 4 or fewer detections

NA* = Insufficient number of measurements for 95% Confidence Comparison. Minimum of 6 is required for Non-normal data

= 95% Lower CI Exceeds Regulatory Level (Exceedence)

= 95% Upper CI Exceeds Regulatory Level but Lower CI Does Not (No Exceedence, No Compliance)

= 95% Upper CI Does not Exceed Regulatory Level (No Exceedence)

= No Regulatory Level

Normally Distributed Data - Parametric Confidence Interval - Data not Transformed

Non-Normally Distributed Data - Non-Parametric Confidence Interval - Log Base-10 Transformed Data

Non-Detects treated as 0

Appendix C:
Inspection, Maintenance, and Engineering Summary for 2020

Inspection, Maintenance, and Engineering Summary for 2020

The bulleted items below present a summary of the inspection, maintenance, and engineering tasks that were performed by SWD during 2020 at the Olalla Landfill.

- TRC conducted groundwater and landfill gas monitoring activities in all four quarters of 2020. The results are discussed in this report.

- TRC continued reporting and data analysis in accordance with Section IV of the SWHP and the CAP. The results are discussed in this report.

- SWD supported KPHD in quarterly inspections conducted at the Landfill. After the inspections, KPHD stated that no problems were noted during the inspections.

- SWD conducted regular inspections of the Landfill and its engineered systems including evaluation of the drainage systems and potential erosion areas. During 2020, all systems were operating as designed.

- SWD worked with other divisions in KCPW to maintain the systems at the Landfill including maintenance of the cap, stormwater drainage systems, and the stormwater detention pond. During 2020, routine maintenance was required including mowing of the cap and removal of vegetation.

- In 2019, the Kitsap County Department of Public Works, Roads Engineering survey group established permanent monitoring points, designated FM1 through FM25, on the surface of the closed Olalla Landfill at locations shown on the attached topographical maps. The purpose of the permanent points is to monitor possible movement of the surface of the closed landfill. In December 2020, Kitsap County surveyors re-surveyed the permanent monitoring points at Olalla Landfill. Results of the 2020 survey of the monitoring points compared to the original 2019 survey are provided below. Differences between the original 2019 survey coordinates and elevations relative to the 2020 survey coordinates and elevations are within the precision of the instrumentation and operators. This finding demonstrates no evidence of measurable movement of the surface of the closed Olalla Landfill.

KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS
614 DIVISION STREET (MS-26), PORT ORCHARD, WA 98366-4699 | KITSAP1: 360.337.5777 | KITSAPGOV.COM

MEMORANDUM

To: Alexis McKinnon

From: Kenneth Swindaman, PLS/Kitsap County Surveyor KWS

CC: File

Date: June 22, 2020

Subject: Survey procedures establishing values on monitoring points

The survey group within the Department of Public Works, Roads Engineering, established monitoring points on the surface of the closed Olalla landfill. We reviewed various methods to establish permanent points to monitor any possible movement on the surface of the closed landfill. To ensure monitoring stations would not penetrate beyond the top six inches of the top layer of the landfill surface, an 18 inch by 6-inch-deep concrete point was installed. A domed survey brass cap was installed on the surface of the concrete filled monitoring stations. The brass cap was stamped with monitoring number and a punch mark for all future observations.

Kitsap County survey staff established primary site survey control along the perimeter roads. GPS survey methods were used to establish both horizontal and vertical control values for each survey control point. Each primary control point was occupied with a 4-hour GPS session. The GPS sessions data was submitted to National Geodetic Survey using OPUS (Online Position User Service). This service provides horizontal and vertical results for each point.

Kitsap County survey staff established horizontal coordinates on each monitoring point. This was accomplished using a Leica TS50 total station. Each monitoring point was located from two different control stations and a mean of the two coordinate values was calculated. The largest difference between the two values was no greater than 0.03′ or approximately 5/16 of an inch. Elevations were established utilizing a Trimble DiNi digital level. The elevation error between primary survey control was no greater than 0.02′ or approximately 1/4 of an inch.

If there are any additional questions you may have please let me know and I will try to provide as much information as possible.

KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS
614 DIVISION STREET (MS-26), PORT ORCHARD, WA 98366-4699 | KITSAP1: 360.337.5777 | KITSAPGOV.COM

MEMORANDUM

To: Alexis McKinnon

From: Kenneth Swindaman, PLS/Kitsap County Surveyor

CC: File

Date: December 16, 2020

Subject: Olalla Landfill Monitoring Points Observations

Monitoring stations were installed on the surface of Olalla Landfill in July 2019. Kitsap County survey staff established initial horizontal coordinates and elevations on each monitoring point.

Our staff established new coordinate and elevations on each monitoring points in December 2020.

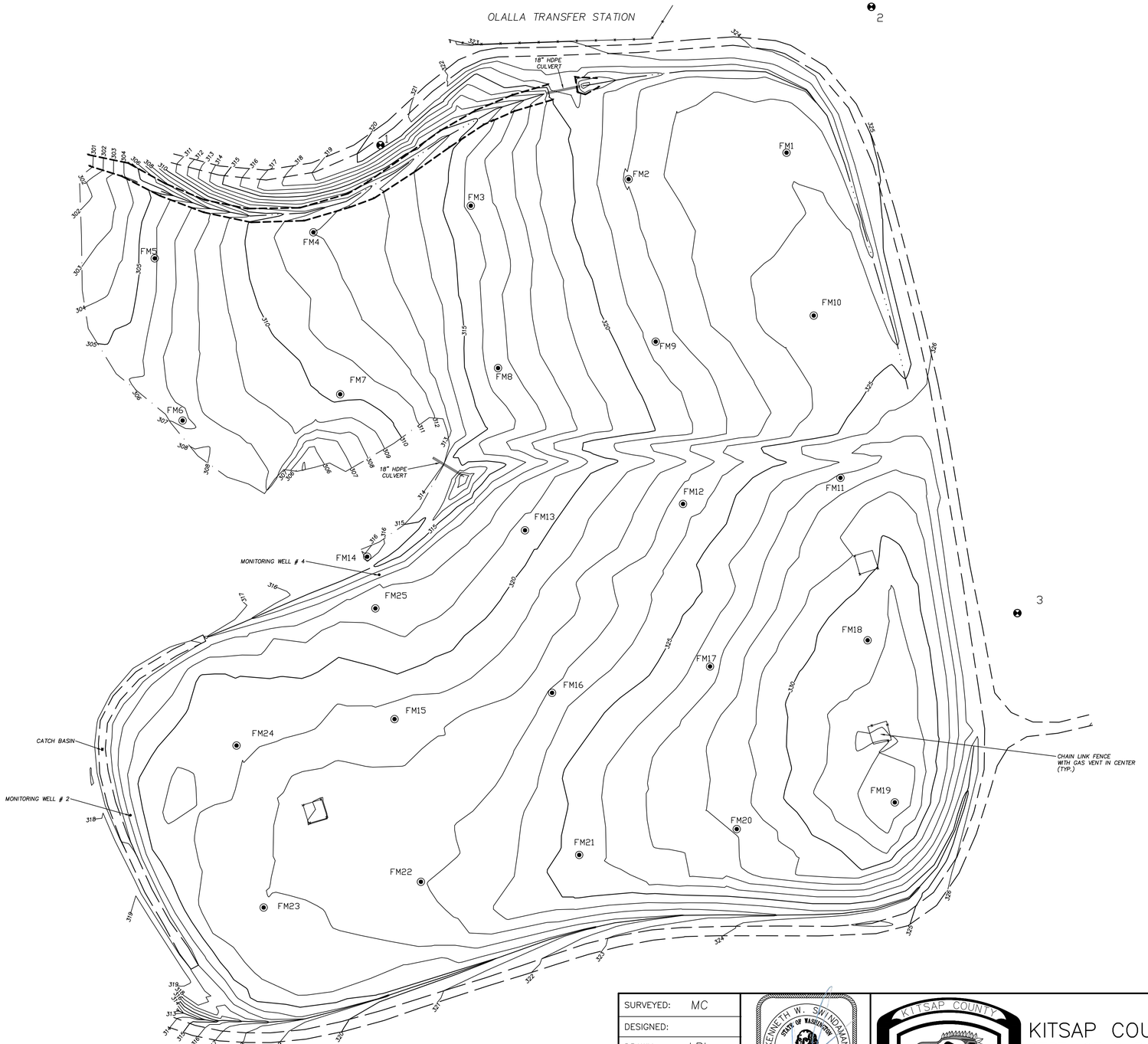
Page 2 of this document contains the 2019 and 2020 results. The differences from these two readings are also reported on the noted page.

If you have any questions, please let me know.

KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS
614 DIVISION STREET (MS-26), PORT ORCHARD, WA 98366-4699 | KITSAP1: 360.337.5777 | KITSAPGOV.COM

	July 2019 Observations			December 2020 Observations			Observation differences		
Point	NORTHING	EASTING	ELEVATION	NORTHING	EASTING	ELEVATION	▲ NORTHING	▲ EASTING	▲ ELEVATION
1	162217.713	1200261.524	323.86	162217.716	1200261.540	323.85	0.003	0.016	-0.01
2	162194.869	1200125.457	322.20	162194.875	1200125.479	322.19	0.005	0.022	-0.01
3	162172.002	1199989.476	316.39	162172.013	1199989.490	316.35	0.011	0.014	-0.04
4	162149.109	1199853.827	312.02	162149.119	1199853.830	312.01	0.010	0.003	-0.01
5	162126.693	1199717.100	305.96	162126.690	1199717.115	305.94	-0.003	0.015	-0.01
6	161986.959	1199741.122	306.60	161986.961	1199741.132	306.59	0.002	0.010	-0.01
7	162009.592	1199876.935	310.35	162009.622	1199876.949	310.35	0.030	0.014	0.00
8	162032.166	1200012.926	316.50	162032.173	1200012.943	316.49	0.007	0.017	0.00
9	162054.919	1200148.790	321.48	162054.924	1200148.808	321.48	0.005	0.018	0.00
10	162077.396	1200284.999	324.52	162077.385	1200285.012	324.51	-0.011	0.013	-0.01
11	161937.598	1200308.020	327.31	161937.588	1200308.026	327.29	-0.010	0.006	-0.01
12	161915.112	1200172.343	323.62	161915.118	1200172.359	323.61	0.006	0.016	-0.01
13	161892.409	1200036.159	319.45	161892.400	1200036.161	319.45	-0.009	0.002	0.00
14	161869.677	1199900.175	316.39	161869.693	1199900.189	316.39	0.016	0.014	0.00
15	161729.745	1199923.746	321.49	161729.748	1199923.745	321.47	0.003	-0.001	-0.02
16	161752.377	1200059.494	323.24	161752.390	1200059.480	323.23	0.013	-0.014	-0.01
17	161775.103	1200195.616	326.65	161775.128	1200195.614	326.63	0.025	-0.002	-0.02
18	161797.681	1200331.391	330.31	161797.688	1200331.406	330.29	0.006	0.015	-0.02
19	161658.009	1200354.822	332.84	161658.026	1200354.821	332.84	0.017	-0.001	0.00
20	161635.013	1200218.615	328.18	161635.030	1200218.635	328.16	0.017	0.020	-0.02
21	161612.728	1200082.860	325.43	161612.745	1200082.856	325.43	0.017	-0.004	0.00
22	161589.583	1199946.472	322.91	161589.613	1199946.475	322.89	0.030	0.003	-0.01
23	161567.450	1199810.977	321.93	161567.470	1199810.980	321.93	0.020	0.003	0.00
24	161706.987	1199787.599	320.91	161707.007	1199787.612	320.89	0.019	0.013	-0.02
25	161825.139	1199907.237	318.79	161825.158	1199907.256	318.77	0.019	0.018	-0.02

SECTION 1, TOWNSHIP 22, NORTH, RANGE 1 EAST, W.M.
KITSAP COUNTY, WASHINGTON



Survey Notes:

Base map prepared by Kitsap County Public Works Survey Department August 2019, from field survey data gathered July 2019.

Horizontal Datum: NAD83(2011) (2010 EPOCH) Washington State Plane Coordinate System-(North Zone) based upon two 1-hour GPS observations submitted to National Geodetic Survey using the OPUS solution service.

Vertical Datum: NAVD88 (GEOID12B) based upon two 1-hour GPS observations submitted to National Geodetic Survey using the OPUS solution service.

Monitoring point horizontal locations were derived from the averaging of two independent horizontal measurements from control points listed with a Leica MS 50 Total Station.

Monitoring point elevations were derived from differential leveling using a Trimble DiNi digital level. Control point number 1 was held as the site benchmark.

Contour Interval is one-foot and are computer generated from ground field topography gathered for this survey utilizing electronic data collection.

Subsurface utility lines were not marked and are not shown on base map. Utility surface features were located and shown.

Horizontal coordinates listed are US Survey feet, GRID.

CONTROL POINTS

Point	Northing	Easting	Elevation
1	162224.197	1199911.635	320.47
2	162343.388	1200334.668	324.30
3	161821.069	1200460.479	335.26

MONITORING POINTS

Point	Northing	Easting	Elevation
FM1	162217.713	1200261.524	323.86
FM2	162194.869	1200125.457	322.20
FM3	162172.002	1199989.476	316.39
FM4	162149.109	1199853.827	312.02
FM5	162126.693	1199717.100	305.96
FM6	161986.959	1199741.122	306.60
FM7	162009.592	1199876.935	310.35
FM8	162032.166	1200012.926	316.50
FM9	162054.919	1200148.790	321.48
FM10	162077.396	1200284.999	324.52
FM11	161937.598	1200308.020	327.31
FM12	161915.112	1200172.343	323.62
FM13	161892.409	1200036.159	319.45
FM14	161869.677	1199900.175	316.39
FM15	161729.745	1199923.746	321.49
FM16	161752.377	1200059.494	323.24
FM17	161775.103	1200195.616	326.65
FM18	161797.681	1200331.391	330.31
FM19	161658.009	1200354.822	332.84
FM20	161635.013	1200218.615	328.18
FM21	161612.728	1200082.860	325.43
FM22	161589.583	1199946.472	322.91
FM23	161567.450	1199810.977	321.93
FM24	161706.987	1199787.599	320.91
FM25	161825.139	1199907.237	318.79

LEGEND

- EDGE OF GRAVEL
- BOTTOM OF DITCH
- CHAIN LINK FENCE
- EDGE OF RIP-RAP
- MAJOR CONTOUR
- MINOR CONTOUR
- EDGE OF VEGETATION
- SURVEY CONTROL MONUMENT
- LANDFILL MONITORING MONUMENT

N

WASHINGTON STATE PLANE COORDINATE SYSTEM
NORTH ZONE - NAD83(1991) 2011(EPOCH 2010.0)

SCALE:
HORZ: 1"=50'
0 50' 100' 150'

SURVEYED:	MC
DESIGNED:	
DRAWN:	LRL
CHECKED:	KWS
CRP No.	
DATE:	01/28/2020

KENNETH W. SWINDAMAN
STATE OF WASHINGTON
34150
REGISTERED
PROFESSIONAL LAND SURVEYOR
01/28/2020

KITSAP COUNTY
DEPT. OF PUBLIC WORKS
614 DIVISION STREET MS-26
PORT ORCHARD, WA 98366
TEL:(360) 337-5777 FAX:(360) 337-4867

POST-CLOSURE SURVEY
OLALLA LANDFILL

SHEET 1 OF 2 SHEETS

SECTION 1, TOWNSHIP 22, NORTH, RANGE 1 EAST, W.M.
KITSAP COUNTY, WASHINGTON

Survey Notes:

Base map prepared by Kitsap County Public Works Survey Department August 2019, from field survey data gathered July 2019.

Horizontal Datum: NAD83(2011) (2010 EPOCH) Washington State Plane Coordinate System-(North Zone) based upon two 1-hour GPS observations submitted to National Geodetic Survey using the OPUS solution service.

Vertical Datum: NAVD88 (GEOID12B) based upon two 1-hour GPS observations submitted to National Geodetic Survey using the OPUS solution service.

Monitoring point horizontal locations were derived from the averaging of two independent horizontal measurements from control points listed with a Leica MS 50 Total Station.

Monitoring point elevations were derived from differential leveling using a Trimble DiNi digital level. Control point number 1 was held as the site benchmark.

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Horizontal coordinates listed are US Survey feet, GRID.

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FM9	162054.919	1200148.790	321.48
FM10	162077.396	1200284.999	324.52
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FM12	161915.112	1200172.343	323.62
FM13	161892.409	1200036.159	319.45
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FM15	161729.745	1199923.746	321.49
FM16	161752.377	1200059.494	323.24
FM17	161775.103	1200195.616	326.65
FM18	161797.681	1200331.391	330.31
FM19	161658.009	1200354.822	332.84
FM20	161635.013	1200218.615	328.18
FM21	161612.728	1200082.860	325.43
FM22	161589.583	1199946.472	322.91
FM23	161567.450	1199810.977	321.93
FM24	161706.987	1199787.599	320.91
FM25	161825.139	1199907.237	318.79

LEGEND

- EDGE OF GRAVEL
- BOTTOM OF DITCH
- CHAIN LINK FENCE
- EDGE OF RIP-RAP
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- EDGE OF VEGETATION
- SURVEY CONTROL MONUMENT
- LANDFILL MONITORING MONUMENT

N

WASHINGTON STATE PLANE COORDINATE SYSTEM NORTH ZONE - NAD83(1991) 2011(EPOCH 2010.0)

SCALE:
HORZ: 1"=50'
0 50' 100' 150'

SURVEYED:	MC
DESIGNED:	
DRAWN:	LRL
CHECKED:	KWS
CRP No.	
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KENNETH W. SWINDAMAN
STATE OF WASHINGTON
54130
REGISTERED
PROFESSIONAL LAND SURVEYOR
01/28/2020

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OLALLA LANDFILL TOPOGRAPHIC MAP

SHEET 2 OF 2 SHEETS

Appendix D:
Activities Planned for 2021

Activities Planned for 2021

The bulleted items below present a summary of the planned inspections, maintenance and engineering activities planned for 2021 by SWD at the Olalla Landfill.

- Quarterly monitoring, sampling, and reporting will continue in accordance with Section IV of the SWHP and the CAP. SWD will continue to contract with TRC (formerly EPI) for monitoring and sampling activities for 2021.

- TRC will continue to conduct the reporting and data analysis in accordance with Section IV of the SWHP and the CAP.

- Regular inspections of the Landfill and its engineered systems will be conducted.

- SWD will continue to support KPHD in their quarterly inspections of the Landfill.

- SWD will continue to work with other divisions in the KCPW to maintain the systems at the Landfill including maintenance of the cap, stormwater drainage systems and the stormwater detention pond.

Attachment 1:
2020 Quarterly Monitoring Field Data Sheets

ENVIRONMENTAL PARTNERS INC

1180 NW Maple Street, Suite 310 Issaquah, Washington 98027 ph 425.395.0010

Olalla Landfill Quarterly Monitoring Field Book March 2020

Olalla Landfill
Kitsap County, Washington
Project Number: 015334.0000.

Environmental Partners, Inc., a TRC Company
1180 NW Maple Street, Suite 310
Issaquah, Washington 98027
(425) 395-0010

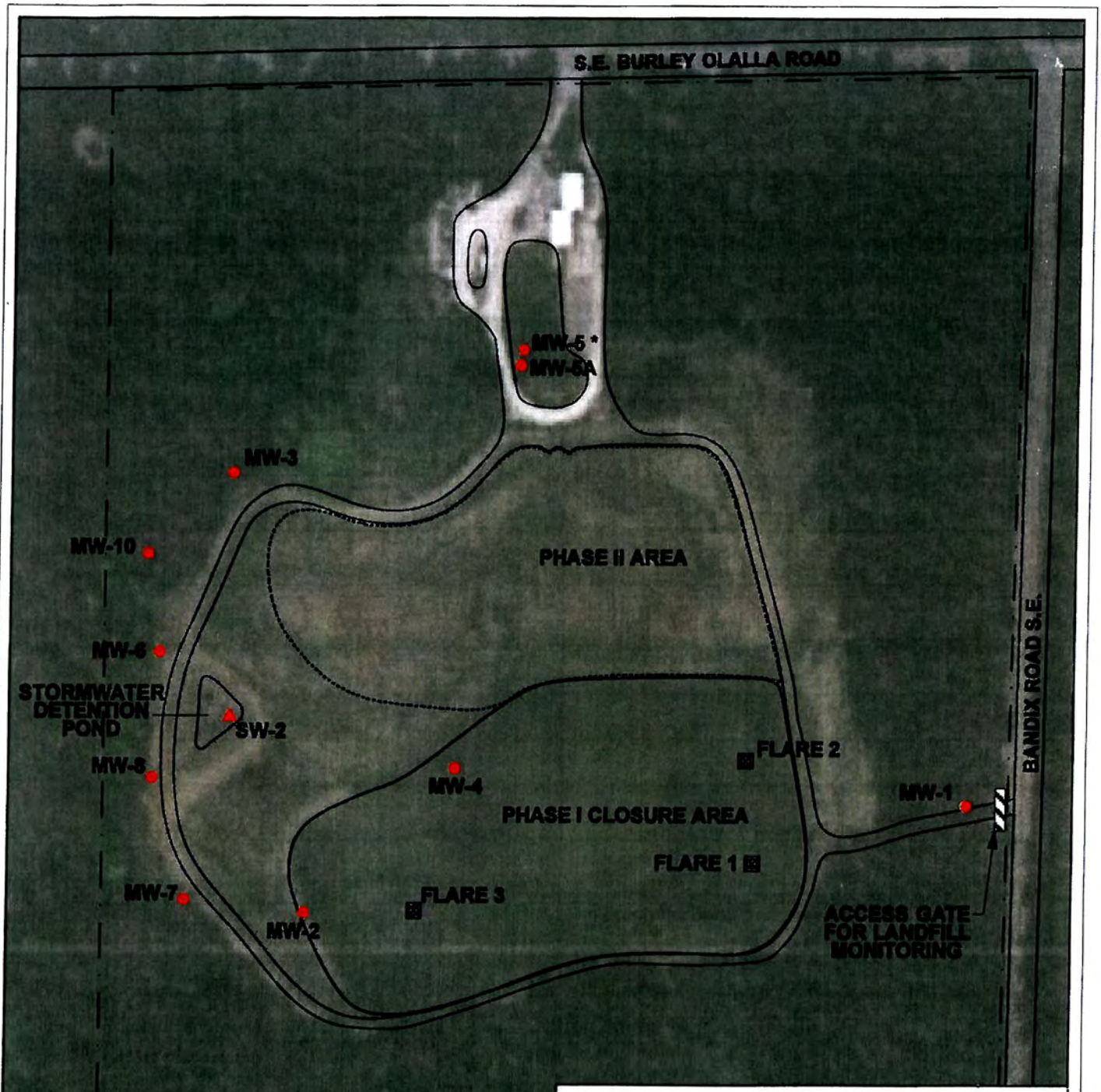

FIGURE 1-2

OLALLA LANDFILL
MONITORING WELL, FLARE, AND SURFACE WATER SAMPLING LOCATIONS
KITSAP COUNTY, WASHINGTON

PREPARED BY	ENVIRONMENTAL PARTNERS INC		
PROJECT	OLALLA LANDFILL QAPP/45403.0		
LOCATION	2850 SE BURLEY-OLALLA ROAD OLALLA, WASHINGTON		
PREPARED FOR	KITSAP COUNTY		
DATE 2/25/15	DRAWN BY ALW/CLM	REVIEWED BY ALW/CLM	PROJECT NUMBER 45403.0

Instrument Calibration Log - Olalla Landfill Monitoring

Calibrated By: E Caddy **Date:** 3/17/26

Meter Type	Manufacturer	Model Number	Manufacturer Serial #	Rental Co. Serial #	Time
pH					
pH Electrode					

Calibrated: _____ to 4.00 buffer _____ to 7.00 buffer _____ to 10.00 buffer at _____ °C

Slope = _____ Comments:

Meter Type	Manufacturer	Model Number	Manufacturer Serial #	Rental Co. Serial #	Time
Specific Cond.					

Specific Conductance: Calibrated _____ µS/cm to _____ µS/cm calibration sta

Electrical Conductivity: Calibrated _____ µS/cm to _____ µS/cm calibration standard at _____

Comments:

Meter Type	Manufacturer	Model Number	Manufacturer Serial #	Rental Co. Serial #	Time
ORP Meter					
ORP Electrode					

Electrode measured _____ millivolts at _____ °C using Zobell prepared on / /

Table value for Zobell solution at this temperature is _____ mV.

Meter Type	Manufacturer	Model Number	Manufacturer Serial #	Rental Co. Serial #	Time
Turbidity	Hanna	HI98703	GC046927		

Meter reads 13.2 NTUs using 15 NTUs stan Comments:

Meter reads 0 NTUs using 0.15 NTUs stan

Meter Type	Manufacturer	Model Number	Manufacturer Serial #	Rental Co. Serial #	Time
DO Meter					

Air-Calibration: Measured temperature _____ °C corresponds to _____ mg/L DO (from Table I)

Atmospheric pressure / elevation correction factor _____ (from Table II)

Corrected calibration value _____ mg/L DO (Table I value multiplied by Table II value)

Comments:

See Equipco Calibration Certificate for YSI and GEM 2000

ltiparameter Probe Calibration Log - Olalla Landfill Groundwater Monitor

Meter Type	Manufacturer	Model Number	Mfg. Serial#	Rental Co. Serial #	Date	Time

Calibrated to Autocal Solution

Calibration Solution Manufacturer _____ Lot Number _____ Exp. Date _____

pH = _____ Turbidity = _____ Temperature = _____

Conductivity = _____ Dissolved Oxygen = _____ ORP = _____

Comments:

Meter Type	Manufacturer	Model Number	Mfg. Serial#	Rental Co. Serial #	Date	Time

Calibrated to Autocal Solution

Calibration Solution Manufacturer _____ Lot Number _____ Exp. Date _____

pH = _____ Turbidity = _____ Temperature = _____

Conductivity = _____ Dissolved Oxygen = _____ ORP = _____

Comments:

Table 2-1: CAP and SWHP Monitoring Schedule

Olalla Landfill, Kitsap County, WA

Sample Location	First Quarter									Second and Third Quarters								Fourth Quarter											
	Water Level	Field Parameters	VOCs	T & D Metals	Total Coliform	Fecal Coliform	Geochemical	TOC / COD	Landfill Gas Parameters	Water Level	Field Parameters	VOCs	T & D Metals	Total Coliform	Geochemical	TOC / COD	Landfill Gas Parameters	Water Level	Field Parameters	VOCs	T & D Metals	Total Coliform	Fecal Coliform	Geochemical	TOC / COD	D. Metals - COC list	pH (field and lab)	Vinyl Chloride	Landfill Gas Parameters
MW-1	■	■	■	■	■		■	■		■	■	■	■	■	■	■		■	■	■	■	■		■	■				
MW-2	■									■								■											
MW-3	■	■	■	■	■		■	■		■	■	■	■	■	■	■		■	■	■	■	■		■	■				
MW-4	■									■								■											
MW-5	■									■								■											
MW-5A	■									■								■	■							■	■	■	
MW-6	■	■	■	■	■		■	■		■	■	■	■	■	■	■		■	■	■	■	■		■	■				
MW-7	■									■								■	■							■	■	■	
MW-8	■	■	■	■	■		■	■		■	■	■	■	■	■	■		■	■	■	■	■		■	■				
MW-10	■	■	■	■	■		■	■		■	■	■	■	■	■	■		■	■	■	■	■		■	■				
SW-2[1]		■				■	■												■				■	■					
Flares 1, 2, 3									■								■												■

Notes:

[1] Surface water sample from SW-2 collected during first quarter or fourth quarter, not both quarters.

Field Parameters = pH, specific conductance, temperature, ORP, and DO

VOCs = Volatile organic compounds by EPA Method 8260C standard list, vinyl chloride by selective ion monitoring (SIM)

T (total) Metals = calcium, potassium, sodium

D (dissolved) Metals = arsenic, barium, iron, manganese, zinc

Geochemical = alkalinity, ammonia, bicarbonate, carbonate, chloride, sulfate, nitrate, nitrite, pH

TOC / COD = total organic carbon / chemical oxygen demand

Dissolved Metals - COC list = arsenic, iron, manganese

Landfill gas parameters = methane (%LEL), oxygen(% vol), carbon dioxide (% vol), and gas pressure

Table 3-1: Monitoring Well Construction Data Summary

Olalla Landfill, Kitsap County, WA

Well	Total Well Depth (ft bgs)	Measuring Point Elevation (ft NGVD 29)	Surface Elevation (ft NGVD 29)	Screened Interval (ft bgs)	Northing	Easting	Measuring Point Description
MW-1	87	343.79	342.53	82-87	161858.133	560525.840	Pump wellhead
MW-2	73	323.25	318.95	68-73	161704.534	559572.839	Top of PVC casing
MW-3	55.5	296.95	294.95	50.5-55.5	162333.903	559463.060	Pump wellhead
MW-4	68	320.93	317.35	63-68	161911.192	559787.735	Top of PVC casing
MW-5	35.5	334.17	332.78	25-35	162510.115	559878.901	Top of PVC casing
MW-5A	98	332.53	331.43	86-96	162487.878	559875.742	Pump wellhead
MW-6	35	271.17	269.14	28-33	162077.699	559358.970	Pump wellhead
MW-7	33	280.43	278.21	21-31	161723.016	559398.979	Pump wellhead
MW-8	38	272.85	270.73	25-35	161897.813	559350.147	Pump wellhead
MW-10	47	279.21	276.84	37-47	162218.490	559340.899	Pump wellhead

Notes:
NGVD 29 = National Geodetic Vertical Datum (1929)
bgs = below ground surface

Depth to Water Measurement Field Data - Olalla Landfill Monitoring

Well	3/19/20 Time	Measuring Point Elevation (ft. NGVD[1])	Depth to Water (ft.)	Comments and Well Inspection[2] Notes
MW-1	~~1105~~	343.79	79.40	no changes
MW-2	15:13	323.25	64.98	
MW-3	1430	296.95	44.21	
MW-4	1519	320.93	62.02	
MW-5	14:21	334.17	9.30	
MW-5A	1418	332.53	75.62	
MW-6	1442	271.17	20.06	
MW-7	1452	280.43	24.92	
MW-8	1448	272.85	20.63	
MW-10	1434	279.21	29.11	

Notes:

[1]NGVD = National Geodetic Vertical Datum (1929)

[2]Observations regarding the condition of the well and surrounding area (e.g., protective casing, surface seal, cap, lock, bollards, soil conditions near the well such as depressions, ponded surface water, or other subsidence features, and any installed sampling equipment).

09

Groundwater Sampling Field Data

EPI Project No./Site: 015334/Kitsap County - Olalla Landfill

Station	MW-1 MW1	Date	17-Mar-20
Sample ID	Olalla-~~MW~~-3/20	Field Team: (Initials)	ELC
Field Conditions	Sunny & Cool		

Purge Information

Well Diameter (in.)	2"
Well Depth (ft.)	87
Initial Depth to Water (ft.)	74.4
Depth of Water Column	~~87~~ 12.6
1 Casing Volume	1.14
Controller Setting (Hz)	210

Purge Method: (Submersible pump) / Peristaltic Pump / Bladder Pump / Other: :

Start Time	0903
End Time	0927
Total Gallons Purged	14

Time	Gallons	pH	Conductivity mS/cm	NTU	DO mg/L	Temp. °C	ORP mV	Appearance
0906	3	6.40	0.112		~~6.96~~	10.6	278.2	Clear
0909	5.5	6.40	0.112		9.94	10.7	256.8	"
0912	~~8.7~~	6.40	0.112		9.93	10.8	243.4	"
0915	9	6.41	0.112		9.93	10.8	248.7	"
0918	10.5	6.41	0.112		9.93	10.8	200.1	"
0921	13	6.41	0.112	0.15	9.93	10.8	302.2	"

Sample Information

Sample Method(s): (Submersible pump) / Peristaltic pump / Bladder Pump / Other

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Volatiles and VC	0921	(5) 40-ml VOA	HCL, ice	
Total Coliform	0923	300-ml sterile AG or poly	Na2S2O3	
Geochemical Parameters		Sm OJ	ice	
Nitrate/Cl/Nitrite/SO4/pH		Lg OJ	ice	
TOC/COD/NH3		250-ml AG	H_2SO_4	
Total Metals		500-ml HDPE	HNO_3 to ph<2, ice	
Dissolved Metals		500-ml HDPE	HNO3 to ph<2, ice. **Field filte**	

End Time

Comments / Exceptions:

Groundwater Sampling Field Data

EPI Project No./Site 015334/Kitsap County - Olalla Landfill

Station	MW-3	Date	17-Mar-20
Sample ID	Olalla - MW3 - 3/20	Field Team: (Initials)	ELC
Field Conditions	and Duplicate Olalla-MW9-3/20 Sunny 40°F		

Purge Information

Well Diameter (in.)	2"
Well Depth (ft.)	55.85
Initial Depth to Water (ft.)	44.21
Depth of Water Column	11.64
1 Casing Volume	1.69
Controller Setting (Hz)	143

Purge Method: (Submersible pump) / Peristaltic Pump / Bladder Pump / Other: :

Start Time	10:18
End Time	1050
Total Gallons Purged	12.5

Time	Gallons	pH	Conductivity	NTU	DO	Temp.	ORP	Appearance
10:22	2	6.33	0.306		1.31	11.4	325.5	clear
10:25	3	6.34	0.307		1.27	11.6	322.5	"
10:28	4.5	6.34	0.307		1.22	11.6	321.2	"
10:31	6	6.34	0.308		1.22	11.6	319.3	"
10:34	7	6.34	0.308		1.21	11.6	317.4	"
10:37	8.5	6.35	0.307		1.17	11.6	315.4	"
10:40	10	6.36	0.307		1.14	11.7	313.4	"
10:43	11.5	6.35	0.308	2.25	1.17	11.6	310.9	"

Sample Information

Sample Method(s) : (Submersible pump) / Peristaltic pump / Bladder Pump / Other

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Volatiles and VC	10:45	(5) 40-ml VOA	HCL, ice	
Total Coliform		300-ml sterile AG or poly	Na2S2O3	
Geochemical Parameters		Sm OJ	ice	
Nitrate/Cl/Nitrite/SO4/pH		Lg OJ	ice	
TOC/COD/NH3		250-ml AG	H_2SO_4	
Total Metals		500-ml HDPE	HNO_3 to ph<2, ice	
Dissolved Metals		500-ml HDPE	HNO3 to ph<2, ice. **Field filte**	

End Time

Comments / Exceptions:

Duplicate Olalla-MW9-3/20
- Yuck debris in water

Groundwater Sampling Field Data

EPI Project No./Site 015334/Kitsap County - Olalla Landfill

Station	MW-10	Date	17-Mar-20
Sample ID	Olalla-MW10-3/20	Field Team: (Initials)	ELC
Field Conditions	Partly Cloudy, 42° F		

Purge Information

Well Diameter (in.)	2"
Well Depth (ft.)	47
Initial Depth to Water (ft.)	29.11
Depth of Water Column	17.84
1 Casing Volume	2.68
Controller Setting (Hz)	123

Purge Method : (Submersible pump) / Peristaltic Pump / Bladder Pump / Other: :

Start Time	11:29
End Time	1203
Total Gallons Purged	11.5

Time	Gallons	pH	Conductivity	NTU	DO	Temp.	ORP	Appearance
1132	1.5	6.74	0.411		0.81	10.8	253.8	clear
1135	2.5	6.75	0.410		0.70	11.0	257.8	"
1138	4.5	6.76	0.409		0.65	11.1	232.2	"
1141	6	6.75	0.411		0.62	11.1	215.3	"
1144	7.5	6.76	0.410		0.60	11.1	204.5	"
1147	9	6.76	0.409		0.59	11.1	196.4	"
1200	10.5	6.76	0.409	1.3	0.55	11.1	192.2	"

Sample Information

Sample Method(s) (Submersible pump) / Peristaltic pump / Bladder Pump / Other

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Volatiles and VC	1202	(5) 40-ml VOA	HCL, ice	
Total Coliform		300-ml sterile AG or poly	Na2S2O3	
Geochemical Parameters		Sm OJ	ice	
Nitrate/Cl/Nitrite/SO4/pH		Lg OJ	ice	
TOC/COD/NH3		250-ml AG	H_2SO_4	
Total Metals		500-ml HDPE	HNO_3 to ph<2, ice	
Dissolved Metals		500-ml HDPE	HNO3 to ph<2, ice. **Field filte**	

End Time

Comments / Exceptions:

Groundwater Sampling Field Data

EPI Project No./Site 015334/Kitsap County - Olalla Landfill

Station	MW-6	Date	17-Mar-20
Sample ID	Olalla-MW6-3/20	Field Team: (Initials)	ELC
Field Conditions	partly cloudy, 48°F		

Purge Information

Well Diameter (in.)	2"
Well Depth (ft.)	35
Initial Depth to Water (ft.)	20.06
Depth of Water Column	14.94
1 Casing Volume	2.24
Controller Setting (Hz)	107.8

Purge Method: (Submersible pump) / Peristaltic Pump / Bladder Pump / Other: :

Start Time	1308
End Time	1334
Total Gallons Purged	15.5

Time	Gallons	pH	Conductivity	NTU	DO	Temp.	ORP	Appearance
1311	1.5	6.85	0.100		0.81	11.2	175.4	slightly cloudy w/sand
1314	4	6.82	0.104		0.70	11.3	153.8	"
1317	6	6.80	0.107		0.65	11.3	136.9	" less sand
1320	8	6.80	0.108		0.63	11.3	130.0	clear
1323	10	6.74	0.109		0.62	11.3	124.5	"
1326	12	6.78	0.110		0.62	11.3	120.1	"
1329	14	6.78	0.111	6.3	0.60	11.3	117.9	"

Sample Information

Sample Method(s) : (Submersible pump) / Peristaltic pump / Bladder Pump / Other

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Volatiles and VC	1332	(5) 40-ml VOA	HCL, ice	
Total Coliform		300-ml sterile AG or poly	Na2S2O3	
Geochemical Parameters		Sm OJ	ice	
Nitrate/Cl/Nitrite/SO4/pH		Lg OJ	ice	
TOC/COD/NH3		250-ml AG	H_2SO_4	
Total Metals		500-ml HDPE	HNO_3 to ph<2, ice	
Dissolved Metals		500-ml HDPE	HNO3 to ph<2, ice. **Field filte**	

End Time

Comments / Exceptions:

Groundwater Sampling Field Data

EPI Project No./Site 015334/Kitsap County - Olalla Landfill

Station	MW-8	Date	17-Mar-20
Sample ID	Olalla-MW8-3/20	Field Team: (Initials)	ELC
Field Conditions	Partly Cloudy, 48°F		

Purge Information

Well Diameter (in.)	2"
Well Depth (ft.)	38
Initial Depth to Water (ft.)	20.63
Depth of Water Column	17.37
1 Casing Volume	2.60
Controller Setting (Hz)	105.7

Purge Method : (Submersible pump) / Peristaltic Pump / Bladder Pump / Other: :

Start Time	1354
End Time	1421
Total Gallons Purged	9.5

Time	Gallons	pH	Conductivity	NTU	DO	Temp.	ORP	Appearance
1402	1.5	6.57	0.267		1.59	10.6	187.1	Slightly cloudy
1405	3	6.60	0.251		1.45	10.7	165.2	"
1408	4.5	6.61	0.241		2.23	10.7	158.3	cloudy
1411	6	6.60	0.231		2.60	10.7	157.9	"
1414	7.25	6.60	0.231		2.45	10.7	154.7	"
1417	8.5	6.60	0.229	9.22	2.48	10.7	154.5	"

Sample Information

Sample Method(s) : (Submersible pump) / Peristaltic pump / Bladder Pump / Other

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Volatiles and VC	1419	(5) 40-ml VOA	HCL, ice	
Total Coliform		300-ml sterile AG or poly	Na2S2O3	
Geochemical Parameters		Sm OJ	ice	
Nitrate/Cl/Nitrite/SO4/pH		Lg OJ	ice	
TOC/COD/NH3		250-ml AG	H_2SO_4	
Total Metals		500-ml HDPE	HNO_3 to ph<2, ice	
Dissolved Metals		500-ml HDPE	HNO3 to ph<2, ice. **Field filte**	

End Time

Comments / Exceptions:

Landfill Gas Monitoring Field Data - Olalla Landfill Monitoring

Instrument Used:	Gem 2000	Date and Time:	3/17/20 1450
Ambient Temperature:	51°	Field Team:	~~[illegible]~~ E. Caddell
Field Conditions:	Partly Sunny & w/ Slight breeze		

Landfill Gas Data

Flare #	Time	Methane (% vol.)	% LEL	Oxygen (% vol.)	Carbon Dioxide (% vol.)	Temperature (°C)	Gas Pressure ("H_2O)
3	1452-1500	11.9	100	~~5.0~~ 0.2	12.8		0.02
1	1505-1518	1.4	27-34	1.4	10.6		0.01
2	1520	3.4	80-53	1.9	11.2		0.03

Comments / Inspection Results[1]

[1]Inspect the following: lock and gate operation, tightness of bolts and clamps, differential settlement, valve operation, debris or breaks in hose barb.

EQUIPCO RENTALS

YSI ProDSS RENTAL
CALIBRATION CERTIFICATE

SERVICE TECHNICIAN: BM DATE: 3/16/20

RENTAL CUSTOMER: TRC

INSTRUMENT INFORMATION

RENTAL I.D. NUMBER: YSIPRODSS.20

SERIAL NUMBER: 16J104727

CALIBRATION INFORMATION

PARAMETER:	STANDARD:	PASS ( )	LOT #
1. CONDUCTIVITY	1,000 µMhos	X	55029
2. pH ZERO	pH 7	X	031274
pH SLOPE	pH 4	X	031273
pH SLOPE	pH 10	X	031275
3. DISSOLVED OXYGEN	Air Calibration Barometric pressure = 760mmHg	X	N/A
~~4. TURBIDITY ZERO~~	~~0.0 NTU's~~		~~N/A~~
~~TURBIDITY SPAN~~	~~20 NTU's~~		
5. REDOX (ORP)	231mV (YSI Zobell solution)	X	12179

2525 151st Pl. NE Redmond WA, 98052 Phone (888) 234-5678 Fax (925) 305-1303

EQUIPCO

CES LANDTECH MODEL: GEM 2000
CALIBRATION CERTIFICATE

SERVICE TECHNICIAN: VM DATE: 3/16/20

INSTRUMENT INFORMATION

RENTAL ID: GEM2000. 11

SERIAL NUMBER: GM07638/04

CALIBRATION INFORMATION

1..CALIBRATION GAS: 35 % CO_2 LOT #: 573162

GAS RESPONSE: 35 % CO_2 ±2%

2. CALIBRATION GAS: 50 % Vol. Methane LOT #: 573162

GAS RESPONSE: 50 % Vol. Methane ±2%

OXYGEN RESPONSE IN FRESH AIR ENVIRONMENT: 20.9% ✓

OXYGEN DOWNSCALE RESPONSE CHECKED: 0% WITH 99.9% Nitrogen ✓

THIS INSTRUMENT HAS BEEN CALIBRATED TO STANDARDS SET FORTH BY THE MANUFACTURER

2689 151st Pl NE, Redmond, WA 98052 Phone (888)234-5678 Fax (925)305-1303

Chain of Custody Record & Laboratory Analysis Request

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

ARI Assigned Number:	Turn-around Requested: Standard
ARI Client Company: TRC Companies	Phone: 425-~~241-8170~~ 395-0016
Client Contact: Doug Kunkel	
Client Project Name: Olalla Landfill	
Client Project #: 015334.0000.	Samplers: Eric Caddey
Page: 1 of 1	
Date: 3/18/20	Ice Present? Yes
No. of Coolers: 1	Cooler Temps: 2.6°C

Sample ID	Date	Time	Matrix	No. Containers	VOCs	Vinyl Chloride by SIM	Dissolved Metals	Total Metals	Nitrate, Nitrite, Chl, Sulfate, Carb-bicarb	alkalinity, pH, ammonia	COD, TOC	Total coliform	Notes/Comments
Olalla-MW1-3/20	3/17/20	0923	water	9	X	X	X	X	X	X	X	X	See email for full analyte list. Dissolved metals were field filtered
Olalla-MW3-3/20	↓	10:45	↓	↓	X	X	X	X	X	X	X	X	
Olalla-MW10-3/20	↓	12:02	↓	↓	X	X	X	X	X	X	X	X	
Olalla-MW6-3/20	↓	1332	↓	↓	X	X	X	X	X	X	X	X	
Olalla-MW8-3/20	↓	1419	↓	↓	X	X	X	X	X	X	X	X	
Olalla-MW9-3/20	↓	—	↓	↓	X	X	X	X	X	X	X	X	
Trip Blank	↓	—	↓	2	X								

Comments/Special Instructions	Relinquished by	Received by	Relinquished by	Received by
P.O. # 150973	(Signature): [signature]	(Signature): [signature]	(Signature):	(Signature):
	Printed Name: Eric Caddey	Printed Name: Jacob Waite	Printed Name:	Printed Name:
	Company: TRC Companies	Company: ARI	Company:	Company:
	Date & Time: 3/18/20 0805.	Date & Time: 03/18/2020 0805	Date & Time:	Date & Time:

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: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

ENVIRONMENTAL PARTNERS INC

1180 NW Maple Street, Suite 310 Issaquah, Washington 98027 ph 425.395.0010

Olalla Landfill Quarterly Monitoring Field Book June 2020

Olalla Landfill
Kitsap County, Washington
Project Number: 015334.0000.

Environmental Partners, Inc., a TRC Company
1180 NW Maple Street, Suite 310
Issaquah, Washington 98027
(425) 395-0010

Pump Converter Hz

Table 3-1: Monitoring Well Construction Data Summary

Olalla Landfill, Kitsap County, WA

	Well	Total Well Depth (ft bgs)	Measuring Point Elevation (ft NGVD 29)	Surface Elevation (ft NGVD 29)	Screened Interval (ft bgs)	Northing	Easting	Measuring Point Description
210	MW-1	87	343.79	342.53	82-87	161858.133	560525.840	Pump wellhead
	MW-2	73	323.25	318.95	68-73	161704.534	559572.839	Top of PVC casing
148	MW-3	55.5	296.95	294.95	50.5-55.5	162333.903	559463.060	Pump wellhead
	MW-4	68	320.93	317.35	63-68	161911.192	559787.735	Top of PVC casing
	MW-5	35.5	334.17	332.78	25-35	162510.115	559878.901	Top of PVC casing
201	MW-5A	98	332.53	331.43	86-96	162487.878	559875.742	Pump wellhead
109	MW-6	35	271.17	269.14	28-33	162077.699	559358.970	Pump wellhead
122	MW-7	33	280.43	278.21	21-31	161723.016	559398.979	Pump wellhead
106	MW-8	38	272.85	270.73	25-35	161897.813	559350.147	Pump wellhead
123	MW-10	47	279.21	276.84	37-47	162218.490	559340.899	Pump wellhead

Notes:
NGVD 29 = National Geodetic Vertical Datum (1929)
bgs = below ground surface

June → Dup on MW-6 but call it MW-17

Sept → Dup on MW-8 but call it MW-12

Dec → Dup on MW-10 but call it MW-13

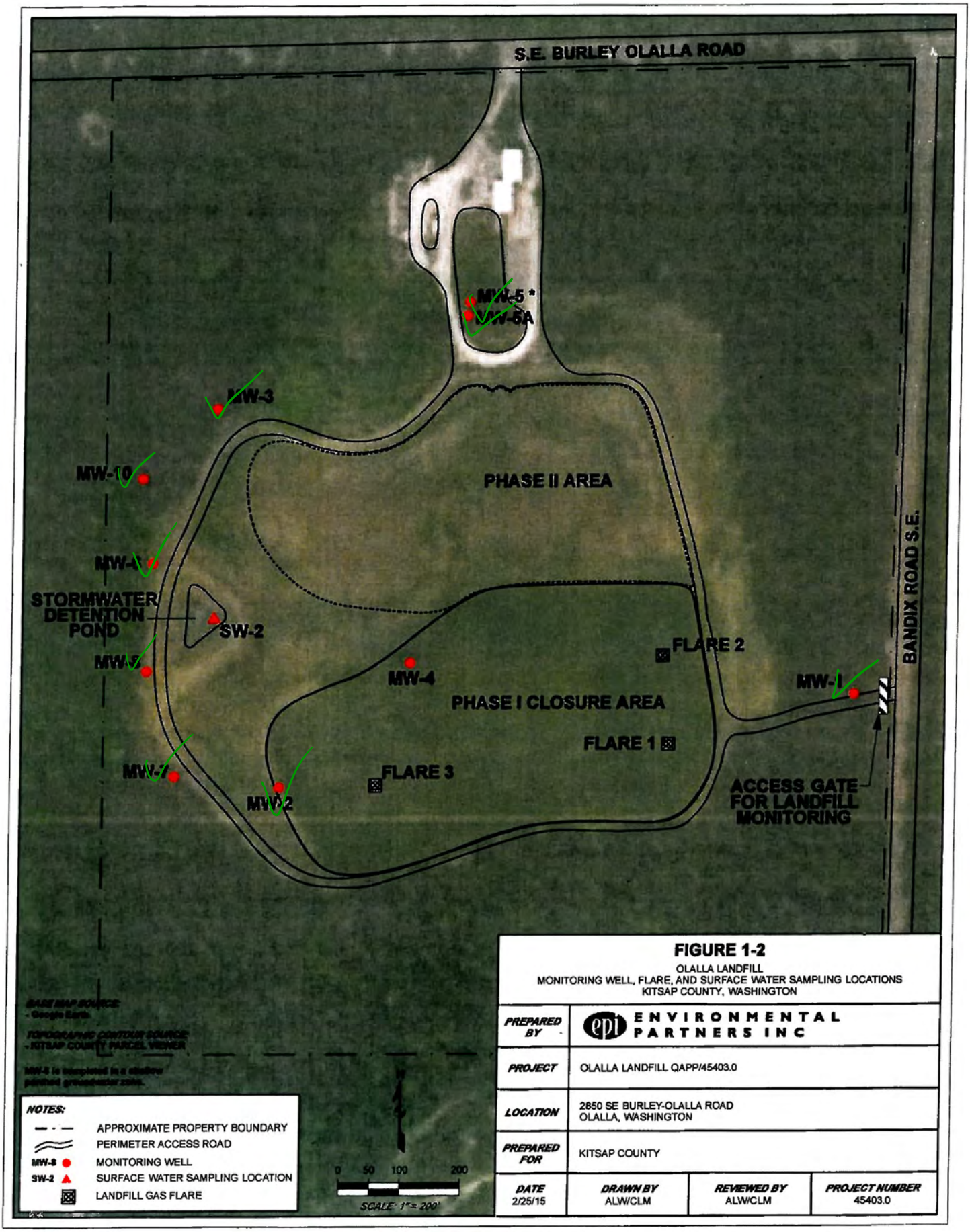

FIGURE 1-2

OLALLA LANDFILL
MONITORING WELL, FLARE, AND SURFACE WATER SAMPLING LOCATIONS
KITSAP COUNTY, WASHINGTON

PREPARED BY	epi ENVIRONMENTAL PARTNERS INC		
PROJECT	OLALLA LANDFILL QAPP/45403.0		
LOCATION	2850 SE BURLEY-OLALLA ROAD OLALLA, WASHINGTON		
PREPARED FOR	KITSAP COUNTY		
DATE 2/25/15	DRAWN BY ALW/CLM	REVIEWED BY ALW/CLM	PROJECT NUMBER 45403.0

Table 2-1: CAP and SWHP Monitoring Schedule
Olalla Landfill, Kitsap County, WA

Sample Location	First Quarter									Second and Third Quarters								Fourth Quarter											
	Water Level	Field Parameters	VOCs	T & D Metals	Total Coliform	Fecal Coliform	Geochemical	TOC / COD	Landfill Gas Parameters	Water Level	Field Parameters	VOCs	T & D Metals	Total Coliform	Geochemical	TOC / COD	Landfill Gas Parameters	Water Level	Field Parameters	VOCs	T & D Metals	Total Coliform	Fecal Coliform	Geochemical	TOC / COD	D. Metals - COC list	pH (field and lab)	Vinyl Chloride	Landfill Gas Parameters
MW-1	■	■	■	■	■		■	■		■	■	■	■	■	■	■		■	■	■	■	■		■	■				
MW-2	■									■								■											
MW-3	■	■	■	■	■		■	■		■	■	■	■	■	■	■		■	■	■	■	■		■	■				
MW-4	■									■								■											
MW-5	■									■								■											
MW-5A	■									■								■	■							■	■	■	
MW-6	■	■	■	■	■		■	■		■	■	■	■	■	■	■		■	■	■	■	■		■	■				
MW-7	■									■								■	■							■	■	■	
MW-8	■	■	■	■	■		■	■		■	■	■	■	■	■	■		■	■	■	■	■		■	■				
MW-10	■	■	■	■	■		■	■		■	■	■	■	■	■	■		■	■	■	■	■		■	■				
SW-2[1]		■				■	■												■				■	■					
Flares 1, 2, 3									■								■												■

Notes:

[1] Surface water sample from SW-2 collected during first quarter or fourth quarter, not both quarters.

Field Parameters = pH, specific conductance, temperature, ORP, and DO

VOCs = Volatile organic compounds by EPA Method 8260C standard list, vinyl chloride by selective ion monitoring (SIM)

T (total) Metals = calcium, potassium, sodium

D (dissolved) Metals = arsenic, barium, iron, manganese, zinc

Geochemical = alkalinity, ammonia, bicarbonate, carbonate, chloride, sulfate, nitrate, nitrite, pH

TOC / COD = total organic carbon / chemical oxygen demand

Dissolved Metals - COC list = arsenic, iron, manganese

Landfill gas parameters = methane (%LEL), oxygen(% vol), carbon dioxide (% vol), and gas pressure

tiparameter Probe Calibration Log - Olalla Landfill Groundwater Monitoring

Meter Type	Manufacturer	Model Number	Mfg. Serial#	Rental Co. Serial #	Date	Time

Calibrated to Autocal Solution

Calibration Solution Manufacturer _____ Lot Number _____ Exp. Date _____

pH = _____ Turbidity = _____ Temperature = _____

Conductivity = _____ Dissolved Oxygen = _____ ORP = _____

Comments:

* See calibration cert. from Equipco.

Meter Type	Manufacturer	Model Number	Mfg. Serial#	Rental Co. Serial #	Date	Time

Calibrated to Autocal Solution

Calibration Solution Manufacturer _____ Lot Number _____ Exp. Date _____

pH = _____ Turbidity = _____ Temperature = _____

Conductivity = _____ Dissolved Oxygen = _____ ORP = _____

Comments:

Instrument Calibration Log - Olalla Landfill Monitoring

Calibrated By: _____ **Date:** _____

Meter Type	Manufacturer	Model Number	Manufacturer Serial #	Rental Co. Serial #	Time
pH					
pH Electrode					

Calibrated: _____ to 4.00 buffer _____ to 7.00 buffer _____ to 10.00 buffer at _____ °C

Slope = _____ Comments:

Meter Type	Manufacturer	Model Number	Manufacturer Serial #	Rental Co. Serial #	Time
Specific Cond.					

Specific Conductance: Calibrated _____ µS/cm to _____ µS/cm calibration sta

Electrical Conductivity: Calibrated _____ µS/cm to _____ µS/cm calibration standard at _____

Comments:

Meter Type	Manufacturer	Model Number	Manufacturer Serial #	Rental Co. Serial #	Time
ORP Meter					
ORP Electrode					

Electrode measured _____ millivolts at _____ °C using Zobell prepared on / /

Table value for Zobell solution at this temperature is _____ mV.

Meter Type	Manufacturer	Model Number	Manufacturer Serial #	Rental Co. Serial #	Time
Turbidity					

Meter reads _____ NTUs using _____ NTUs star Comments:

Meter reads _____ NTUs using _____ NTUs star

Meter Type	Manufacturer	Model Number	Manufacturer Serial #	Rental Co. Serial #	Time
DO Meter					

Air-Calibration: Measured temperature _____ °C corresponds to _____ mg/L DO (from Table I)

Atmospheric pressure / elevation correction factor _____ (from Table II)

Corrected calibration value _____ mg/L DO (Table I value multiplied by Table II value)

Comments:

Depth to Water Measurement Field Data - Olalla Landfill Monitoring

Well	Time	Measuring Point Elevation (ft. NGVD[1])	Depth to Water (ft.)	Comments and Well Inspection[2] Notes
MW-1	0830	343.79	78.65	
MW-2	1325	323.25	65.74	
MW-3	0947	296.95	45.43	
MW-4	1331	320.93	62.77	
MW-5	0927	334.17	10.51	
MW-5A	0930	332.53	76.14	
MW-6	1155	271.17	21.15	
MW-7	1318	280.43	25.91	
MW-8	1237	272.85	21.63	
MW-10	1027	279.21	30.28	

Notes:

[1]NGVD = National Geodetic Vertical Datum (1929)

[2]Observations regarding the condition of the well and surrounding area (e.g., protective casing, surface seal, cap, lock, bollards, soil conditions near the well such as depressions, ponded surface water, or other subsidence features, and any installed sampling equipment).

Groundwater Sampling Field Data - Olalla Landfill Monitoring

Station	MW-1	Date	6/17/2020
Sample: ID	Olalla-MW-1-6/20	Field Team: (Initials)	EC + W.W
Field Conditions	Overcast ~60°F		

Low-Flow Purge Information

Well Diameter (in.)	2"
Well Depth (ft.)	87'
Initial Depth to Water (ft.)	78.65
Depth of Water Column	8.35
1 Casing Volume (gal.)	1.4
Controller setting (Hz)	209

Purge Method : (Submersible pump) Other: :

Start Time	0847
End Time	0910
Total Gallons Purged	17

Time	Gallons	pH	Conductivity	NTU	DO	Temp.	ORP	Appearance
0848	0.4	8.38	0.112	—	9.71	9.7	227.1	clear
0851	2.0	7.40	0.114	—	9.74	10.4	238.7	" "
0854	4.3	6.75	0.114	—	9.74	10.6	245.2	" "
0857	6.5	6.55	0.114	—	9.73	10.6	254.5	" "
0900	9.4	6.52	0.114	—	9.72	10.6	258.5	" "
0903	14.5	6.50	0.114	1.11	9.72	10.6	261.9	" "
					NFE			

Sample Information

Sample Method(s) : Submersible pump / Peristaltic pump / Bladder Pump / Other

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Volatiles and VC	0905	(3) 40-mL VOA	HCl, cool to <4°C	
Total Coliform	0905	300-mL sterile AG or poly	Cool to <4°C	
Geochemical Parameters	0905	500-mL HDPE	Cool to <4°C	
Nitrate/Nitrite	0905	500-mL HDPE	Cool to <4°C	
TOC	0905	250-mL AG	~~H_2SO_4 to pH <2, cool to~~	
COD	0905	250-mL HDPE	~~H_2SO_4 to pH <2, cool to~~	
Total Metals	0905	250-mL HDPE	~~HNO_3 to pH <2, cool to~~ <4°C	
Dissolved Metals	0905	250-mL HDPE	Field filter, HNO_3 to pH <2, cool to <4°C	

Sample End Time 0910

Comments / Exceptions:

Notes: Where multiple visits are required to complete sampling, parameters are to be checked prior to sampling for each visit. Enter data under field comments.

Groundwater Sampling Field Data - Olalla Landfill Monitoring

Station	MW-3	Date	6/17/2020
Sample: ID	Olalla-MW-3-6/17/20	Field Team: (Initials)	EC + W.W.
Field Conditions	Overcast ~60°F		

Low-Flow Purge Information

Well Diameter (in.)	2"
Well Depth (ft.)	55.5
Initial Depth to Water (ft.)	45.43
Depth of Water Column	10.07
1 Casing Volume (gal.)	1.6
Controller setting (Hz)	148

Purge Method : (Submersible pump) Other:

Start Time	0957
End Time	1010
Total Gallons Purged	9.0

Time	Gallons	pH	Conductivity	NTU	DO	Temp.	ORP	Appearance
0952	0.2	6.47	0.495	—	13.6	10.5	307.7	clear
0955	1.2	6.22	0.475	—	0.42	11.1	303.1	" "
0958	3.6	6.21	0.459	—	0.18	11.5	294.9	" "
1001	5.0	6.22	0.451	—	0.10	11.5	287.8	" "
1004	6.8	6.22	0.449	0.82	0.07	11.5	283.7	" "
						NFE		

Sample Information

Sample Method(s) : (Submersible pump) / Peristaltic pump / Bladder Pump / Other

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Volatiles and VC	1006	(3) 40-mL VOA	HCl, cool to <4°C	
Total Coliform		300-mL sterile AG or poly	Cool to <4°C	
Geochemical Parameters		500-mL HDPE	Cool to <4°C	
Nitrate/Nitrite		500-mL HDPE	Cool to <4°C	
TOC		250-mL AG	~~H_2SO_4 to pH <2, cool to~~	
COD		250-mL HDPE	~~H_2SO_4 to pH <2, cool to~~	
Total Metals		250-mL HDPE	~~HNO_3 to pH <2, cool to~~ <4°C	
Dissolved Metals		250-mL HDPE	Field filter, HNO_3 to pH <2, cool to <4°C	

Sample End Time: 1010

Comments / Exceptions:

Initially, some black floating particulates. Then cleared up.

Notes: Where multiple visits are required to complete sampling, parameters are to be checked prior to sampling for each visit. Enter data under field comments.

Groundwater Sampling Field Data - Olalla Landfill Monitoring

Station	MW-10	Date	6/17/2020
Sample: ID	0616-MW-10-6/20	Field Team: (Initials)	EC + W. W.
Field Conditions	Partly cloudy ~60°F		

Low-Flow Purge Information

Well Diameter (in.)	2"
Well Depth (ft.)	47
Initial Depth to Water (ft.)	30.28
Depth of Water Column	16.72
1 Casing Volume (gal.)	2.7
Controller setting (Hz)	123

Purge Method : (Submersible pump)
Other: :

Start Time	1034
End Time	1100
Total Gallons Purged	7.0

Time	Gallons	pH	Conductivity	NTU	DO	Temp.	ORP	Appearance
1035	0.2	6.61	0.512	—	0.67	10.1	263.1	Clear
1038	0.9	6.67	0.497	—	0.16	10.6	209.0	" "
1041	1.8	6.67	0.489	—	0.09	11.1	182.9	" "
1044	3.5	6.67	0.488	—	0.03	11.2	160.0	" "
1047	4.2	6.67	0.490	—	-0.01	11.2	146.8	" "
1050	4.9	6.67	0.492	—	-0.02	11.2	140.7	" "
1053	5.5	6.68	0.489	2.08	-0.04	11.2	135.7	" "

NFE

Sample Information

Sample Method(s) : (Submersible pump) / Peristaltic pump / Bladder Pump / Other

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Volatiles and VC	1055	(3) 40-mL VOA	HCl, cool to <4°C	
Total Coliform		300-mL sterile AG or poly	Cool to <4°C	
Geochemical Parameters		500-mL HDPE	Cool to <4°C	
Nitrate/Nitrite		500-mL HDPE	Cool to <4°C	
TOC		250-mL AG	~~H_2SO_4 to pH <2, cool to <4°C~~	
COD		250-mL HDPE	~~H_2SO_4 to pH <2, cool to <4°C~~	
Total Metals		250-mL HDPE	~~HNO_3 to pH <2, cool to <4°C~~	
Dissolved Metals		250-mL HDPE	Field filter, HNO_3 to pH <2, cool to <4°C	

Sample End Time: 1100

Comments / Exceptions:

Notes: Where multiple visits are required to complete sampling, parameters are to be checked prior to sampling for each visit. Enter data under field comments.

Groundwater Sampling Field Data - Olalla Landfill Monitoring

Station	MW-6	Date	6/17/2020
Sample: ID	Olalla-MW-6-6/20	Field Team: (Initials)	EC + W.W.
Field Conditions	Sunny ~70°F		

Low-Flow Purge Information

Well Diameter (in.)	2"
Well Depth (ft.)	35'
Initial Depth to Water (ft.)	21.15
Depth of Water Column	13.85
1 Casing Volume (gal.)	2.7
Controller setting (Hz)	109

Purge Method : (Submersible pump)
Other: :

Start Time	1201
End Time	1230
Total Gallons Purged	8.0

Time	Gallons	pH	Conductivity	NTU	DO	Temp.	ORP	Appearance
1202	0.3	7.16	0.295	—	1.77	10.5	140.3	Clear
1205	1.5	6.79	0.321	—	0.50	11.1	106.9	" "
1208	2.7	6.73	0.318	—	0.28	11.3	90.6	" "
1211	3.9	6.71	0.318	—	0.18	11.3	79.6	" "
1214	4.6	6.71	0.319	—	0.14	11.4	74.4	" "
1217	5.5	6.71	0.321	3.18	-0.01	11.5	69.9	" "

Sample Information

Sample Method(s) : Submersible pump / Peristaltic pump / Bladder Pump / Other

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Volatiles and VC	1220	(3) 40-mL VOA	HCl, cool to <4°C	
Total Coliform		300-mL sterile AG or poly	Cool to <4°C	
Geochemical Parameters		500-mL HDPE	Cool to <4°C	
Nitrate/Nitrite		500-mL HDPE	Cool to <4°C	
TOC		250-mL AG	~~H_2SO_4 to pH <2, cool to~~	
COD		250-mL HDPE	~~H_2SO_4 to pH <2, cool to~~	
Total Metals		250-mL HDPE	~~HNO_3 to pH <2, cool to~~ <4°C	
Dissolved Metals		250-mL HDPE	Field filter, HNO_3 to pH <2, cool to <4°C	

Sample End Time 1230

Comments / Exceptions:

Dup sample → MW-17

Notes: Where multiple visits are required to complete sampling, parameters are to be checked prior to sampling for each visit. Enter data under field comments.

Groundwater Sampling Field Data - Olalla Landfill Monitoring

Station	MW-8	Date	6/17/2020
Sample: ID	Olalla - MW-8 - 6/20	Field Team: (Initials)	EC + LV. LV.
Field Conditions	Sunny ~ 70°F		

Low-Flow Purge Information

Well Diameter (in.)	2"
Well Depth (ft.)	38
Initial Depth to Water (ft.)	21.63
Depth of Water Column	16.62
1 Casing Volume (gal.)	2.7
Controller setting (Hz)	106

Purge Method : ~~Submersible pump~~

Other: :

Start Time	1242
End Time	1315
Total Gallons Purged	11.0

Time	Gallons	pH	Conductivity	NTU	DO	Temp.	ORP	Appearance
1243	0.2	6.85	0.115	—	0.26	10.0	105.1	Murky
1246	1.0	6.73	0.148	—	0.09	10.2	85.1	Slightly Cloudy
1249	1.9	6.68	0.171	—	0.04	10.2	73.1	" "
1252	3.8	6.66	0.191	—	0.01	10.2	65.3	" "
1255	5.0	6.67	0.197	—	0.02	10.2	59.3	" "
1258	6.5	6.67	0.204	—	0.05	10.2	54.7	Clear
1301	7.9	6.67	0.205	—	0.07	10.2	53.0	" "
1304	9.0	6.68	0.208	4.86	0.08	10.2	52.0	" "
						NFE		

Sample Information

Sample Method(s) : Submersible pump / Peristaltic pump / Bladder Pump / Other

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Volatiles and VC	1307	(3) 40-mL VOA	HCl, cool to <4°C	
Total Coliform		300-mL sterile AG or poly	Cool to <4°C	
Geochemical Parameters		500-mL HDPE	Cool to <4°C	
Nitrate/Nitrite		500-mL HDPE	Cool to <4°C	
TOC		250-mL AG	~~H_2SO_4 to pH <2, cool to <4°C~~	
COD		250-mL HDPE	~~H_2SO_4 to pH <2, cool to <4°C~~	
Total Metals		250-mL HDPE	~~HNO_3 to pH <2, cool to <4°C~~	
Dissolved Metals		250-mL HDPE	Field filter, HNO_3 to pH <2, cool to <4°C	

Sample End Time: 1315

Comments / Exceptions:

Notes: Where multiple visits are required to complete sampling, parameters are to be checked prior to sampling for each visit. Enter data under field comments.

Groundwater Sampling Field Data - Olalla Landfill Monitoring

Station		Date	6/17/2020
Sample: ID		Field Team: (Initials)	EC
Field Conditions			

Low-Flow Purge Information

Well Diameter (in.)	2"
Well Depth (ft.)	
Initial Depth to Water (ft.)	
Depth of Water Column	
1 Casing Volume (gal.)	
Controller setting (Hz)	

Purge Method : Submersible pump

Other: :

Start Time	
End Time	
Total Gallons Purged	

Time	Gallons	pH	Conductivity	NTU	DO	Temp.	ORP	Appearance

Sample Information

Sample Method(s) : Submersible pump / Peristaltic pump / Bladder Pump / Other

Analysis	Time	Bottle Type	Preservative/Filtratior	Comments
Volatiles and VC		(3) 40-mL VOA	HCl, cool to <4°C	
Total Coliform		300-mL sterile AG or poly	Cool to <4°C	
Geochemical Parameters		500-mL HDPE	Cool to <4°C	
Nitrate/Nitrite		500-mL HDPE	Cool to <4°C	
TOC		250-mL AG	H_2SO_4 to pH <2, cool to <4°C	
COD		250-mL HDPE	H_2SO_4 to pH <2, cool to <4°C	
Total Metals		250-mL HDPE	HNO_3 to pH <2, cool to <4°C	
Dissolved Metals		250-mL HDPE	Field filter, HNO_3 to pH <2, cool to <4°C	

Sample End Time

Comments / Exceptions:

Notes: Where multiple visits are required to complete sampling, parameters are to be checked prior to sampling for each visit. Enter data under field comments.

Landfill Gas Monitoring Field Data - Olalla Landfill Monitoring

Instrument Used:	Landtech GEM2000	Date and Time:	6/17/20 / 1340
Ambient Temperature:	70°F	Field Team:	W.W. + E.C.
Field Conditions:	Sunny		

Landfill Gas Data

Flare #	Time	Methane (% vol.)	% LEL	Oxygen (% vol.)	Carbon Dioxide (% vol.)	Temperature (°C)	Gas Pressure ("H_2O)
3	1353	0	0	20.7	0	66°F	0.05
1	1412	0	0	19.8	1.5	66°F	0.05
2	1425	0	7	21.7	0	66°F	0.05

Comments / Inspection Results[1]

- Flare 3 initially had LEL of up to 7% then quickly dropped to zero for the 5 min. purge

[1]Inspect the following: lock and gate operation, tightness of bolts and clamps, differential settlement, valve operation, debris or breaks in hose barb.

EQUIPCO

CES LANDTECH MODEL: GEM 2000
CALIBRATION CERTIFICATE

SERVICE TECHNICIAN: GM DATE: 9/16/20

INSTRUMENT INFORMATION

RENTAL ID: GEM2000 #04

SERIAL NUMBER: GM08953/06

CALIBRATION INFORMATION

1..CALIBRATION GAS: 35 % CO_2 LOT #: 573162

GAS RESPONSE: 35 % CO_2 ±2%

2. CALIBRATION GAS: 50 % Vol. Methane LOT #: 573162

GAS RESPONSE: 50 % Vol. Methane ±2%

OXYGEN RESPONSE IN FRESH AIR ENVIRONMENT: 20.9% ✓

OXYGEN DOWNSCALE RESPONSE CHECKED: 0% WITH 99.9% Nitrogen ✓

THIS INSTRUMENT HAS BEEN CALIBRATED TO STANDARDS SET FORTH BY THE MANUFACTURER

2689 151st Pl NE, Redmond, WA 98052 Phone (888)234-5678 Fax (925)305-1303

EQUIPCO RENTALS

YSI ProDSS RENTAL
CALIBRATION CERTIFICATE

SERVICE TECHNICIAN: V DATE: 9/16/20

RENTAL CUSTOMER: TRC

INSTRUMENT INFORMATION

RENTAL I.D. NUMBER: YSIPRODSS 04

SERIAL NUMBER: 16F102615

CALIBRATION INFORMATION

PARAMETER:	STANDARD:	PASS ( )	LOT #
1. CONDUCTIVITY	1,000 µMhos	X	55029
2. pH ZERO	pH 7	X	031274
pH SLOPE	pH 4	X	031273
pH SLOPE	pH 10	X	031275
3. DISSOLVED OXYGEN	Air Calibration Barometric pressure = 760mmHg	X	N/A
~~4. TURBIDITY ZERO~~	~~0.0 NTU's~~		~~N/A~~
~~TURBIDITY SPAN~~	~~20 NTU's~~		
5. REDOX (ORP)	231mV (YSI Zobell solution)	X	121719

2686 151st PL NE, Redmond WA, 98052 Phone (888) 234-5678 Fax (925) 305-1303

ENVIRONMENTAL PARTNERS INC

1180 NW Maple Street, Suite 310 Issaquah, Washington 98027 ph 425.395.0010

Olalla Landfill Quarterly Monitoring Field Book September 2020

Olalla Landfill
Kitsap County, Washington
Project Number: 382595.0000.

Environmental Partners, Inc., a TRC Company
1180 NW Maple Street, Suite 310
Issaquah, Washington 98027
(425) 395-0010

Table 3-1: Monitoring Well Construction Data Summary

Olalla Landfill, Kitsap County, WA

Well	Total Well Depth (ft bgs)	Measuring Point Elevation (ft NGVD 29)	Surface Elevation (ft NGVD 29)	Screened Interval (ft bgs)	Northing	Easting	Measuring Point Description
MW-1	87	343.79	342.53	82-87	161858.133	560525.840	Pump wellhead
MW-2	73	323.25	318.95	68-73	161704.534	559572.839	Top of PVC casing
MW-3	55.5	296.95	294.95	50.5-55.5	162333.903	559463.060	Pump wellhead
MW-4	68	320.93	317.35	63-68	161911.192	559787.735	Top of PVC casing
MW-5	35.5	334.17	332.78	25-35	162510.115	559878.901	Top of PVC casing
MW-5A	98	332.53	331.43	86-96	162487.878	559875.742	Pump wellhead
MW-6	35	271.17	269.14	28-33	162077.699	559358.970	Pump wellhead
MW-7	33	280.43	278.21	21-31	161723.016	559398.979	Pump wellhead
MW-8	38	272.85	270.73	25-35	161897.813	559350.147	Pump wellhead
MW-10	47	279.21	276.84	37-47	162218.490	559340.899	Pump wellhead

Notes:

NGVD 29 = National Geodetic Vertical Datum (1929)

bgs = below ground surface

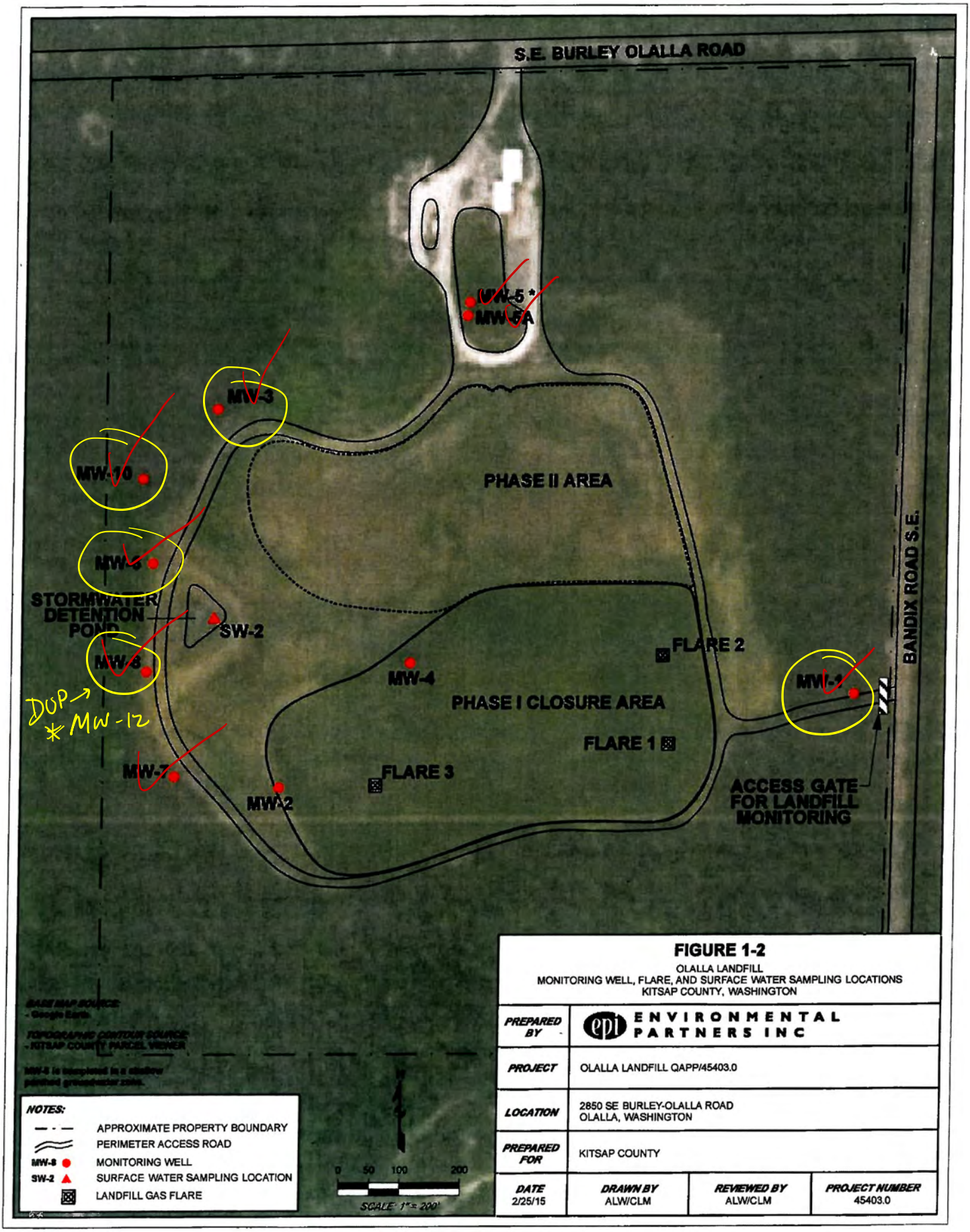

FIGURE 1-2

OLALLA LANDFILL
MONITORING WELL, FLARE, AND SURFACE WATER SAMPLING LOCATIONS
KITSAP COUNTY, WASHINGTON

PREPARED BY	ENVIRONMENTAL PARTNERS INC		
PROJECT	OLALLA LANDFILL QAPP/45403.0		
LOCATION	2850 SE BURLEY-OLALLA ROAD OLALLA, WASHINGTON		
PREPARED FOR	KITSAP COUNTY		
DATE 2/25/15	DRAWN BY ALW/CLM	REVIEWED BY ALW/CLM	PROJECT NUMBER 45403.0

Table 2-1: CAP and SWHP Monitoring Schedule
Olalla Landfill, Kitsap County, WA

Sample Location	First Quarter									Second and Third Quarters								Fourth Quarter											
	Water Level	Field Parameters	VOCs	T & D Metals	Total Coliform	Fecal Coliform	Geochemical	TOC / COD	Landfill Gas Parameters	Water Level	Field Parameters	VOCs	T & D Metals	Total Coliform	Geochemical	TOC / COD	Landfill Gas Parameters	Water Level	Field Parameters	VOCs	T & D Metals	Total Coliform	Fecal Coliform	Geochemical	TOC / COD	D. Metals - COC list	pH (field and lab)	Vinyl Chloride	Landfill Gas Parameters
MW-1	■	■	■	■	■		■	■		■	■	■	■	■	■	■		■	■	■	■	■		■	■				
MW-2	■									■								■											
MW-3	■	■	■	■	■		■	■		■	■	■	■	■	■	■		■	■	■	■	■		■	■				
MW-4	■									■								■											
MW-5	■									■								■											
MW-5A	■									■								■	■							■	■	■	
MW-6	■	■	■	■	■		■	■		■	■	■	■	■	■	■		■	■	■	■	■		■	■				
MW-7	■									■								■	■							■	■	■	
MW-8	■	■	■	■	■		■	■		■	■	■	■	■	■	■		■	■	■	■	■		■	■				
MW-10	■	■	■	■	■		■	■		■	■	■	■	■	■	■		■	■	■	■	■		■	■				
SW-2[1]		■				■	■												■				■	■					
Flares 1, 2, 3									■								■												■

Notes:

[1] Surface water sample from SW-2 collected during first quarter or fourth quarter, not both quarters.

Field Parameters = pH, specific conductance, temperature, ORP, and DO

VOCs = Volatile organic compounds by EPA Method 8260C standard list, vinyl chloride by selective ion monitoring (SIM)

T (total) Metals = calcium, potassium, sodium

D (dissolved) Metals = arsenic, barium, iron, manganese, zinc

Geochemical = alkalinity, ammonia, bicarbonate, carbonate, chloride, sulfate, nitrate, nitrite, pH

TOC / COD = total organic carbon / chemical oxygen demand

Dissolved Metals - COC list = arsenic, iron, manganese

Landfill gas parameters = methane (%LEL), oxygen(% vol), carbon dioxide (% vol), and gas pressure

tiparameter Probe Calibration Log - Olalla Landfill Groundwater Monitoring

Meter Type	Manufacturer	Model Number	Mfg. Serial#	Rental Co. Serial #	Date	Time

Calibrated to Autocal Solution

Calibration Solution Manufacturer _____ Lot Number _____ Exp. Date _____

pH = _____ Turbidity = _____ Temperature = _____

Conductivity = _____ Dissolved Oxygen = _____ ORP = _____

Comments:

See calibration cert → Equipco

Meter Type	Manufacturer	Model Number	Mfg. Serial#	Rental Co. Serial #	Date	Time

Calibrated to Autocal Solution

Calibration Solution Manufacturer _____ Lot Number _____ Exp. Date _____

pH = _____ Turbidity = _____ Temperature = _____

Conductivity = _____ Dissolved Oxygen = _____ ORP = _____

Comments:

Instrument Calibration Log - Olalla Landfill Monitoring

Calibrated By: _____ **Date:** _____

Meter Type	Manufacturer	Model Number	Manufacturer Serial #	Rental Co. Serial #	Time
pH					
pH Electrode					

Calibrated: _____ to 4.00 buffer _____ to 7.00 buffer _____ to 10.00 buffer at _____ °C

Slope = _____ Comments:

Meter Type	Manufacturer	Model Number	Manufacturer Serial #	Rental Co. Serial #	Time
Specific Cond.					

Specific Conductance: Calibrated _____ µS/cm to _____ µS/cm calibration sta

Electrical Conductivity: Calibrated _____ µS/cm to _____ µS/cm calibration standard at _____

Comments:

Meter Type	Manufacturer	Model Number	Manufacturer Serial #	Rental Co. Serial #	Time
ORP Meter					
ORP Electrode					

Electrode measured _____ millivolts at _____ °C using Zobell prepared on / /

Table value for Zobell solution at this temperature is _____ mV.

Meter Type	Manufacturer	Model Number	Manufacturer Serial #	Rental Co. Serial #	Time
Turbidity					

Meter reads _____ NTUs using _____ NTUs star Comments:

Meter reads _____ NTUs using _____ NTUs star

Meter Type	Manufacturer	Model Number	Manufacturer Serial #	Rental Co. Serial #	Time
DO Meter					

Air-Calibration: Measured temperature _____ °C corresponds to _____ mg/L DO (from Table I)

Atmospheric pressure / elevation correction factor _____ (from Table II)

Corrected calibration value _____ mg/L DO (Table I value multiplied by Table II value)

Comments:

Depth to Water Measurement Field Data - Olalla Landfill Monitoring

Well	Time	Measuring Point Elevation (ft. NGVD[1])	Depth to Water (ft.)	Comments and Well Inspection[2] Notes
MW-1	0850	343.79	78.92	
MW-2	1454	323.25	66.33	
MW-3	1030	296.95	46.22	
MW-4	1458	320.93	63.34	
MW-5	1015	334.17	12.25	
MW-5A	1017	332.53	76.64	
MW-6	1318	271.17	21.86	
MW-7	1446	280.43	26.56	
MW-8	1405	272.85	22.35	
MW-10	1120	279.21	31.02	

Notes:

[1]NGVD = National Geodetic Vertical Datum (1929)

[2]Observations regarding the condition of the well and surrounding area (e.g., protective casing, surface seal, cap, lock, bollards, soil conditions near the well such as depressions, ponded surface water, or other subsidence features, and any installed sampling equipment).

Groundwater Sampling Field Data

EPI Project No./Site 382595/Kitsap County - Olalla Landfill

Station	MW-1	Date	9/17/20
Sample ID	MW-1	Field Team: (Initials)	WW + NS
Field Conditions	Overcast ~65°F		

Purge Information

Well Diameter (in.)	2"
Well Depth (ft.)	87
Initial Depth to Water (ft.)	78.92
Depth of Water Column	8.08
1 Casing Volume	0.13
Controller Setting (Hz)	210

Purge Method : (Submersible pump) ~~Peristaltic Pump~~ ~~Bladder Pump~~ ~~Other: :~~

Start Time	0908
End Time	0955
Total Gallons Purged	20.0

Time	Gallons	pH	Conductivity	NTU	DO	Temp.	ORP	Appearance
0910	1.0	7.38	0.126	13.4	9.81	10.3	230.8	Clear
0913	4.0	6.98	0.125	2.54	9.89	10.6	225.1	Clear
0916	7.0	6.58	0.125	1.51	9.90	10.7	232.7	" "
0919	9.0	6.51	0.125	0.52	9.90	10.7	236.1	" "
0922	11.0	6.40	0.125	0.46	9.89	10.7	241.7	" "
0925	13.0	6.31	0.125	0.37	9.89	10.7	247.2	" "
0928	15.0	6.25	0.124	0.31	9.89	10.7	251.4	" "
0931	17.0	6.18	0.124	0.33	9.89	10.7	256.3	" "
0934	19.0	6.15	0.124	0.32	9.90	10.7	258.9	" "
						NFE		

Sample Information

Sample Method(s) : ~~Submersible pump~~ / Peristaltic pump / Bladder Pump / Other

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Volatiles and VC	0950	(5) 40-ml VOA	HCL, ice	
Total Coliform	0950	300-ml sterile AG or poly	Na2S2O3	
Geochemical Parameters	0950	Sm OJ	ice	
Nitrate/Cl/Nitrite/SO4/pH	0950	Lg OJ	ice	
TOC/COD/NH3	0950	250-ml AG	H_2SO_4	
Total Metals	0950	500-ml HDPE	HNO_3 to ph<2, ice	
Dissolved Metals	0950	500-ml HDPE	~~HNO3 to ph<2~~, ice. **Field filte** X	Lab filtered
			→ Rinsed out	
End Time	0955			

Comments / Exceptions:

Groundwater Sampling Field Data

EPI Project No./Site 382595/Kitsap County - Olalla Landfill

Station	MW-3	Date	9/17/20
Sample ID	MW-3	Field Team: (Initials)	WW + ND
Field Conditions	Overcast 76°F		

Purge Information

Well Diameter (in.)	2"
Well Depth (ft.)	55.5
Initial Depth to Water (ft.)	46.22
Depth of Water Column	9.3
1 Casing Volume	1.5
Controller Setting (Hz)	148

Purge Method : (Submersible pump) ~~Peristaltic Pump~~ Bladder Pump Other: : _____

Start Time	1033
End Time	1055
Total Gallons Purged	12.0

Time	Gallons	pH	Conductivity	NTU	DO	Temp.	ORP	Appearance
1034	1.0	6.46	0.389	0.51	0.79	10.9	300.8	Clear
1037	3.0	6.31	0.369	0.60	0.24	11.6	285.4	" "
1040	4.0	6.30	0.366	0.22	0.19	11.7	281.2	" "
1043	6.0	6.28	0.365	0.22	0.13	11.6	275.8	" "
1046	8.0	6.27	0.364	0.36	0.11	11.7	271.0	" "

Sample Information

Sample Method(s) : (Submersible pump) / Peristaltic pump / Bladder Pump / Other

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Volatiles and VC	1050	(5) 40-ml VOA	HCL, ice	
Total Coliform		300-ml sterile AG or poly	Na2S2O3	
Geochemical Parameters		Sm OJ	ice	
Nitrate/Cl/Nitrite/SO4/pH		Lg OJ	ice	
TOC/COD/NH3		250-ml AG	H_2SO_4	
Total Metals		500-ml HDPE	HNO_3 to ph<2, ice	
Dissolved Metals		500-ml HDPE	~~HNO3 to ph~~<2, ice. ~~Field filte~~	Lab filtered
			Rinsed	out

End Time 1055

Comments / Exceptions:

Groundwater Sampling Field Data

EPI Project No./Site 382595/Kitsap County - Olalla Landfill

Station	MW-10	Date	9/17/20
Sample ID	MW-10	Field Team: (Initials)	CW + N. D.
Field Conditions	Overcast 65°F		

Purge Information

Well Diameter (in.)	2"
Well Depth (ft.)	47'
Initial Depth to Water (ft.)	31.02
Depth of Water Column	15.98
1 Casing Volume	2.6
Controller Setting (Hz)	129

Purge Method : (Submersible pump) / Peristaltic Pump / Bladder Pump / Other: : _____

Start Time	1150
End Time	
Total Gallons Purged	

Time	Gallons	pH	Conductivity	NTU	DO	Temp.	ORP	Appearance
1151	1.5	6.81	0.411	5.41	0.63	10.7	176.9	Clear
1154	3.5	6.75	0.405	0.84	0.15	10.8	156.7	" "
1157	5.3	6.72	0.403	0.44	0.42	10.8	145.5	" "
1200	8.4	6.68	0.402	0.42	0.18	10.8	137.5	" "
1203	10.1	6.66	0.401	0.25	0.47	10.8	129.9	" "

Sample Information

Sample Method(s) : (Submersible pump) / Peristaltic pump / Bladder Pump / Other

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Volatiles and VC	1205	(5) 40-ml VOA	HCL, ice	
Total Coliform		300-ml sterile AG or poly	Na2S2O3	
Geochemical Parameters		Sm OJ	ice	
Nitrate/Cl/Nitrite/SO4/pH		Lg OJ	ice	
TOC/COD/NH3		250-ml AG	H_2SO_4	
Total Metals		500-ml HDPE	HNO_3 to ph<2, ice	
Dissolved Metals		500-ml HDPE	HNO3 to ph<2, ice. **Field filte**	yes!

End Time

Comments / Exceptions:

Groundwater Sampling Field Data

EPI Project No./Site 382595/Kitsap County - Olalla Landfill

Station	MW-6	Date	9/17/20
Sample ID	MW-6	Field Team: (Initials)	WW + ND
Field Conditions	overcast / smoky ~75°F		

Purge Information

Well Diameter (in.)	2"
Well Depth (ft.)	35'
Initial Depth to Water (ft.)	21.86
Depth of Water Column	13.14
1 Casing Volume	2.1
Controller Setting (Hz)	106.4

Purge Method : Submersible pump / Peristaltic Pump / Bladder Pump / Other: :

Start Time	1320
End Time	1340
Total Gallons Purged	5.7

Time	Gallons	pH	Conductivity	NTU	DO	Temp.	ORP	Appearance
1323	0.4	6.80	0.397	1.22	1.01	11.1	78.0	clear
1326	1.3	6.71	0.386	0.93	0.17	11.2	43.1	"
1329	2.5	6.70	0.384	0.79	0.13	11.2	40.2	"
1332	3.2	6.69	0.382	0.66	0.09	11.3	36.9	"

NFE

Sample Information

Sample Method(s): Submersible pump / Peristaltic pump / Bladder Pump / Other

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Volatiles and VC	1335	(5) 40-ml VOA	HCL, ice	
Total Coliform		300-ml sterile AG or poly	Na2S2O3	
Geochemical Parameters		Sm OJ	ice	
Nitrate/Cl/Nitrite/SO4/pH		Lg OJ	ice	
TOC/COD/NH3		250-ml AG	H_2SO_4	
Total Metals		500-ml HDPE	HNO_3 to ph<2, ice	
Dissolved Metals		500-ml HDPE	~~HNO_3 to ph<2~~, ice. ~~Field filte~~	Lab filtered
			↳ Triple rinsed	
End Time	1340			

Comments / Exceptions:

Groundwater Sampling Field Data

EPI Project No./Site 382595/Kitsap County - Olalla Landfill

Station	MW-8	Date	9/17/20
Sample ID	MW-8	Field Team: (Initials)	WCW + ND
Field Conditions	Overcast ~75°F		

Purge Information

Well Diameter (in.)	2"
Well Depth (ft.)	38'
Initial Depth to Water (ft.)	22.35
Depth of Water Column	15.65
1 Casing Volume	2.6
Controller Setting (Hz)	106

Purge Method : Submersible pump / ~~Peristaltic Pump~~ / Bladder Pump / Other: :

Start Time	1350
End Time	1430
Total Gallons Purged	20.0

Time	Gallons	pH	Conductivity	NTU	DO	Temp.	ORP	Appearance
1357	0.9	6.97	0.100	62.1	0.22	10.6	131.5	Clear
1400	2.1	6.78	0.133	15.2	0.14	10.5	91.4	" "
1403	4.3	6.62	0.148	9.59	0.17	10.4	80.1	" "
1406	5.7	6.58	0.150	8.71	0.17	10.5	79.1	" "
1409	7.9	6.50	0.155	7.70	0.18	10.5	79.5	" "
1412	9.7	6.36	0.160	5.34	0.17	10.4	82.1	" "
1415	11.0	6.33	0.161	5.82	0.19	10.5	82.1	" "
1418	14.2	6.31	0.160	4.99	0.19	10.5	81.7	" "
						NTE		

Sample Information

Sample Method(s) : Submersible pump / Peristaltic pump / Bladder Pump / Other

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Volatiles and VC	1420	(5) 40-ml VOA	HCL, ice	
Total Coliform		300-ml sterile AG or poly	$Na_2S_2O_3$	
Geochemical Parameters		Sm OJ	ice	
Nitrate/Cl/Nitrite/SO4/pH		Lg OJ	ice	
TOC/COD/NH3		250-ml AG	H_2SO_4	
Total Metals		500-ml HDPE	HNO_3 to ph<2, ice	
Dissolved Metals		500-ml HDPE	~~HNO3 to ph<2, ice.~~ **Field filte** ~~r~~	Lab Filtered
			→ Triple rinsed	
End Time	1430			

Comments / Exceptions:

A DUP MW-12

Landfill Gas Monitoring Field Data - Olalla Landfill Monitoring

Instrument Used:	Gem 2000	Date and Time:	9/12/20 1507
Ambient Temperature:	70°F	Field Team:	WW + ND
Field Conditions:	Smokey light breeze from N		

Landfill Gas Data

Flare #	Time	Methane (% vol.)	% LEL	Oxygen (% vol.)	Carbon Dioxide (% vol.)	Temperature (°C)	Gas Pressure ("H_2O)
3	1512	4.2	82	0.7	15.2	70°F	0.10
1	1520	0	0	17.8	1.0	70°F	0.15
2	1529	0.4	9	4.8	10.3	70°F	0.15

Comments / Inspection Results[1]

[1]Inspect the following: lock and gate operation, tightness of bolts and clamps, differential settlement, valve operation, debris or breaks in hose barb.

EQUIPCO

CES LANDTECH MODEL: GEM 2000
CALIBRATION CERTIFICATE

SERVICE TECHNICIAN: GM DATE: 9/16/20

INSTRUMENT INFORMATION

RENTAL ID: GEM2000 #04

SERIAL NUMBER: GM08953/06

CALIBRATION INFORMATION

1..CALIBRATION GAS: 35 % CO_2 LOT #: 573162

GAS RESPONSE: 35 % CO_2 ±2%

2. CALIBRATION GAS: 50 % Vol. Methane LOT #: 573162

GAS RESPONSE: 50 % Vol. Methane ±2%

OXYGEN RESPONSE IN FRESH AIR ENVIRONMENT: 20.9% ✓

OXYGEN DOWNSCALE RESPONSE CHECKED: 0% WITH 99.9% Nitrogen ✓

THIS INSTRUMENT HAS BEEN CALIBRATED TO STANDARDS SET FORTH BY THE MANUFACTURER

2689 151st Pl NE, Redmond, WA 98052 Phone (888)234-5678 Fax (925)305-1303

EQUIPCO RENTALS

YSI ProDSS RENTAL
CALIBRATION CERTIFICATE

SERVICE TECHNICIAN: V DATE: 9/16/20

RENTAL CUSTOMER: TRC

INSTRUMENT INFORMATION

RENTAL I.D. NUMBER: YSIPRODSS 04

SERIAL NUMBER: 16F102615

CALIBRATION INFORMATION

PARAMETER:	STANDARD:	PASS ( )	LOT #
1. CONDUCTIVITY	1,000 µMhos	X	55029
2. pH ZERO	pH 7	X	031274
pH SLOPE	pH 4	X	031273
pH SLOPE	pH 10	X	031275
3. DISSOLVED OXYGEN	Air Calibration Barometric pressure = 760mmHg	X	N/A
~~4. TURBIDITY ZERO~~	~~0.0 NTU's~~		~~N/A~~
~~TURBIDITY SPAN~~	~~20 NTU's~~		
5. REDOX (ORP)	231mV (YSI Zobell solution)	X	121719

2686 151st PL NE, Redmond WA, 98052 Phone (888) 234-5678 Fax (925) 305-1303

1180 NW Maple St., Suite 310
Issaquah, WA 98027
T 425.395.0010
TRCcompanies.com

Olalla Landfill Quarterly Monitoring Field Book December 2020

Olalla Landfill
Kitsap County, Washington
Project Number: 382595.0000.

TRC Environmental Corporation
1180 NW Maple Street, Suite 310
Issaquah, Washington 98027
(425) 395-0010

● = Completed

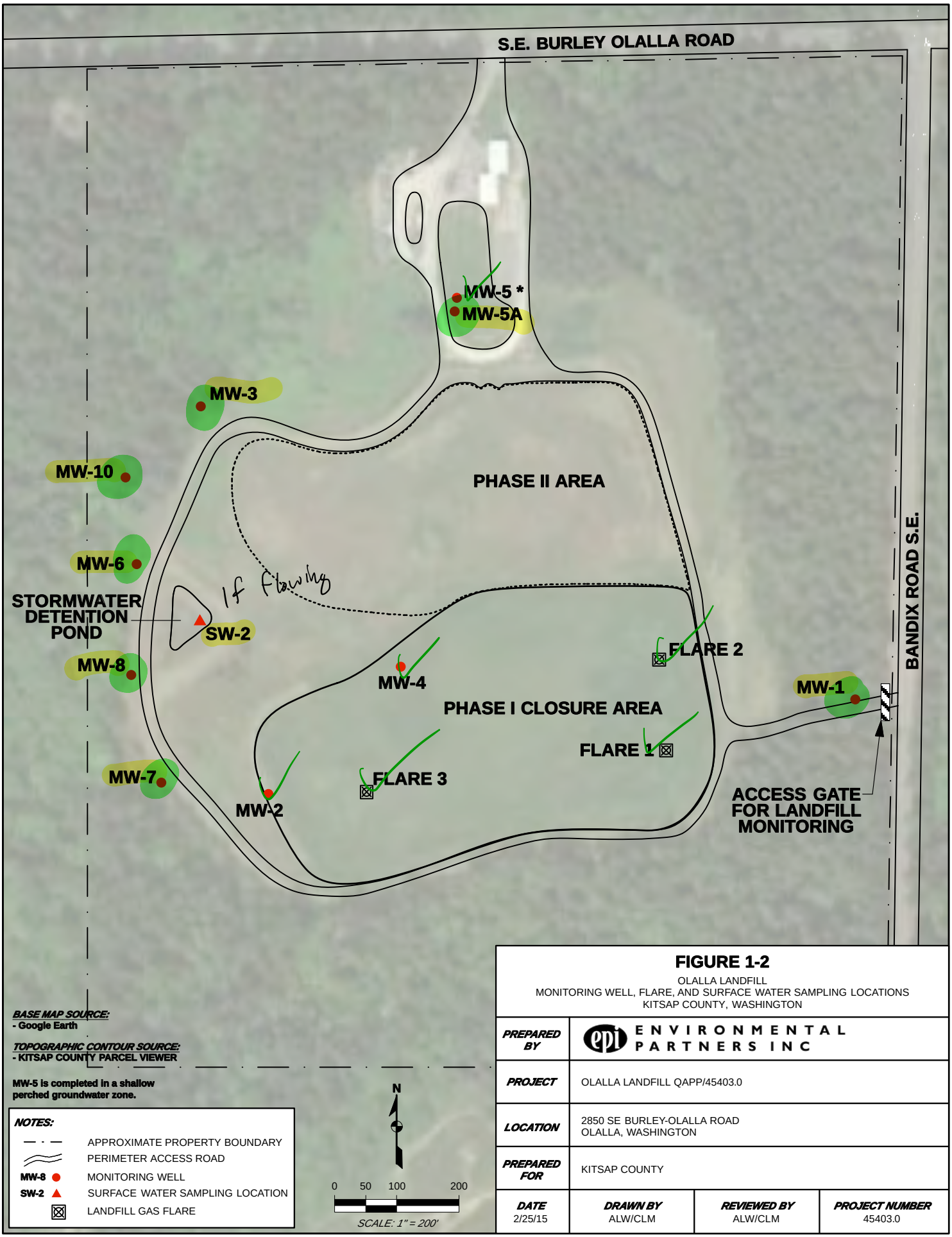

FIGURE 1-2

OLALLA LANDFILL
MONITORING WELL, FLARE, AND SURFACE WATER SAMPLING LOCATIONS
KITSAP COUNTY, WASHINGTON

PREPARED BY	ENVIRONMENTAL PARTNERS INC		
PROJECT	OLALLA LANDFILL QAPP/45403.0		
LOCATION	2850 SE BURLEY-OLALLA ROAD OLALLA, WASHINGTON		
PREPARED FOR	KITSAP COUNTY		
DATE 2/25/15	DRAWN BY ALW/CLM	REVIEWED BY ALW/CLM	PROJECT NUMBER 45403.0

BASE MAP SOURCE:
- Google Earth

TOPOGRAPHIC CONTOUR SOURCE:
- KITSAP COUNTY PARCEL VIEWER

MW-5 is completed in a shallow perched groundwater zone.

NOTES:
- APPROXIMATE PROPERTY BOUNDARY
- PERIMETER ACCESS ROAD
- MW-8 ● MONITORING WELL
- SW-2 ▲ SURFACE WATER SAMPLING LOCATION
- LANDFILL GAS FLARE

N

0 50 100 200

SCALE: 1" = 200'

Table 2-1: CAP and SWHP Monitoring Schedule

Olalla Landfill, Kitsap County, WA

Sample Location	First Quarter									Second and Third Quarters								Fourth Quarter											
	Water Level	Field Parameters	VOCs	T & D Metals	Total Coliform	Fecal Coliform	Geochemical	TOC / COD	Landfill Gas Parameters	Water Level	Field Parameters	VOCs	T & D Metals	Total Coliform	Geochemical	TOC / COD	Landfill Gas Parameters	Water Level	Field Parameters	VOCs	T & D Metals	Total Coliform	Fecal Coliform	Geochemical	TOC / COD	D. Metals - COC list	pH (field and lab)	Vinyl Chloride	Landfill Gas Parameters
MW-1	■	■	■	■	■		■	■		■	■	■	■	■	■	■		■	■	■	■	■		■	■				
MW-2	■									■								■											
MW-3	■	■	■	■	■		■	■		■	■	■	■	■	■	■		■	■	■	■	■		■	■				
MW-4	■									■								■											
MW-5	■									■								■											
MW-5A	■									■								■	■							■	■	■	
MW-6	■	■	■	■	■		■	■		■	■	■	■	■	■	■		■	■	■	■	■		■	■				
MW-7	■									■								■	■							■	■	■	
MW-8	■	■	■	■	■		■	■		■	■	■	■	■	■	■		■	■	■	■	■		■	■				
MW-10	■	■	■	■	■		■	■		■	■	■	■	■	■	■		■	■	■	■	■		■	■				
SW-2[1]		■				■	■												■				■	■					
Flares 1, 2, 3									■								■												■

Notes:

[1] Surface water sample from SW-2 collected during first quarter or fourth quarter, not both quarters.

Field Parameters = pH, specific conductance, temperature, ORP, and DO

VOCs = Volatile organic compounds by EPA Method 8260C standard list, vinyl chloride by selective ion monitoring (SIM)

T (total) Metals = calcium, potassium, sodium

D (dissolved) Metals = arsenic, barium, iron, manganese, zinc

Geochemical = alkalinity, ammonia, bicarbonate, carbonate, chloride, sulfate, nitrate, nitrite, pH

TOC / COD = total organic carbon / chemical oxygen demand

Dissolved Metals - COC list = arsenic, iron, manganese

Landfill gas parameters = methane (%LEL), oxygen(% vol), carbon dioxide (% vol), and gas pressure

Table 3-1: Monitoring Well Construction Data Summary

Olalla Landfill, Kitsap County, WA

Well	Total Well Depth (ft bgs)	Measuring Point Elevation (ft NGVD 29)	Surface Elevation (ft NGVD 29)	Screened Interval (ft bgs)	Northing	Easting	Measuring Point Description
MW-1	87	343.79	342.53	82-87	161858.133	560525.840	Pump wellhead
MW-2	73	323.25	318.95	68-73	161704.534	559572.839	Top of PVC casing
MW-3	55.5	296.95	294.95	50.5-55.5	162333.903	559463.060	Pump wellhead
MW-4	68	320.93	317.35	63-68	161911.192	559787.735	Top of PVC casing
MW-5	35.5	334.17	332.78	25-35	162510.115	559878.901	Top of PVC casing
MW-5A	98	332.53	331.43	86-96	162487.878	559875.742	Pump wellhead
MW-6	35	271.17	269.14	28-33	162077.699	559358.970	Pump wellhead
MW-7	33	280.43	278.21	21-31	161723.016	559398.979	Pump wellhead
MW-8	38	272.85	270.73	25-35	161897.813	559350.147	Pump wellhead
MW-10	47	279.21	276.84	37-47	162218.490	559340.899	Pump wellhead

Notes:
NGVD 29 = National Geodetic Vertical Datum (1929)
bgs = below ground surface

Table 3-2: Recommended Laboratory Methods and Sample Requirements for Groundwater Samples

Olalla Landfill, Kitsap County, WA

Constituent Group	Analytical Method	Container Type	Handling and Preservation	Holding Time
VOCs	EPA 8260C Vinyl chloride by SIM or Low Level 8260C	(3) 40 mL VOA vials	No headspace, HCl, cool to <4°C	14 days if preserved, 7 days if unpreserved
Total Coliform	SM18 9222B	300 mL sterile AG	Cool to <4°C	24 hours
Alkalinity	SM 2320B	500-mL HDPE	Cool to <4°C	14 days
Ammonia	EPA 350.1			28 days
Bicarbonate	SM 2320B			14 days
Carbonate	SM 2320B			14 days
Chloride	EPA 300.0			28 days
Sulfate	EPA 300.0			28 days
Nitrate	EPA 300.0	500-mL HDPE		48 hours
Nitrite	EPA 300.0			
pH	SM 4500 H+B	250-mL AG or from any unpreserved sample container	Cool to <4°C	24 hours
Total Organic Carbon	SM 5310B	125-mL AG	H_2SO_4 to pH <2, cool to <4°C	28 days
Chemical Oxygen Demand	SM 5220C	125-mL AG	H_2SO_4 to pH <2, cool to <4°C	28 days
Total Metals (calcium, potassium, sodium)	EPA 6010/7000 series	250 mL HDPE	HNO_3 to pH <2, cool to <4°C	6 months
Dissolved Metals (arsenic, barium, iron, manganese, zinc)	EPA 6010/6020/7000 series	250 mL HDPE	Field filter, HNO_3 to pH <2, cool to <4°C	6 months

Notes:
AG = amber glass
HCl = hydrochloric acid
HNO_3 = nitric acid
H_3PO_4 = phosphoric acid
HDPE = high density polyethylene
mL = milliliter
VOA = volatile organic analysis
VOC - volatile organic compound

Table 3-3: Groundwater Monitoring Field Quality Control Sample Summary
Olalla Landfill, Kitsap County, WA

Parameter	Number of Samples Per Quarter				
	Method	Primary Samples	Field Duplicate Samples (10%)	Trip Blank (one per event)	Total
VOCs	EPA 8260C GC/MS	5	1	1	7
VOCs (Vinyl Chloride)	EPA 8260C GC/MS Low level or SIM	5 (Q) 7 (A)	1	1	7 (Q) 9 (A)
Dissolved Metals (As, Fe, Mn)	EPA 6010/6020/7000 series	5 (Q) 7 (A)	1	NA	6 (Q) 8 (A)
Dissolved Metals (Ba, Zn)	EPA 6010/6020/7000 series	5	1	NA	6
Total Metals (Ca, K, Na)	EPA 6010/7000 series	5	1	NA	6
pH (laboratory)	SM 4500 H+B	5	1	NA	6
Alkalinity (mg $CaCO_3$/L)	SM 2320B	5	1	NA	6
Bicarbonate (mg $CaCO_3$/L)	SM 2320B	5	1	NA	6
Carbonate (mg $CaCO_3$/L)	SM 2320B	5	1	NA	6
Chloride	EPA 300.0	5	1	NA	6
Sulfate	EPA 300.0	5	1	NA	6
Ammonia - Nitrogen	EPA 350.1	5	1	NA	6
Nitrate Nitrogen	EPA 300.0	5	1	NA	6
Nitrite Nitrogen	EPA 300.0	5	1	NA	6
Total Organic Carbon	SM 5310B	5	1	NA	6
Chemical Oxygen Demand	SM 5220C	5	1	NA	6
Total Coliform	SM 9222 B	5	1	NA	6

Notes:

(Q) = Quarterly event

(A) = Annual event

Monitoring wells MW-1, MW-3, MW-6, MW-8, and MW-10 are sampled quarterly. Monitoring wells MW-5A and MW-7 are sampled annually.

GC/MS = Gas chromatography / mass spectrometry

GC/MS - SIM = Gas chromatography / mass spectrometry - selective ion monitoring

mg $CaCO_3$/L = milligrams of calcium carbonate per liter

Table 4-1: Recommended Laboratory Methods and Sample Requirements for Surface Water Sample

Olalla Landfill, Kitsap County, WA

Constituent Group	Analytical Method	Container Type	Handling and Preservation	Holding Time
Fecal Coliform	SM 9222D	300-mL sterile AG	Cool to <4°C	24 hours
Nitrate-Nitrogen	EPA 353.2	500-mL HDPE		48 hours
pH	SM 4500 H+B	250-mL AG		24 hours

Notes:

Surface water sample from SW-2 collected during first quarter or fourth quarter, not both quarters.

AG = amber glass

HDPE = high density polyethylene

mL = milliliter

Appendix B: Olalla Landfill MFS Monitoring Recommended Equipment List

Field Instruments Provided by Consultant:	Example
Multi-parameter meter or individual meters as noted:	YSI 556 or Horiba U-22
pH meter	Orion 250A
Specific conductance meter	YSI Pro 30
Dissolved oxygen meter	YSI Model 50B
ORP meter	YSI ORP15
Turbidity meter	LaMott 2020
Flow-through cell for field parameter instruments	
Landfill gas meter (commonly rented)	Landtech GEM 5000, or equivalent
Water Level Indicator	Solinst, Heron, Slope Indicator

Equipment to Obtain from the County:
Keys to Bandix Road Gate, wells, and gates to flares
Grundfos Rediflow II pump controller and electrical cables

Equipment Provided by Consultant:
Appropriate gas powered generator (Honda eu2000i or equvalent)
Power cord for generator
Extra fuel for generator in DOT-approved container(s)
Field logbook with appropriate field data forms
Pens
Sample bottles and coolers
Spray bottles
Appropriate PPE (see HASP)
5-gallon purge water buckets
Watch or phone for sample times
Utility knife or equivalent
Cell Phone

Expendible Supplies:
Nitrile gloves
Garbage bags
Ziploc-type bags
Paper towels
Ice
Distilled or deionized water
Liquinox™ or equivalent non-phosphate detergent
Chain of custody forms
Strapping tape (if shipping sample coolers)
Clear packing tape (if shipping sample coolers)
Calibration fluids for pH, specific conductance, DO, and ORP
Calibration gases (methane, oxygen, CO_2) and appropriate regulators and hoses
Extra batteries or charging cords for meters and water level indicator

Notes:
DOT = Department of Transportation
CO_2 = Carbon dioxide
HASP = Health and safety plan
ORP = Oxidation reduction potential
PPE = Personal protective equipment
YSI = Yellow Springs Instruments

Multiparameter Probe Calibration Log - Olalla Landfill Groundwater Monitoring

Meter Type	Manufacturer	Model Number	Mfg. Serial#	Rental Co. Serial #	Date	Time

Calibrated to Autocal Solution

Calibration Solution Manufacturer _____ **Lot Number** _____ **Exp. Date** _____

pH = _____ **Turbidity =** _____ **Temperature =** _____

Conductivity = _____ **Dissolved Oxygen =** _____ **ORP =** _____

Comments:

See Cal Sheet

Meter Type	Manufacturer	Model Number	Mfg. Serial#	Rental Co. Serial #	Date	Time

Calibrated to Autocal Solution

Calibration Solution Manufacturer _____ **Lot Number** _____ **Exp. Date** _____

pH = _____ **Turbidity =** _____ **Temperature =** _____

Conductivity = _____ **Dissolved Oxygen =** _____ **ORP =** _____

Comments:

See cal sheet

Instrument Calibration Log - Olalla Landfill Monitoring

Calibrated By: _____ **Date:** _____

Meter Type	Manufacturer	Model Number	Manufacturer Serial #	Rental Co. Serial #	Time
pH					
pH Electrode					

Calibrated: _____ to 4.00 buffer _____ to 7.00 buffer _____ to 10.00 buffer at _____ °C

Slope =_____ Comments:

Meter Type	Manufacturer	Model Number	Manufacturer Serial #	Rental Co. Serial #	Time
Specific Cond.					

Specific Conductance: Calibrated _____µS/cm to _____µS/cm calibration standard

Electrical Conductivity: Calibrated _____µS/cm to _____µS/cm calibration standard at _____ °C

Comments:

Meter Type	Manufacturer	Model Number	Manufacturer Serial #	Rental Co. Serial #	Time
ORP Meter					
ORP Electrode					

Electrode measured _____millivolts at _____ °C using Zobell prepared on / /

Table value for Zobell solution at this temperature is _____mV.

Meter Type	Manufacturer	Model Number	Manufacturer Serial #	Rental Co. Serial #	Time
Turbidity					

Meter reads _____NTUs using_____ NTUs standard Comments:

Meter reads _____NTUs using_____ NTUs standard

Meter Type	Manufacturer	Model Number	Manufacturer Serial #	Rental Co. Serial #	Time
DO Meter					

Air-Calibration: Measured temperature _____ °C corresponds to _____ mg/L DO (from Table I)

Atmospheric pressure / elevation correction factor _____ (from Table II)

Corrected calibration value _____ mg/L DO (Table I value multiplied by Table II value)

Comments:

12/29/20

Field conditions: Overcast 39°F Project 382595

Scope: Q4-2020 GW sampling.

0900 TRC on-site.

0920 Opened wells. Surface water NOT flowing.

0925 Setup on MW-1

0955 Sampling MW-1. Lab did not provide enough bottles for TOC/COD. Called lab. Lab working on delivering missing bottles.

1030 Called PM to update status of missing bottles. Will gauge wells and check flares while waiting on bottle arrival. ART
Sam 716-225-6357

1050 Gauging wells.

1100 Checking Flares.

1135 Flare check complete.

1140 Meeting ART for bottle delivery.

1145 setting up on MW-5A.

1220 Sampled MW-5A.

12/29/20 Project 382595

1305 Sampled MW-3.

1320 Mobilized to MW-10.

1345 Sampled MW-10. Mob to MW-6.

1420 Sampled MW-6. Mob to MW-8.

1505 Sampled MW-8. Mob to MW-7.

1545 Sampled MW-7. Cleaning up site.

1600 TRC off-site to Lab.

NFE

Depth to Water Measurement Field Data - Olalla Landfill Monitoring

Well	Time	Measuring Point Elevation (ft. NGVD[1])	Depth to Water (ft.)	Comments and Well Inspection[2] Notes
MW-1	0937	343.79	80.25	
MW-2	1056	323.25	66.37	
MW-3	1247	296.95	45.67	
MW-4	1101	320.93	63.75	
MW-5	1232	334.17	9.34	
MW-5A	1201	332.53	77.45	
MW-6	1401	271.17	20.61	
MW-7	1519	280.43	25.98	
MW-8	1438	272.85	20.95	
MW-10	1332	279.21	29.96	

Notes:

[1]NGVD = National Geodetic Vertical Datum (1929)

[2]Observations regarding the condition of the well and surrounding area (e.g., protective casing, surface seal, cap, lock, bollards, soil conditions near the well such as depressions, ponded surface water, or other subsidence features, and any installed sampling equipment).

Groundwater Sampling Field Data

TRC Project No./Site: 382595/Kitsap County - Olalla Landfill

Station	MW-1	Date	12/29/20
Sample ID	MW-1	Field Team: (Initials)	WW + ND.
Field Conditions	Overcast 39°F		

Purge Information

Well Diameter (in.)	2"
Well Depth (ft.)	91
Initial Depth to Water (ft.)	80.25
Depth of Water Column	
1 Casing Volume	
Controller Setting (Hz)	210

Purge Method : Submersible pump / Peristaltic Pump / Bladder Pump / Other: : _____

Start Time	0942
End Time	
Total Gallons Purged	

Time	Gallons	pH	Conductivity	NTU	DO	Temp.	ORP	Appearance
0942	0.3	6.76	0.271	3.82	9.59	9.5	192.5	Clear
0945	2.0	5.97	0.269	7.53	9.58	11.0	221.0	" "
0948	3.5	5.79	0.269	2.37	9.57	11.7	229.2	" "
0951	4.8	5.73	0.268	1.63	9.59	12.0	234.5	" "
0954	6.0	5.73	0.268	1.19	9.59	12.0	236.7	" "

Sample Information

Sample Method(s) : Submersible pump / Peristaltic pump / Bladder Pump / Other

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Volatiles and VC	0955	(5) 40-ml VOA	HCL, ice	
Total Coliform		300-ml sterile AG or poly	Na2S2O3	
Geochemical Parameters		Sm OJ	ice	
Nitrate/Cl/Nitrite/SO4/pH		Lg OJ	ice	
TOC/COD/NH3		250-ml AG	H_2SO_4	
Total Metals		500-ml HDPE	HNO_3 to ph<2, ice	
Dissolved Metals		500-ml HDPE	HNO3 to ph<2, ice. **Field filte**	

End Time

Comments / Exceptions:

Groundwater Sampling Field Data

TRC Project No./Site: 382595/Kitsap County - Olalla Landfill

Station	MW-5A	Date	12/29/20
Sample ID	MW-5A	Field Team: (Initials)	WW + NH
Field Conditions	overcast 39°F		

Purge Information

Well Diameter (in.)	2"
Well Depth (ft.)	
Initial Depth to Water (ft.)	77.45
Depth of Water Column	
1 Casing Volume	
Controller Setting (Hz)	20

Purge Method : Submersible pump ~~Peristaltic Pump~~ Bladder Pump Other: : _____

Start Time	1204
End Time	1225
Total Gallons Purged	

Time	Gallons	pH	Conductivity	NTU	DO	Temp.	ORP	Appearance
1204	0.3	6.24	0.239	19.6	10.53	10.5	228.3	clear
1207	1.0	6.19	0.240	13.6	10.57	11.0	228.7	" "
1210	2.0	6.17	0.240	8.36	10.49	11.9	229.0	" "
1213	3.0	6.17	0.239	3.38	10.44	12.2	229.2	" "
1216	3.7	6.19	0.239	1.51	10.41	12.4	228.5	" "
					NFE			

Sample Information

Sample Method(s) : Submersible pump / Peristaltic pump / Bladder Pump / Other

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Volatiles and VC	1220	(5) 40-ml VOA	HCL, ice	
Total Coliform		300-ml sterile AG or poly	Na2S2O3	
Geochemical Parameters		Sm OJ	ice	
Nitrate/Cl/Nitrite/SO4/pH	1220	Lg OJ	ice	
TOC/COD/NH3		250-ml AG	H_2SO_4	
Total Metals		500-ml HDPE	HNO_3 to ph<2, ice	
Dissolved Metals	1220	500-ml HDPE	HNO3 to ph<2, ice. ~~Field filte~~	As, Fe, Mn

End Time

Comments / Exceptions:

Groundwater Sampling Field Data

TRC Project No./Site: 382595/Kitsap County - Olalla Landfill

Station	MW-3	Date	12/29/20
Sample ID	MW-3	Field Team: (Initials)	WW ND
Field Conditions	Overcast		

Purge Information

Well Diameter (in.)	2"
Well Depth (ft.)	
Initial Depth to Water (ft.)	45.67
Depth of Water Column	
1 Casing Volume	
Controller Setting (Hz)	1.55

Purge Method : Submersible pump
Peristaltic Pump
Bladder Pump
Other: :

Start Time	1253
End Time	
Total Gallons Purged	

Time	Gallons	pH	Conductivity	NTU	DO	Temp.	ORP	Appearance
1253	0.4	5.73	0.445	1.61	2.34	10.6	247.4	Black floating particles
1256	1.5	5.69	0.423	0.36	0.74	11.5	245.9	clear
1259	3.4	5.72	0.428	0.22	0.44	11.8	244.8	" "
1302	4.6	5.77	0.245	0.17	0.37	11.7	243.7	" "

NPE

Sample Information

Sample Method(s) : Submersible pump / Peristaltic pump / Bladder Pump / Other

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Volatiles and VC	1305	(5) 40-ml VOA	HCL, ice	
Total Coliform		300-ml sterile AG or poly	Na2S2O3	
Geochemical Parameters		Sm OJ	ice	
Nitrate/Cl/Nitrite/SO4/pH		Lg OJ	ice	
TOC/COD/NH3		250-ml AG	H_2SO_4	
Total Metals		500-ml HDPE	HNO_3 to ph<2, ice	
Dissolved Metals		500-ml HDPE	HNO3 to ph<2, ice. **Field filte**	

End Time

Comments / Exceptions:

Groundwater Sampling Field Data

TRC Project No./Site: 382595/Kitsap County - Olalla Landfill

Station	MW-10	Date	12/29/20
Sample ID	MW-10	Field Team: (Initials)	WW + ND
Field Conditions	overcast		

Purge Information

Well Diameter (in.)	2"
Well Depth (ft.)	
Initial Depth to Water (ft.)	29.96
Depth of Water Column	
1 Casing Volume	
Controller Setting (Hz)	148.7

Purge Method : (Submersible pump) / Peristaltic Pump / Bladder Pump / Other: : _____

Start Time	1335
End Time	
Total Gallons Purged	

Time	Gallons	pH	Conductivity	NTU	DO	Temp.	ORP	Appearance
1335	0.5	6.34	0.490	5.64	1.00	10.8	236.2	clear
1338	2.0	6.37	0.486	1.71	0.47	11.3	235.6	" "
1341	3.2	6.37	0.488	1.21	0.39	11.4	234.7	" "
1344	4.7	6.39	0.487	1.04	0.34	11.4	234.7	" "

NFE

Sample Information

Sample Method(s) : (Submersible pump) / Peristaltic pump / Bladder Pump / Other

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Volatiles and VC	1345	(5) 40-ml VOA	HCL, ice	
Total Coliform		300-ml sterile AG or poly	Na2S2O3	
Geochemical Parameters		Sm OJ	ice	
Nitrate/Cl/Nitrite/SO4/pH		Lg OJ	ice	
TOC/COD/NH3		250-ml AG	H_2SO_4	
Total Metals		500-ml HDPE	HNO_3 to ph<2, ice	
Dissolved Metals		500-ml HDPE	HNO3 to ph<2, ice. **Field filte**	

End Time

Comments / Exceptions:

Groundwater Sampling Field Data

TRC Project No./Site: 382595/Kitsap County - Olalla Landfill

Station	MW-6	Date	12/29/20
Sample ID	MW-6	Field Team: (Initials)	WW FND
Field Conditions	overcast		

Purge Information

Well Diameter (in.)	2"
Well Depth (ft.)	
Initial Depth to Water (ft.)	20.61
Depth of Water Column	
1 Casing Volume	
Controller Setting (Hz)	107.52

Purge Method : ~~Submersible pump~~ → ~~Peristaltic Pump~~ / Bladder Pump / Other: : _____

Start Time	1405
End Time	
Total Gallons Purged	

Time	Gallons	pH	Conductivity	NTU	DO	Temp.	ORP	Appearance
1405	0.3	6.57	0.472	64.2	2.28	10.5	218.2	clear
1408	0.8	6.44	0.469	22.1	0.63	11.7	216.0	" "
1411	1.2	6.44	0.467	8.04	0.45	12.1	207.1	" "
1414	2.2	6.44	0.466	3.84	0.38	12.1	198.0	" "
						NFE		

Sample Information

Sample Method(s) : ~~Submersible pump~~ / Peristaltic pump / Bladder Pump / Other

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Volatiles and VC	1420	(5) 40-ml VOA	HCL, ice	
Total Coliform		300-ml sterile AG or poly	Na2S2O3	
Geochemical Parameters		Sm OJ	ice	
Nitrate/Cl/Nitrite/SO4/pH		Lg OJ	ice	
TOC/COD/NH3		250-ml AG	H_2SO_4	
Total Metals		500-ml HDPE	HNO_3 to ph<2, ice	
Dissolved Metals		500-ml HDPE	HNO3 to ph<2, ice. **Field filte**	

End Time

Comments / Exceptions:

Groundwater Sampling Field Data

TRC Project No./Site: 382595/Kitsap County - Olalla Landfill

Station	MW-8	Date	12/29/20
Sample ID	MW-8	Field Team: (Initials)	WW + ND
Field Conditions	overcast		

Purge Information

Well Diameter (in.)	2"
Well Depth (ft.)	
Initial Depth to Water (ft.)	20.95
Depth of Water Column	
1 Casing Volume	
Controller Setting (Hz)	13.5

Purge Method : ~~Submersible pump~~
Peristaltic Pump
Bladder Pump
Other: : _____

Start Time	1442
End Time	
Total Gallons Purged	

Time	Gallons	pH	Conductivity	NTU	DO	Temp.	ORP	Appearance
1442	0.5	6.82	0.350	24.3	5.99	10.8	158.2	clear
1445	1.2	6.53	0.416	5.29	2.80	11.2	165.9	" "
1448	2.8	6.47	0.427	5.83	1.87	11.5	155.6	" "
1451	3.9	6.47	0.426	5.24	1.86	11.6	147.4	" "
1454	5.0	6.49	0.423	2.19	1.72	11.6	133.2	" "
1457	6.5	6.50	0.423	1.87	1.70	11.6	122.7	" "
1500	8.0	6.52	0.421	1.45	1.67	11.6	115.6	" "
								ND

Sample Information

Sample Method(s) : Submersible pump / Peristaltic pump / Bladder Pump / Other

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Volatiles and VC	1505	(5) 40-ml VOA	HCL, ice	
Total Coliform		300-ml sterile AG or poly	Na2S2O3	
Geochemical Parameters		Sm OJ	ice	
Nitrate/Cl/Nitrite/SO4/pH		Lg OJ	ice	
TOC/COD/NH3		250-ml AG	H_2SO_4	
Total Metals		500-ml HDPE	HNO_3 to ph<2, ice	
Dissolved Metals		500-ml HDPE	HNO3 to ph<2, ice. **Field filte**	

End Time

Comments / Exceptions:

Groundwater Sampling Field Data

TRC Project No./Site: 382595/Kitsap County - Olalla Landfill

Station	MW-7	Date	12/2 5/20
Sample ID	MW-7	Field Team: (Initials)	WW + ND
Field Conditions	Overcast		

Purge Information

Well Diameter (in.)	2"
Well Depth (ft.)	
Initial Depth to Water (ft.)	25.98
Depth of Water Column	
1 Casing Volume	
Controller Setting (Hz)	121.25

Purge Method : ~~Submersible pump~~
Peristaltic Pump
Bladder Pump
Other: : _____

Start Time	1525
End Time	
Total Gallons Purged	

Time	Gallons	pH	Conductivity	NTU	DO	Temp.	ORP	Appearance
1527	0.5	6.70	0.248	4.04	7.44	10.7	109.5	clear
1530	1.0	6.59	0.249	2.49	7.30	11.2	118.6	↓
1533	1.5	6.57	0.249	1.95	7.25	11.3	123.6	↓
1536	2.2	6.57	0.249	1.99	7.22	11.3	131.0	↓
1539	3.0	6.57	0.249	0.79	7.17	11.3	135.4	↓
								ND

Sample Information

Sample Method(s) : Submersible pump / Peristaltic pump / Bladder Pump / Other

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Volatiles and VC	1540	(5) 40-ml VOA	HCL, ice	
Total Coliform	↓	300-ml sterile AG or poly	Na2S2O3	
Geochemical Parameters		Sm OJ	ice	
Nitrate/Cl/Nitrite/SO4/pH		Lg OJ	ice	
TOC/COD/NH3		250-ml AG	H_2SO_4	
Total Metals		500-ml HDPE	HNO_3 to ph<2, ice	
Dissolved Metals	↓	500-ml HDPE	HNO3 to ph<2, ice. **Field filte**	As, Fe, Mn

End Time

Comments / Exceptions:

No water

Surface Water Sampling Field Data - Olalla Landfill Monitoring

Station		Date	
Sample: ID		Field Team: (Initials)	
Field Conditions			

Field Parameter Data

Time	pH	Specific Conductance	Temperature (^{o}C)	Appearance and Flow Rate

Sample Information

Analysis	Time	Bottle Type	Preservative/Filtration	Comments
Fecal Coliform		300-mL sterile AG or poly	Cool to <4^{o}C	
Nitrate-Nitrogen		500-mL HDPE	Cool to <4^{o}C	
pH		125-mL AG	Cool to <4^{o}C	

Sample End Time	

Comments / Exceptions:

Notes: Where multiple visits are required to complete sampling, parameters are to be checked prior to sampling for each visit. Enter data under field comments.

Landfill Gas Monitoring Field Data - Olalla Landfill Monitoring

Instrument Used:	LandTec GEM 2000	Date and Time:	12/29/20
Ambient Temperature:	39°F	Field Team:	WWT ND
Field Conditions:	Overcast 39°F		

Landfill Gas Data

Flare #	Time	Methane (% vol.)	% LEL	Oxygen (% vol.)	Carbon Dioxide (% vol.)	Temperature (°C)	Gas Pressure ("H_2O)
3	1106	0	0	21.8	0	39°F	0.12
1	1120	0.4	6	20.2	1.1	39°F	0.14
2	1131	0	0	21.8	0	39°F	0.16

Comments / Inspection Results[1]

[1]Inspect the following: lock and gate operation, tightness of bolts and clamps, differential settlement, valve operation, debris or breaks in hose barb.

382595 - Olalla, WA

SW-2 GW Sample

N. Dorfner

12/1/21

382595 Olalla Landfill 2/1/21

Scope: Collect GW Sample SW-2 From culvert
Weather: Raining, 50's

Time

0940 N. Dorfner (TRC) on-site.

Culvert has water actively flowing out.
Collect field parameters (below) on water with YSI.
YSI was calibrated earlier.

FIELD PARAMETERS

Temp: 7.7° C
SPC: 0.059 mS/cm
Conductivity: 0.040 mS/cm
pH: 5.22

1015 Collect water sample SW-2.

1040 All gates are locked. N. Dorfner off-site.

Location of SW-2
2/1/21

EQUIPCO

CES LANDTECH MODEL: GEM 2000
CALIBRATION CERTIFICATE

SERVICE TECHNICIAN JA DATE: 12/28/20

INSTRUMENT INFORMATION

RENTAL ID: GEM2000.11

SERIAL NUMBER: 6M0763801

CALIBRATION INFORMATION

1..CALIBRATION GAS: 35 % CO_2 LOT #: 573162

GAS RESPONSE: 35 % CO_2 ±2%

2. CALIBRATION GAS: 50 % Vol. Methane LOT #: 573162

GAS RESPONSE: 50 % Vol. Methane ±2%

OXYGEN RESPONSE IN FRESH AIR ENVIRONMENT: 20.9% ✓

OXYGEN DOWNSCALE RESPONSE CHECKED: 0% WITH 99.9% Nitrogen ✓

THIS INSTRUMENT HAS BEEN CALIBRATED TO STANDARDS SET FORTH BY THE MANUFACTURER

2689 151st Pl NE, Redmond, WA 98052 Phone (888)234-5678 Fax (925)305-1303

EQUIPCO RENTALS

YSI ProDSS RENTAL
CALIBRATION CERTIFICATE

SERVICE TECHNICIAN: QM DATE: 12/28/20

RENTAL CUSTOMER: TRC

INSTRUMENT INFORMATION

RENTAL I.D. NUMBER: YSIPRODSS.05

SERIAL NUMBER: 16F102616

CALIBRATION INFORMATION

PARAMETER:	STANDARD:	PASS ( )	LOT #
1. CONDUCTIVITY	1,000 µMhos	X	55029
2. pH ZERO	pH 7	X	031274
pH SLOPE	pH 4	X	031273
pH SLOPE	pH 10	X	031275
3. DISSOLVED OXYGEN	Air Calibration Barometric pressure = 760mmHg	Y	N/A
~~4. TURBIDITY ZERO~~	~~0.0 NTU's.~~		~~N/A~~
~~TURBIDITY SPAN~~	~~20 NTU's.~~		
5. REDOX (ORP)	231mV (YSI Zobell solution)	Y	121719

Attachment 2:
2020 Quarterly Monitoring Analytical Data Sheets

Analytical Resources, Incorporated
Analytical Chemists and Consultants

02 April 2020

Doug Kunkel
Environmental Partners, Inc.
1180 NW Maple St., Suite 310
Issaquah, WA 98027

RE: Olalla Landfill

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

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

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

Associated Work Order(s)	Associated SDG ID(s)
20C0214	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.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 20C0714	Turn-around Requested: Standard	Page: 1 of 1	
ARI Client Company: TRC Companies	Phone: 395-0016 ~~425-~~	Date: 3/18/20	Ice Present? Yes
Client Contact: Doug Kunkel		No. of Coolers: 1	Cooler Temps: 2.6°C
Client Project Name: Olalla Landfill			
Client Project #: 015334.0000.	Samplers: Eric Caddey		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	VOCs	Vinyl Chloride by SIM	Dissolved Metals	Total Metals	Nitrate, Nitrite, Chl, Sulfate, Cond, Ion Carb, Alkalinity, pH, Ammonia	COD, TOC	Total Coliform	Notes/Comments
Olalla-MW1-3/20	3/17/20	0923	water	9	X	X	X	X	X	X	X	SEE email for full analyte list Dissolved metals were field filtered
Olalla-MW3-3/20		10:45			X	X	X	X	X	X	X	
Olalla-MW10-3/20		12:02			X	X	X	X	X	X	X	
Olalla-MW6-3/20		1532			X	X	X	X	X	X	X	
Olalla-MW8-3/20		1419			X	X	X	X	X	X	X	
Olalla-MW9-3/20		—		↓	X	X	X	X	X	X	X	
Trip Blank	↓	—	↓	2	X							

Comments/Special Instructions
P.O. # 150973

Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
Printed Name: Eric Caddey	Printed Name: Jacob Waltz	Printed Name:	Printed Name:
Company: TRC Companies	Company: ARI	Company:	Company:
Date & Time: 3/18/20 0805	Date & Time: 03/18/2020 0805	Date & Time:	Date & Time:

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: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Olalla-MW1-3/20	20C0214-01	Water	17-Mar-2020 09:23	18-Mar-2020 08:05
Olalla-MW1-3/20	20C0214-02	Water	17-Mar-2020 09:23	18-Mar-2020 08:05
Olalla-MW3-3/20	20C0214-03	Water	17-Mar-2020 10:45	18-Mar-2020 08:05
Olalla-MW3-3/20	20C0214-04	Water	17-Mar-2020 10:45	18-Mar-2020 08:05
Olalla-MW10-3/20	20C0214-05	Water	17-Mar-2020 12:02	18-Mar-2020 08:05
Olalla-MW10-3/20	20C0214-06	Water	17-Mar-2020 12:02	18-Mar-2020 08:05
Olalla-MW6-3/20	20C0214-07	Water	17-Mar-2020 13:32	18-Mar-2020 08:05
Olalla-MW6-3/20	20C0214-08	Water	17-Mar-2020 13:32	18-Mar-2020 08:05
Olalla-MW8-3/20	20C0214-09	Water	17-Mar-2020 14:19	18-Mar-2020 08:05
Olalla-MW8-3/20	20C0214-10	Water	17-Mar-2020 14:19	18-Mar-2020 08:05
Olalla-MW9-3/20	20C0214-11	Water	17-Mar-2020 00:00	18-Mar-2020 08:05
Olalla-MW9-3/20	20C0214-12	Water	17-Mar-2020 00:00	18-Mar-2020 08:05
Trip Blank	20C0214-13	Water	17-Mar-2020 09:23	18-Mar-2020 08:05

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Work Order Case Narrative

Volatiles - EPA Method SW8260C

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements except Bromoform, trans-1,4-Dichloro 2-Butene and Chloromethane which were out of control low and Trichlorofluoromethane which was out of control high . All samples which contain analyte have been flagged with a "Q" qualifier.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS/LCSD percent recoveries and RPD were within control limits.

Volatiles - EPA Method 8260C-SIM (Selected Ion Monitoring)

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

Dissolved Metals - EPA Method 200.8

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

Sample specific QC was performed in association with sample 20C0214-04 in batch BIC0503. The duplicate RPD were within control limits. The matrix spike/matrix spike duplicate percent recoveries and RPD were within control limits.

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Total Metals - EPA Method 6010C

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times except pH and Total Coliform . The holding times were exceeded upon sample receipt.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The LCS and SRM percent recoveries were within control limits.

Sample specific QC was performed in association with sample 20C0214-01 in pH batch BIC0358, Alkalinity batch BIC0359, Total Organic Carbon batch BIC0417, Nitrate + Nitrite batch BIC0460 and Ammonia batch BIC0554 and in association with sample 20C0214-03 in Nitrite batch BIC0366 and Chloride batch BIC0421. The duplicate RPD were within control limits. The matrix spike/matrix spike duplicate percent recoveries and RPD were within control limits.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Printed: 03/18/2020 08:40:54

WORK ORDER

20C0214

Client: Environmental Partners, Inc. **Project Manager:** Kelly Bottem

Project: Olalla Landfill **Project Number:** [none]

Preservation Confirmation

Container ID	Container Type	pH	
20C0214-01 A	Small OJ, 500 mL		
20C0214-01 B	Corning Plastic, 125 mL, Na2S2O3		
20C0214-01 C	Miscellaneous container, 1:1 HN03	<2	Pass (P)
20C0214-01 D	Glass NM, Amber, 250 mL, 9N H2SO4	<2	P
20C0214-01 E	Glass NM, Amber, 250 mL, 9N H2SO4	<2	P
20C0214-01 F	VOA Vial, Clear, 40 mL, HCL		
20C0214-01 G	VOA Vial, Clear, 40 mL, HCL		
20C0214-01 H	VOA Vial, Clear, 40 mL, HCL		
20C0214-02 A	Miscellaneous container, 1:1 HN03 (FF)	<2	P
20C0214-03 A	Small OJ, 500 mL		
20C0214-03 B	Corning Plastic, 125 mL, Na2S2O3		
20C0214-03 C	Miscellaneous container, 1:1 HN03	<2	P
20C0214-03 D	Glass NM, Amber, 250 mL, 9N H2SO4	<2	P
20C0214-03 E	Glass NM, Amber, 250 mL, 9N H2SO4	<2	P
20C0214-03 F	VOA Vial, Clear, 40 mL, HCL		
20C0214-03 G	VOA Vial, Clear, 40 mL, HCL		
20C0214-03 H	VOA Vial, Clear, 40 mL, HCL		
20C0214-04 A	Miscellaneous container, 1:1 HN03 (FF)	<2	P
20C0214-05 A	Small OJ, 500 mL		
20C0214-05 B	Corning Plastic, 125 mL, Na2S2O3		
20C0214-05 C	Miscellaneous container, 1:1 HN03	<2	P
20C0214-05 D	Glass NM, Amber, 250 mL, 9N H2SO4	<2	P
20C0214-05 E	Glass NM, Amber, 250 mL, 9N H2SO4	<2	P
20C0214-05 F	VOA Vial, Clear, 40 mL, HCL		
20C0214-05 G	VOA Vial, Clear, 40 mL, HCL		
20C0214-05 H	VOA Vial, Clear, 40 mL, HCL		
20C0214-06 A	Miscellaneous container, 1:1 HN03 (FF)	<2	P
20C0214-07 A	Small OJ, 500 mL		
20C0214-07 B	Corning Plastic, 125 mL, Na2S2O3		
20C0214-07 C	Miscellaneous container, 1:1 HN03	<2	P
20C0214-07 D	Glass NM, Amber, 250 mL, 9N H2SO4	<2	P
20C0214-07 E	Glass NM, Amber, 250 mL, 9N H2SO4	<2	P
20C0214-07 F	VOA Vial, Clear, 40 mL, HCL		
20C0214-07 G	VOA Vial, Clear, 40 mL, HCL		
20C0214-07 H	VOA Vial, Clear, 40 mL, HCL		

Reviewed By

Date

WORK ORDER

20C0214

Client: Environmental Partners, Inc. **Project Manager:** Kelly Bottem

Project: Olalla Landfill **Project Number:** [none]

20C0214-08 A	Miscellaneous container, 1:1 HN03 (FF)	<2	Pass (PJ)
20C0214-09 A	Small OJ, 500 mL		
20C0214-09 B	Corning Plastic, 125 mL, Na2S2O3		
20C0214-09 C	Miscellaneous container, 1:1 HN03	<2	P
20C0214-09 D	Glass NM, Amber, 250 mL, 9N H2SO4	<2	P
20C0214-09 E	Glass NM, Amber, 250 mL, 9N H2SO4	<2	P
20C0214-09 F	VOA Vial, Clear, 40 mL, HCL		
20C0214-09 G	VOA Vial, Clear, 40 mL, HCL		
20C0214-09 H	VOA Vial, Clear, 40 mL, HCL		
20C0214-10 A	Miscellaneous container, 1:1 HN03 (FF)	<2	P
20C0214-11 A	Small OJ, 500 mL		
20C0214-11 B	Corning Plastic, 125 mL, Na2S2O3		
20C0214-11 C	Miscellaneous container, 1:1 HN03	<2	P
20C0214-11 D	Glass NM, Amber, 250 mL, 9N H2SO4	<2	P
20C0214-11 E	Glass NM, Amber, 250 mL, 9N H2SO4	<2	P
20C0214-11 F	VOA Vial, Clear, 40 mL, HCL		
20C0214-11 G	VOA Vial, Clear, 40 mL, HCL		
20C0214-11 H	VOA Vial, Clear, 40 mL, HCL		
20C0214-12 A	Miscellaneous container, 1:1 HN03 (FF)	<2	P
20C0214-13 A	VOA Vial, Clear, 40 mL, HCL		
20C0214-13 B	VOA Vial, Clear, 40 mL, HCL		

JJW
Preservation Confirmed By

03/18/2020
Date

Reviewed By

Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: TRC

Project Name: Olalla Landfill

COC No(s): ~~NA~~

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 20C0214

Tracking No: ~~NA~~

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the 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 0805 2.6 C

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: D005206

Cooler Accepted by: JSW Date: 03/18/2020 Time: 0805

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
How were bottles sealed in plastic bags?	Individually	Grouped	Not
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?	JSW	YES	NO
Date VOC Trip Blank was made at ARI	NA	03/11/2020	

Were the sample(s) split by ARI? ~~NA~~ YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: JSW Date: 03/18/2020 Time: 0826 Labels checked by: JSW

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

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

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW1-3/20

20C0214-01 (Water)

Volatile Organic Compounds

Method: EPA 8260C — Sampled: 03/17/2020 09:23
Instrument: NT2 Analyst: PKC — Analyzed: 03/20/2020 17:16

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 20C0214-01 G
Preparation Batch: BIC0419 — Sample Size: 10 mL
Prepared: 03/20/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Bromoethane	74-96-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW1-3/20

20C0214-01 (Water)

Volatile Organic Compounds

Method: EPA 8260C — Sampled: 03/17/2020 09:23

Instrument: NT2 Analyst: PKC — Analyzed: 03/20/2020 17:16

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW1-3/20

20C0214-01 (Water)

Volatile Organic Compounds

Method: EPA 8260C — Sampled: 03/17/2020 09:23
Instrument: NT2 Analyst: PKC — Analyzed: 03/20/2020 17:16

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 1,2-Dichloroethane-d4		*80-129 %*	*117*	*%*	
Surrogate: Toluene-d8		*80-120 %*	*96.2*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*91.2*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*101*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW1-3/20

20C0214-01 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260C-SIM — Sampled: 03/17/2020 09:23
Instrument: NT16 Analyst: PB — Analyzed: 03/24/2020 15:04

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 20C0214-01 F
Preparation Batch: BIC0509 — Sample Size: 10 mL
Prepared: 03/24/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*106*	*%*	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW1-3/20

20C0214-01 (Water)

Metals and Metallic Compounds

Method: EPA 6010C — Sampled: 03/17/2020 09:23
Instrument: ICP2 Analyst: SKM — Analyzed: 03/26/2020 13:11

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 20C0214-01 C 01
Preparation Batch: BIC0502 — Sample Size: 25 mL
Prepared: 03/24/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	**10.1**	mg/L	
Potassium	7440-09-7	1	0.500	**0.646**	mg/L	
Sodium	7440-23-5	1	0.500	**4.43**	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW1-3/20

20C0214-01 (Water)

Wet Chemistry

Method: EPA 325.2 — Sampled: 03/17/2020 09:23
Instrument: LACHAT1 Analyst: WCW — Analyzed: 03/20/2020 12:12

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-01 A
Preparation Batch: BIC0421 — Sample Size: 10 mL
Prepared: 03/20/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	**3.59**	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW1-3/20

20C0214-01 (Water)

Wet Chemistry

Method: EPA 353.2 — Sampled: 03/17/2020 09:23
Instrument: [CALC] Analyst: BF — Analyzed: 03/24/2020 14:58

Sample Preparation: Preparation Method: [CALC]; Preparation Batch: [CALC]; Prepared: 03/23/2020; Final Volume: 1 — Extract ID: 20C0214-01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	**0.423**	mg/L	

Instrument: LACHAT1 Analyst: BF — Analyzed: 03/18/2020 16:49

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BIC0366; Prepared: 03/18/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20C0214-01 A

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	ND	mg/L	U

Instrument: LACHAT2 Analyst: WCW — Analyzed: 03/24/2020 14:58

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BIC0460; Prepared: 03/23/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20C0214-01 E

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	**0.423**	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW1-3/20

20C0214-01 (Water)

Wet Chemistry

Method: EPA 410.4 — Sampled: 03/17/2020 09:23
Instrument: UV1800-1 Analyst: JM — Analyzed: 03/31/2020 13:59

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-01 E
Preparation Batch: BIC0639 — Sample Size: 2 mL
Prepared: 03/30/2020 — Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	ND	mg/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW1-3/20

20C0214-01 (Water)

Wet Chemistry

Method: EPA 9060A — Sampled: 03/17/2020 09:23
Instrument: TOC-LCSH Analyst: BF — Analyzed: 03/20/2020 14:28

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-01 D
Preparation Batch: BIC0417 — Sample Size: 20 mL
Prepared: 03/20/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	ND	mg/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW1-3/20

20C0214-01 (Water)

Wet Chemistry

Method: SM 2320 B-97 — Sampled: 03/17/2020 09:23
Instrument: Accumet AB150 Analyst: UW — Analyzed: 03/18/2020 11:05

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-01 A
Preparation Batch: BIC0359 — Sample Size: 100 mL
Prepared: 03/18/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	**47.9**	mg/L CaCO3	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	**47.9**	mg/L CaCO3	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW1-3/20

20C0214-01 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00 — Sampled: 03/17/2020 09:23
Instrument: Accumet AB150 Analyst: UW — Analyzed: 03/18/2020 11:25

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-01 A
Preparation Batch: BIC0358 — Sample Size: 50 mL
Prepared: 03/18/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	**6.14**	pH Units	H

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW1-3/20

20C0214-01 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 03/17/2020 09:23
Instrument: LACHAT2 Analyst: WCW — Analyzed: 03/26/2020 12:04

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-01 E
Preparation Batch: BIC0554 — Sample Size: 10 mL
Prepared: 03/25/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	ND	mg/L	U

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW1-3/20

20C0214-01 (Water)

Microbiology

Method: SM 9222B — Sampled: 03/17/2020 09:23

Instrument: N/A Analyst: UW — Analyzed: 03/19/2020 09:30

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-01

Preparation Batch: BIC0353 — Sample Size: 100 mL

Prepared: 03/18/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	H, U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW1-3/20

20C0214-01RE1 (Water)

Wet Chemistry

Method: EPA 375.2 — Sampled: 03/17/2020 09:23
Instrument: LACHAT1 Analyst: WCW — Analyzed: 03/30/2020 16:44

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-01RE1 A
Preparation Batch: BIC0617 — Sample Size: 10 mL
Prepared: 03/30/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	2.00	2.00	**4.30**	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW1-3/20

20C0214-02 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 — Sampled: 03/17/2020 09:23
Instrument: ICPMS2 Analyst: MCB — Analyzed: 03/30/2020 16:38

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20C0214-02 A 02
Preparation Batch: BIC0503 — Sample Size: 25 mL
Prepared: 03/24/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	1	20.0	ND	ug/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW1-3/20

20C0214-02 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 03/17/2020 09:23
Instrument: ICPMS1 Analyst: MCB — Analyzed: 03/24/2020 18:03

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20C0214-02 A 02
Preparation Batch: BIC0503 — Sample Size: 25 mL
Prepared: 03/24/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	4.00	ND	ug/L	U

Instrument: ICPMS2 Analyst: MCB — Analyzed: 03/31/2020 15:24

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x — Extract ID: 20C0214-02 A 03
Preparation Batch: BIC0622 — Sample Size: 100 mL
Prepared: 03/30/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0400	**0.109**	ug/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW1-3/20

20C0214-02 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010C — Sampled: 03/17/2020 09:23
Instrument: ICP2 Analyst: TCH — Analyzed: 03/25/2020 13:45

Sample Preparation: Preparation Method: WMN (No Prep) — Extract ID: 20C0214-02 A 01
Preparation Batch: BIC0510 — Sample Size: 25 mL
Prepared: 03/24/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0030	**0.0046**	mg/L	
Manganese, Dissolved	7439-96-5	1	0.0010	ND	mg/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW3-3/20

20C0214-03 (Water)

Volatile Organic Compounds

Method: EPA 8260C — Sampled: 03/17/2020 10:45
Instrument: NT2 Analyst: PKC — Analyzed: 03/20/2020 17:36

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 20C0214-03 G
Preparation Batch: BIC0419 — Sample Size: 10 mL
Prepared: 03/20/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Bromoethane	74-96-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW3-3/20

20C0214-03 (Water)

Volatile Organic Compounds

Method: EPA 8260C — Sampled: 03/17/2020 10:45

Instrument: NT2 Analyst: PKC — Analyzed: 03/20/2020 17:36

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW3-3/20

20C0214-03 (Water)

Volatile Organic Compounds

Method: EPA 8260C — Sampled: 03/17/2020 10:45
Instrument: NT2 Analyst: PKC — Analyzed: 03/20/2020 17:36

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 1,2-Dichloroethane-d4		*80-129 %*	*117*	*%*	
Surrogate: Toluene-d8		*80-120 %*	*96.7*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*88.8*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*101*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW3-3/20

20C0214-03 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260C-SIM — Sampled: 03/17/2020 10:45
Instrument: NT16 Analyst: PB — Analyzed: 03/24/2020 15:24

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 20C0214-03 F
Preparation Batch: BIC0509 — Sample Size: 10 mL
Prepared: 03/24/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*105*	*%*	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW3-3/20

20C0214-03 (Water)

Metals and Metallic Compounds

Method: EPA 6010C — Sampled: 03/17/2020 10:45
Instrument: ICP2 Analyst: SKM — Analyzed: 03/26/2020 12:53

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 20C0214-03 C 01
Preparation Batch: BIC0502 — Sample Size: 25 mL
Prepared: 03/24/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	**31.0**	mg/L	
Potassium	7440-09-7	1	0.500	**0.724**	mg/L	
Sodium	7440-23-5	1	0.500	**7.01**	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW3-3/20

20C0214-03 (Water)

Wet Chemistry

Method: EPA 325.2 — Sampled: 03/17/2020 10:45

Instrument: LACHAT1 Analyst: WCW — Analyzed: 03/20/2020 12:13

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-03 A

Preparation Batch: BIC0421 — Sample Size: 10 mL

Prepared: 03/20/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	**5.87**	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW3-3/20

20C0214-03 (Water)

Wet Chemistry

Method: EPA 353.2 — Sampled: 03/17/2020 10:45
Instrument: [CALC] Analyst: WCW — Analyzed: 03/24/2020 15:38

Sample Preparation: Preparation Method: [CALC]; Preparation Batch: [CALC]; Prepared: 03/23/2020; Final Volume: 1 — Extract ID: 20C0214-03

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	5	0.0600	**2.51**	mg/L	

Instrument: LACHAT1 Analyst: BF — Analyzed: 03/18/2020 16:50

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BIC0366; Prepared: 03/18/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20C0214-03 A

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	ND	mg/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW3-3/20

20C0214-03 (Water)

Wet Chemistry

Method: EPA 410.4 — Sampled: 03/17/2020 10:45
Instrument: UV1800-1 Analyst: JM — Analyzed: 03/31/2020 14:11

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-03 E
Preparation Batch: BIC0639 — Sample Size: 2 mL
Prepared: 03/30/2020 — Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	**10.5**	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW3-3/20

20C0214-03 (Water)

Wet Chemistry

Method: EPA 9060A — Sampled: 03/17/2020 10:45
Instrument: TOC-LCSH Analyst: BF — Analyzed: 03/20/2020 15:46

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-03 D
Preparation Batch: BIC0417 — Sample Size: 20 mL
Prepared: 03/20/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	**2.24**	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW3-3/20

20C0214-03 (Water)

Wet Chemistry

Method: SM 2320 B-97 — Sampled: 03/17/2020 10:45
Instrument: Accumet AB150 Analyst: UW — Analyzed: 03/18/2020 11:05

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-03 A
Preparation Batch: BIC0359 — Sample Size: 100 mL
Prepared: 03/18/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	**106**	mg/L CaCO3	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	**106**	mg/L CaCO3	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW3-3/20

20C0214-03 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00 — Sampled: 03/17/2020 10:45
Instrument: Accumet AB150 Analyst: UW — Analyzed: 03/18/2020 11:25

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-03 A
Preparation Batch: BIC0358 — Sample Size: 50 mL
Prepared: 03/18/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	**6.25**	pH Units	H

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW3-3/20

20C0214-03 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 03/17/2020 10:45
Instrument: LACHAT2 Analyst: WCW — Analyzed: 03/26/2020 12:09

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-03 E
Preparation Batch: BIC0554 — Sample Size: 10 mL
Prepared: 03/25/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	ND	mg/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW3-3/20

20C0214-03 (Water)

Microbiology

Method: SM 9222B — Sampled: 03/17/2020 10:45
Instrument: N/A Analyst: UW — Analyzed: 03/19/2020 09:30

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-03
Preparation Batch: BIC0353 — Sample Size: 100 mL
Prepared: 03/18/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	H, U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW3-3/20

20C0214-03RE1 (Water)

Wet Chemistry

Method: EPA 353.2 — Sampled: 03/17/2020 10:45
Instrument: LACHAT2 Analyst: WCW — Analyzed: 03/24/2020 15:38

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-03RE1 E
Preparation Batch: BIC0460 — Sample Size: 10 mL
Prepared: 03/23/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		5	0.050	0.050	**2.51**	mg/L	D

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW3-3/20

20C0214-03RE1 (Water)

Wet Chemistry

Method: EPA 375.2 — Sampled: 03/17/2020 10:45
Instrument: LACHAT1 Analyst: WCW — Analyzed: 03/30/2020 16:45

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-03RE1 A
Preparation Batch: BIC0617 — Sample Size: 10 mL
Prepared: 03/30/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	2	4.00	4.00	**37.4**	mg/L	D

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW3-3/20

20C0214-04 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 — Sampled: 03/17/2020 10:45
Instrument: ICPMS2 Analyst: MCB — Analyzed: 03/30/2020 17:10

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20C0214-04 A 02
Preparation Batch: BIC0503 — Sample Size: 25 mL
Prepared: 03/24/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	1	20.0	ND	ug/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW3-3/20

20C0214-04 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 03/17/2020 10:45
Instrument: ICPMS1 Analyst: MCB — Analyzed: 03/24/2020 18:24

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20C0214-04 A 02
Preparation Batch: BIC0503 — Sample Size: 25 mL
Prepared: 03/24/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	4.00	ND	ug/L	U

Instrument: ICPMS2 Analyst: MCB — Analyzed: 03/31/2020 15:16

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x — Extract ID: 20C0214-04 A 03
Preparation Batch: BIC0625 — Sample Size: 100 mL
Prepared: 03/30/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0400	**0.104**	ug/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW3-3/20

20C0214-04 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010C — Sampled: 03/17/2020 10:45
Instrument: ICP2 Analyst: TCH — Analyzed: 03/25/2020 13:50

Sample Preparation: Preparation Method: WMN (No Prep) — Extract ID: 20C0214-04 A 01
Preparation Batch: BIC0510 — Sample Size: 25 mL
Prepared: 03/24/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0030	**0.0114**	mg/L	
Manganese, Dissolved	7439-96-5	1	0.0010	**4.31**	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW10-3/20

20C0214-05 (Water)

Volatile Organic Compounds

Method: EPA 8260C — Sampled: 03/17/2020 12:02
Instrument: NT2 Analyst: PKC — Analyzed: 03/20/2020 17:56

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 20C0214-05 G
Preparation Batch: BIC0419 — Sample Size: 10 mL
Prepared: 03/20/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Bromoethane	74-96-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW10-3/20

20C0214-05 (Water)

Volatile Organic Compounds

Method: EPA 8260C — Sampled: 03/17/2020 12:02

Instrument: NT2 Analyst: PKC — Analyzed: 03/20/2020 17:56

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW10-3/20

20C0214-05 (Water)

Volatile Organic Compounds

Method: EPA 8260C — Sampled: 03/17/2020 12:02
Instrument: NT2 Analyst: PKC — Analyzed: 03/20/2020 17:56

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 1,2-Dichloroethane-d4		*80-129 %*	*116*	*%*	
Surrogate: Toluene-d8		*80-120 %*	*97.4*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*88.7*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*101*	*%*	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW10-3/20

20C0214-05 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260C-SIM — Sampled: 03/17/2020 12:02
Instrument: NT16 Analyst: PB — Analyzed: 03/24/2020 15:44

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 20C0214-05 F
Preparation Batch: BIC0509 — Sample Size: 10 mL
Prepared: 03/24/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*106*	*%*	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW10-3/20

20C0214-05 (Water)

Metals and Metallic Compounds

Method: EPA 6010C — Sampled: 03/17/2020 12:02
Instrument: ICP2 Analyst: SKM — Analyzed: 03/26/2020 12:58

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 20C0214-05 C 01
Preparation Batch: BIC0502 — Sample Size: 25 mL
Prepared: 03/24/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	**37.7**	mg/L	
Potassium	7440-09-7	1	0.500	**1.40**	mg/L	
Sodium	7440-23-5	1	0.500	**16.8**	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW10-3/20

20C0214-05 (Water)

Wet Chemistry

Method: EPA 353.2 — Sampled: 03/17/2020 12:02
Instrument: [CALC] Analyst: BF — Analyzed: 03/24/2020 15:04

Sample Preparation: Preparation Method: [CALC]; Preparation Batch: [CALC]; Prepared: 03/23/2020; Final Volume: 1 — Extract ID: 20C0214-05

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	ND	mg/L	U

Instrument: LACHAT1 Analyst: BF — Analyzed: 03/18/2020 16:55

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BIC0366; Prepared: 03/18/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20C0214-05 A

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	ND	mg/L	U

Instrument: LACHAT2 Analyst: WCW — Analyzed: 03/24/2020 15:04

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BIC0460; Prepared: 03/23/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20C0214-05 E

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	ND	mg/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW10-3/20

20C0214-05 (Water)

Wet Chemistry

Method: EPA 410.4 — Sampled: 03/17/2020 12:02
Instrument: UV1800-1 Analyst: JM — Analyzed: 03/31/2020 14:12

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-05 E
Preparation Batch: BIC0639 — Sample Size: 2 mL
Prepared: 03/30/2020 — Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	**14.8**	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW10-3/20

20C0214-05 (Water)

Wet Chemistry

Method: EPA 9060A — Sampled: 03/17/2020 12:02
Instrument: TOC-LCSH Analyst: BF — Analyzed: 03/20/2020 16:04

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-05 D
Preparation Batch: BIC0417 — Sample Size: 20 mL
Prepared: 03/20/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	**3.14**	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW10-3/20

20C0214-05 (Water)

Wet Chemistry

Method: SM 2320 B-97 — Sampled: 03/17/2020 12:02
Instrument: Accumet AB150 Analyst: UW — Analyzed: 03/18/2020 11:05

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-05 A
Preparation Batch: BIC0359 — Sample Size: 100 mL
Prepared: 03/18/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	**211**	mg/L CaCO3	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	**211**	mg/L CaCO3	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW10-3/20

20C0214-05 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00 — Sampled: 03/17/2020 12:02
Instrument: Accumet AB150 Analyst: UW — Analyzed: 03/18/2020 11:25

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-05 A
Preparation Batch: BIC0358 — Sample Size: 50 mL
Prepared: 03/18/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	**6.57**	pH Units	H

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW10-3/20

20C0214-05 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 03/17/2020 12:02
Instrument: LACHAT2 Analyst: WCW — Analyzed: 03/26/2020 12:10

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-05 E
Preparation Batch: BIC0554 — Sample Size: 10 mL
Prepared: 03/25/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	**0.083**	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW10-3/20

20C0214-05 (Water)

Microbiology

Method: SM 9222B — Sampled: 03/17/2020 12:02
Instrument: N/A Analyst: UW — Analyzed: 03/19/2020 09:30

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-05
Preparation Batch: BIC0353 — Sample Size: 100 mL
Prepared: 03/18/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	H, U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW10-3/20

20C0214-05RE1 (Water)

Wet Chemistry

Method: EPA 325.2 — Sampled: 03/17/2020 12:02
Instrument: LACHAT1 Analyst: WCW — Analyzed: 03/20/2020 13:27

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-05RE1 A
Preparation Batch: BIC0421 — Sample Size: 10 mL
Prepared: 03/20/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	2	2.00	2.00	**11.2**	mg/L	D

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW10-3/20

20C0214-05RE1 (Water)

Wet Chemistry

Method: EPA 375.2 — Sampled: 03/17/2020 12:02
Instrument: LACHAT1 Analyst: WCW — Analyzed: 03/30/2020 16:46

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-05RE1 A
Preparation Batch: BIC0617 — Sample Size: 10 mL
Prepared: 03/30/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	2.00	2.00	**7.46**	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW10-3/20

20C0214-06 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 — Sampled: 03/17/2020 12:02
Instrument: ICPMS2 Analyst: MCB — Analyzed: 03/30/2020 18:11

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20C0214-06 A 02
Preparation Batch: BIC0503 — Sample Size: 25 mL
Prepared: 03/24/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	1	20.0	ND	ug/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW10-3/20

20C0214-06 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 03/17/2020 12:02
Instrument: ICPMS1 Analyst: MCB — Analyzed: 03/24/2020 18:07

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20C0214-06 A 02
Preparation Batch: BIC0503 — Sample Size: 25 mL
Prepared: 03/24/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	4.00	ND	ug/L	U

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x — Extract ID: 20C0214-06 A 03
Preparation Batch: BIC0622 — Sample Size: 100 mL
Prepared: 03/30/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0400	**1.75**	ug/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW10-3/20

20C0214-06 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010C — Sampled: 03/17/2020 12:02
Instrument: ICP2 Analyst: TCH — Analyzed: 03/25/2020 13:02

Sample Preparation: Preparation Method: WMN (No Prep) — Extract ID: 20C0214-06 A 01
Preparation Batch: BIC0510 — Sample Size: 25 mL
Prepared: 03/24/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0030	**0.0185**	mg/L	
Manganese, Dissolved	7439-96-5	1	0.0010	**4.18**	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW6-3/20

20C0214-07 (Water)

Volatile Organic Compounds

Method: EPA 8260C — Sampled: 03/17/2020 13:32
Instrument: NT2 Analyst: PKC — Analyzed: 03/20/2020 18:17

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 20C0214-07 F
Preparation Batch: BIC0419 — Sample Size: 10 mL
Prepared: 03/20/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Bromoethane	74-96-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW6-3/20

20C0214-07 (Water)

Volatile Organic Compounds

Method: EPA 8260C — Sampled: 03/17/2020 13:32

Instrument: NT2 Analyst: PKC — Analyzed: 03/20/2020 18:17

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	**2.29**	ug/L	
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW6-3/20

20C0214-07 (Water)

Volatile Organic Compounds

Method: EPA 8260C — Sampled: 03/17/2020 13:32
Instrument: NT2 Analyst: PKC — Analyzed: 03/20/2020 18:17

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 1,2-Dichloroethane-d4		*80-129 %*	*113*	*%*	
Surrogate: Toluene-d8		*80-120 %*	*97.2*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*92.4*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*104*	*%*	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW6-3/20

20C0214-07 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260C-SIM — Sampled: 03/17/2020 13:32
Instrument: NT16 Analyst: PB — Analyzed: 03/24/2020 16:05

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 20C0214-07 H
Preparation Batch: BIC0509 — Sample Size: 10 mL
Prepared: 03/24/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*105*	*%*	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW6-3/20

20C0214-07 (Water)

Metals and Metallic Compounds

Method: EPA 6010C — Sampled: 03/17/2020 13:32
Instrument: ICP2 Analyst: SKM — Analyzed: 03/26/2020 13:03

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 20C0214-07 C 01
Preparation Batch: BIC0502 — Sample Size: 25 mL
Prepared: 03/24/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	**9.90**	mg/L	
Potassium	7440-09-7	1	0.500	**0.773**	mg/L	
Sodium	7440-23-5	1	0.500	**5.26**	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW6-3/20

20C0214-07 (Water)

Wet Chemistry

Method: EPA 325.2 — Sampled: 03/17/2020 13:32
Instrument: LACHAT1 Analyst: WCW — Analyzed: 03/20/2020 12:26

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-07 A
Preparation Batch: BIC0421 — Sample Size: 10 mL
Prepared: 03/20/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	**1.29**	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW6-3/20

20C0214-07 (Water)

Wet Chemistry

Method: EPA 353.2 — Sampled: 03/17/2020 13:32
Instrument: [CALC] Analyst: BF — Analyzed: 03/24/2020 15:11

Sample Preparation: Preparation Method: [CALC]; Preparation Batch: [CALC]; Prepared: 03/23/2020; Final Volume: 1 — Extract ID: 20C0214-07

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	**0.306**	mg/L	

Instrument: LACHAT1 Analyst: BF — Analyzed: 03/18/2020 16:56

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BIC0366; Prepared: 03/18/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20C0214-07 A

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	**0.049**	mg/L	

Instrument: LACHAT2 Analyst: WCW — Analyzed: 03/24/2020 15:11

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BIC0460; Prepared: 03/23/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20C0214-07 E

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	**0.355**	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW6-3/20

20C0214-07 (Water)

Wet Chemistry

Method: EPA 410.4 — Sampled: 03/17/2020 13:32
Instrument: UV1800-1 Analyst: JM — Analyzed: 03/31/2020 14:12

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-07 E
Preparation Batch: BIC0639 — Sample Size: 2 mL
Prepared: 03/30/2020 — Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	ND	mg/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW6-3/20

20C0214-07 (Water)

Wet Chemistry

Method: EPA 9060A — Sampled: 03/17/2020 13:32
Instrument: TOC-LCSH Analyst: BF — Analyzed: 03/20/2020 17:05

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-07 D
Preparation Batch: BIC0417 — Sample Size: 20 mL
Prepared: 03/20/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	**2.39**	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW6-3/20

20C0214-07 (Water)

Wet Chemistry

Method: SM 2320 B-97 — Sampled: 03/17/2020 13:32
Instrument: Accumet AB150 Analyst: UW — Analyzed: 03/18/2020 11:05

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-07 A
Preparation Batch: BIC0359 — Sample Size: 100 mL
Prepared: 03/18/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	**57.8**	mg/L CaCO3	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	**57.8**	mg/L CaCO3	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW6-3/20

20C0214-07 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00 — Sampled: 03/17/2020 13:32
Instrument: Accumet AB150 Analyst: UW — Analyzed: 03/18/2020 11:25

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-07 A
Preparation Batch: BIC0358 — Sample Size: 50 mL
Prepared: 03/18/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	**6.42**	pH Units	H

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW6-3/20

20C0214-07 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 03/17/2020 13:32
Instrument: LACHAT2 Analyst: WCW — Analyzed: 03/26/2020 12:11

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-07 E
Preparation Batch: BIC0554 — Sample Size: 10 mL
Prepared: 03/25/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	ND	mg/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW6-3/20

20C0214-07 (Water)

Microbiology

Method: SM 9222B — Sampled: 03/17/2020 13:32
Instrument: N/A Analyst: UW — Analyzed: 03/19/2020 09:30

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-07
Preparation Batch: BIC0353 — Sample Size: 100 mL
Prepared: 03/18/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	H, U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW6-3/20

20C0214-07RE1 (Water)

Wet Chemistry

Method: EPA 375.2 — Sampled: 03/17/2020 13:32
Instrument: LACHAT1 Analyst: WCW — Analyzed: 03/30/2020 16:57

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-07RE1 A
Preparation Batch: BIC0617 — Sample Size: 10 mL
Prepared: 03/30/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	2.00	2.00	**3.12**	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW6-3/20

20C0214-08 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 — Sampled: 03/17/2020 13:32
Instrument: ICPMS2 Analyst: MCB — Analyzed: 03/30/2020 16:46

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20C0214-08 A 02
Preparation Batch: BIC0503 — Sample Size: 25 mL
Prepared: 03/24/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	1	20.0	**68.2**	ug/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW6-3/20

20C0214-08 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 03/17/2020 13:32
Instrument: ICPMS1 Analyst: MCB — Analyzed: 03/24/2020 18:11

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20C0214-08 A 02
Preparation Batch: BIC0503 — Sample Size: 25 mL
Prepared: 03/24/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	4.00	ND	ug/L	U

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x — Extract ID: 20C0214-08 A 03
Preparation Batch: BIC0622 — Sample Size: 100 mL
Prepared: 03/30/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0400	**0.452**	ug/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW6-3/20

20C0214-08 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010C — Sampled: 03/17/2020 13:32
Instrument: ICP2 Analyst: TCH — Analyzed: 03/25/2020 13:54

Sample Preparation: Preparation Method: WMN (No Prep) — Extract ID: 20C0214-08 A 01
Preparation Batch: BIC0510 — Sample Size: 25 mL
Prepared: 03/24/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0030	**0.0057**	mg/L	
Manganese, Dissolved	7439-96-5	1	0.0010	**0.316**	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW8-3/20

20C0214-09 (Water)

Volatile Organic Compounds

Method: EPA 8260C — Sampled: 03/17/2020 14:19
Instrument: NT2 Analyst: PKC — Analyzed: 03/23/2020 14:32

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 20C0214-09 F
Preparation Batch: BIC0462 — Sample Size: 10 mL
Prepared: 03/23/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Bromoethane	74-96-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	**0.20**	ug/L	
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW8-3/20

20C0214-09 (Water)

Volatile Organic Compounds

Method: EPA 8260C — Sampled: 03/17/2020 14:19

Instrument: NT2 Analyst: PKC — Analyzed: 03/23/2020 14:32

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW8-3/20

20C0214-09 (Water)

Volatile Organic Compounds

Method: EPA 8260C — Sampled: 03/17/2020 14:19

Instrument: NT2 Analyst: PKC — Analyzed: 03/23/2020 14:32

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 1,2-Dichloroethane-d4		*80-129 %*	*105*	*%*	
Surrogate: Toluene-d8		*80-120 %*	*95.8*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*94.9*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*104*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW8-3/20

20C0214-09 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260C-SIM — Sampled: 03/17/2020 14:19
Instrument: NT16 Analyst: PB — Analyzed: 03/24/2020 16:25

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 20C0214-09 G
Preparation Batch: BIC0509 — Sample Size: 10 mL
Prepared: 03/24/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*106*	*%*	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW8-3/20

20C0214-09 (Water)

Metals and Metallic Compounds

Method: EPA 6010C — Sampled: 03/17/2020 14:19
Instrument: ICP2 Analyst: SKM — Analyzed: 03/26/2020 14:41

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 20C0214-09 C 01
Preparation Batch: BIC0502 — Sample Size: 25 mL
Prepared: 03/24/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	**21.3**	mg/L	
Potassium	7440-09-7	1	0.500	**1.02**	mg/L	
Sodium	7440-23-5	1	0.500	**9.09**	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW8-3/20

20C0214-09 (Water)

Wet Chemistry

Method: EPA 325.2 — Sampled: 03/17/2020 14:19
Instrument: LACHAT1 Analyst: WCW — Analyzed: 03/20/2020 12:27

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-09 A
Preparation Batch: BIC0421 — Sample Size: 10 mL
Prepared: 03/20/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	**2.27**	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW8-3/20

20C0214-09 (Water)

Wet Chemistry

Method: EPA 353.2 — Sampled: 03/17/2020 14:19
Instrument: [CALC] Analyst: BF — Analyzed: 03/24/2020 15:12

Sample Preparation: Preparation Method: [CALC]; Preparation Batch: [CALC]; Prepared: 03/23/2020; Final Volume: 1 — Extract ID: 20C0214-09

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	**0.0922**	mg/L	

Instrument: LACHAT1 Analyst: BF — Analyzed: 03/18/2020 17:02

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BIC0366; Prepared: 03/18/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20C0214-09 A

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	ND	mg/L	U

Instrument: LACHAT2 Analyst: WCW — Analyzed: 03/24/2020 15:12

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BIC0460; Prepared: 03/23/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20C0214-09 E

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	**0.092**	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW8-3/20

20C0214-09 (Water)

Wet Chemistry

Method: EPA 410.4 — Sampled: 03/17/2020 14:19
Instrument: UV1800-1 Analyst: JM — Analyzed: 03/31/2020 14:13

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-09 E
Preparation Batch: BIC0639 — Sample Size: 2 mL
Prepared: 03/30/2020 — Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	ND	mg/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW8-3/20

20C0214-09 (Water)

Wet Chemistry

Method: EPA 9060A — Sampled: 03/17/2020 14:19
Instrument: TOC-LCSH Analyst: BF — Analyzed: 03/20/2020 17:35

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-09 D
Preparation Batch: BIC0417 — Sample Size: 20 mL
Prepared: 03/20/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	**0.85**	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW8-3/20

20C0214-09 (Water)

Wet Chemistry

Method: SM 2320 B-97 — Sampled: 03/17/2020 14:19
Instrument: Accumet AB150 Analyst: UW — Analyzed: 03/18/2020 11:05

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-09 A
Preparation Batch: BIC0359 — Sample Size: 100 mL
Prepared: 03/18/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	**122**	mg/L CaCO3	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	**122**	mg/L CaCO3	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW8-3/20

20C0214-09 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00 — Sampled: 03/17/2020 14:19
Instrument: Accumet AB150 Analyst: UW — Analyzed: 03/18/2020 11:25

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-09 A
Preparation Batch: BIC0358 — Sample Size: 50 mL
Prepared: 03/18/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	**6.44**	pH Units	H

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW8-3/20

20C0214-09 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 03/17/2020 14:19
Instrument: LACHAT2 Analyst: WCW — Analyzed: 03/26/2020 12:13

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-09 E
Preparation Batch: BIC0554 — Sample Size: 10 mL
Prepared: 03/25/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	ND	mg/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW8-3/20

20C0214-09 (Water)

Microbiology

Method: SM 9222B — Sampled: 03/17/2020 14:19
Instrument: N/A Analyst: UW — Analyzed: 03/19/2020 09:30

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-09
Preparation Batch: BIC0353 — Sample Size: 100 mL
Prepared: 03/18/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	H, U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW8-3/20

20C0214-09RE1 (Water)

Wet Chemistry

Method: EPA 375.2 — Sampled: 03/17/2020 14:19
Instrument: LACHAT1 Analyst: WCW — Analyzed: 03/30/2020 16:59

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-09RE1 A
Preparation Batch: BIC0617 — Sample Size: 10 mL
Prepared: 03/30/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	2.00	2.00	**4.80**	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW8-3/20

20C0214-10 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 — Sampled: 03/17/2020 14:19
Instrument: ICPMS2 Analyst: MCB — Analyzed: 03/30/2020 17:04

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20C0214-10 A 02
Preparation Batch: BIC0503 — Sample Size: 25 mL
Prepared: 03/24/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	2	40.0	**770**	ug/L	D

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW8-3/20

20C0214-10 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 03/17/2020 14:19
Instrument: ICPMS1 Analyst: MCB — Analyzed: 03/24/2020 18:15

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20C0214-10 A 02
Preparation Batch: BIC0503 — Sample Size: 25 mL
Prepared: 03/24/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	4.00	ND	ug/L	U

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x — Extract ID: 20C0214-10 A 03
Preparation Batch: BIC0622 — Sample Size: 100 mL
Prepared: 03/30/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0400	**1.89**	ug/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW8-3/20

20C0214-10 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010C — Sampled: 03/17/2020 14:19
Instrument: ICP2 Analyst: TCH — Analyzed: 03/25/2020 13:59

Sample Preparation: Preparation Method: WMN (No Prep) — Extract ID: 20C0214-10 A 01
Preparation Batch: BIC0510 — Sample Size: 25 mL
Prepared: 03/24/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0030	**0.0080**	mg/L	
Manganese, Dissolved	7439-96-5	1	0.0010	**2.76**	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW9-3/20

20C0214-11 (Water)

Volatile Organic Compounds

Method: EPA 8260C — Sampled: 03/17/2020 00:00
Instrument: NT2 Analyst: PKC — Analyzed: 03/23/2020 14:52

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 20C0214-11 F
Preparation Batch: BIC0462 — Sample Size: 10 mL
Prepared: 03/23/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Bromoethane	74-96-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW9-3/20

20C0214-11 (Water)

Volatile Organic Compounds

Method: EPA 8260C — Sampled: 03/17/2020 00:00
Instrument: NT2 Analyst: PKC — Analyzed: 03/23/2020 14:52

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW9-3/20

20C0214-11 (Water)

Volatile Organic Compounds

Method: EPA 8260C — Sampled: 03/17/2020 00:00

Instrument: NT2 Analyst: PKC — Analyzed: 03/23/2020 14:52

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 1,2-Dichloroethane-d4		*80-129 %*	*109*	*%*	
Surrogate: Toluene-d8		*80-120 %*	*99.1*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*95.6*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*103*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW9-3/20

20C0214-11 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260C-SIM — Sampled: 03/17/2020 00:00
Instrument: NT16 Analyst: PB — Analyzed: 03/24/2020 16:45

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 20C0214-11 G
Preparation Batch: BIC0509 — Sample Size: 10 mL
Prepared: 03/24/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*105*	*%*	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW9-3/20

20C0214-11 (Water)

Metals and Metallic Compounds

Method: EPA 6010C — Sampled: 03/17/2020 00:00
Instrument: ICP2 Analyst: SKM — Analyzed: 03/26/2020 14:45

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 20C0214-11 C 01
Preparation Batch: BIC0502 — Sample Size: 25 mL
Prepared: 03/24/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	**31.7**	mg/L	
Potassium	7440-09-7	1	0.500	**0.717**	mg/L	
Sodium	7440-23-5	1	0.500	**7.02**	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW9-3/20

20C0214-11 (Water)

Wet Chemistry

Method: EPA 325.2 — Sampled: 03/17/2020 00:00

Instrument: LACHAT1 Analyst: WCW — Analyzed: 03/20/2020 12:29

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-11 A

Preparation Batch: BIC0421 — Sample Size: 10 mL

Prepared: 03/20/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	**5.92**	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW9-3/20

20C0214-11 (Water)

Wet Chemistry

Method: EPA 353.2 — Sampled: 03/17/2020 00:00
Instrument: [CALC] Analyst: WCW — Analyzed: 03/24/2020 15:41

Sample Preparation: Preparation Method: [CALC]; Preparation Batch: [CALC]; Prepared: 03/23/2020; Final Volume: 1 — Extract ID: 20C0214-11

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	5	0.0600	**2.51**	mg/L	

Instrument: LACHAT1 Analyst: BF — Analyzed: 03/18/2020 17:03

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BIC0366; Prepared: 03/18/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20C0214-11 A

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	ND	mg/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW9-3/20

20C0214-11 (Water)

Wet Chemistry

Method: EPA 410.4 — Sampled: 03/17/2020 00:00
Instrument: UV1800-1 Analyst: JM — Analyzed: 03/31/2020 14:13

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-11 E
Preparation Batch: BIC0639 — Sample Size: 2 mL
Prepared: 03/30/2020 — Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	ND	mg/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW9-3/20

20C0214-11 (Water)

Wet Chemistry

Method: EPA 9060A — Sampled: 03/17/2020 00:00
Instrument: TOC-LCSH Analyst: BF — Analyzed: 03/20/2020 17:53

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-11 D
Preparation Batch: BIC0417 — Sample Size: 20 mL
Prepared: 03/20/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	**2.17**	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW9-3/20

20C0214-11 (Water)

Wet Chemistry

Method: SM 2320 B-97 — Sampled: 03/17/2020 00:00
Instrument: Accumet AB150 Analyst: UW — Analyzed: 03/18/2020 11:05

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-11 A
Preparation Batch: BIC0359 — Sample Size: 100 mL
Prepared: 03/18/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	**107**	mg/L CaCO3	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	**107**	mg/L CaCO3	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW9-3/20

20C0214-11 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00 — Sampled: 03/17/2020 00:00
Instrument: Accumet AB150 Analyst: UW — Analyzed: 03/18/2020 11:25

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-11 A
Preparation Batch: BIC0358 — Sample Size: 50 mL
Prepared: 03/18/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	**6.23**	pH Units	H

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW9-3/20

20C0214-11 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 03/17/2020 00:00
Instrument: LACHAT2 Analyst: WCW — Analyzed: 03/26/2020 12:14

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-11 E
Preparation Batch: BIC0554 — Sample Size: 10 mL
Prepared: 03/25/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	ND	mg/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW9-3/20

20C0214-11 (Water)

Microbiology

Method: SM 9222B — Sampled: 03/17/2020 00:00
Instrument: N/A Analyst: UW — Analyzed: 03/19/2020 09:30

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-11
Preparation Batch: BIC0353 — Sample Size: 100 mL
Prepared: 03/18/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	H, U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW9-3/20

20C0214-11RE1 (Water)

Wet Chemistry

Method: EPA 353.2 — Sampled: 03/17/2020 00:00
Instrument: LACHAT2 Analyst: WCW — Analyzed: 03/24/2020 15:41

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-11RE1 E
Preparation Batch: BIC0460 — Sample Size: 10 mL
Prepared: 03/23/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		5	0.050	0.050	**2.51**	mg/L	D

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW9-3/20

20C0214-11RE1 (Water)

Wet Chemistry

Method: EPA 375.2 — Sampled: 03/17/2020 00:00

Instrument: LACHAT1 Analyst: WCW — Analyzed: 03/30/2020 17:00

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20C0214-11RE1 A

Preparation Batch: BIC0617 — Sample Size: 10 mL

Prepared: 03/30/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	10	20.0	20.0	**35.8**	mg/L	D

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW9-3/20

20C0214-12 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 — Sampled: 03/17/2020 00:00
Instrument: ICPMS2 Analyst: MCB — Analyzed: 03/30/2020 16:52

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20C0214-12 A 02
Preparation Batch: BIC0503 — Sample Size: 25 mL
Prepared: 03/24/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	1	20.0	ND	ug/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW9-3/20

20C0214-12 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 03/17/2020 00:00
Instrument: ICPMS1 Analyst: MCB — Analyzed: 03/24/2020 18:20

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20C0214-12 A 02
Preparation Batch: BIC0503 — Sample Size: 25 mL
Prepared: 03/24/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	4.00	ND	ug/L	U

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x — Extract ID: 20C0214-12 A 03
Preparation Batch: BIC0622 — Sample Size: 100 mL
Prepared: 03/30/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0400	**0.0944**	ug/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Olalla-MW9-3/20

20C0214-12 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010C — Sampled: 03/17/2020 00:00
Instrument: ICP2 Analyst: TCH — Analyzed: 03/25/2020 14:03

Sample Preparation: Preparation Method: WMN (No Prep) — Extract ID: 20C0214-12 A 01
Preparation Batch: BIC0510 — Sample Size: 25 mL
Prepared: 03/24/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0030	**0.0121**	mg/L	
Manganese, Dissolved	7439-96-5	1	0.0010	**4.31**	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Trip Blank

20C0214-13 (Water)

Volatile Organic Compounds

Method: EPA 8260C — Sampled: 03/17/2020 09:23
Instrument: NT2 Analyst: PKC — Analyzed: 03/20/2020 12:46

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 20C0214-13 A
Preparation Batch: BIC0419 — Sample Size: 10 mL
Prepared: 03/20/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Bromoethane	74-96-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Trip Blank

20C0214-13 (Water)

Volatile Organic Compounds

Method: EPA 8260C — Sampled: 03/17/2020 09:23

Instrument: NT2 Analyst: PKC — Analyzed: 03/20/2020 12:46

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Trip Blank

20C0214-13 (Water)

Volatile Organic Compounds

Method: EPA 8260C — Sampled: 03/17/2020 09:23
Instrument: NT2 Analyst: PKC — Analyzed: 03/20/2020 12:46

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 1,2-Dichloroethane-d4		*80-129 %*	*113*	*%*	
Surrogate: Toluene-d8		*80-120 %*	*96.8*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*92.7*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*101*	*%*	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Trip Blank

20C0214-13 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260C-SIM — Sampled: 03/17/2020 09:23
Instrument: NT16 Analyst: PB — Analyzed: 03/24/2020 13:43

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap) — Extract ID: 20C0214-13 B
Preparation Batch: BIC0509 — Sample Size: 10 mL
Prepared: 03/24/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*96.7*	*%*	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Volatile Organic Compounds - Quality Control

Batch BIC0419 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIC0419-BLK1)			Prepared: 20-Mar-2020 Analyzed: 20-Mar-2020 12:06							
Chloromethane	ND	0.50	ug/L							U
Vinyl Chloride	ND	0.20	ug/L							U
Bromomethane	ND	1.00	ug/L							U
Chloroethane	ND	0.20	ug/L							U
Trichlorofluoromethane	ND	0.20	ug/L							U
Acrolein	ND	5.00	ug/L							U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.20	ug/L							U
Acetone	ND	5.00	ug/L							U
1,1-Dichloroethene	ND	0.20	ug/L							U
Bromoethane	ND	0.20	ug/L							U
Iodomethane	ND	1.00	ug/L							U
Methylene Chloride	ND	1.00	ug/L							U
Acrylonitrile	ND	1.00	ug/L							U
Carbon Disulfide	ND	0.20	ug/L							U
trans-1,2-Dichloroethene	ND	0.20	ug/L							U
Vinyl Acetate	ND	0.20	ug/L							U
1,1-Dichloroethane	ND	0.20	ug/L							U
2-Butanone	ND	5.00	ug/L							U
2,2-Dichloropropane	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Chloroform	ND	0.20	ug/L							U
Bromochloromethane	ND	0.20	ug/L							U
1,1,1-Trichloroethane	ND	0.20	ug/L							U
1,1-Dichloropropene	ND	0.20	ug/L							U
Carbon tetrachloride	ND	0.20	ug/L							U
1,2-Dichloroethane	ND	0.20	ug/L							U
Benzene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
1,2-Dichloropropane	ND	0.20	ug/L							U
Bromodichloromethane	ND	0.20	ug/L							U
Dibromomethane	ND	0.20	ug/L							U
2-Chloroethyl vinyl ether	ND	1.00	ug/L							U
4-Methyl-2-Pentanone	ND	5.00	ug/L							U
cis-1,3-Dichloropropene	ND	0.20	ug/L							U
Toluene	ND	0.20	ug/L							U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Volatile Organic Compounds - Quality Control

Batch BIC0419 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIC0419-BLK1)				Prepared: 20-Mar-2020 Analyzed: 20-Mar-2020 12:06						
trans-1,3-Dichloropropene	ND	0.20	ug/L							U
2-Hexanone	ND	5.00	ug/L							U
1,1,2-Trichloroethane	ND	0.20	ug/L							U
1,3-Dichloropropane	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Dibromochloromethane	ND	0.20	ug/L							U
1,2-Dibromoethane	ND	0.20	ug/L							U
Chlorobenzene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
1,1,1,2-Tetrachloroethane	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Xylenes, total	ND	0.60	ug/L							U
Styrene	ND	0.20	ug/L							U
Bromoform	ND	0.20	ug/L							U
1,1,2,2-Tetrachloroethane	ND	0.20	ug/L							U
1,2,3-Trichloropropane	ND	0.50	ug/L							U
trans-1,4-Dichloro 2-Butene	ND	1.00	ug/L							U
n-Propylbenzene	ND	0.20	ug/L							U
Bromobenzene	ND	0.20	ug/L							U
Isopropyl Benzene	ND	0.20	ug/L							U
2-Chlorotoluene	ND	0.20	ug/L							U
4-Chlorotoluene	ND	0.20	ug/L							U
t-Butylbenzene	ND	0.20	ug/L							U
1,3,5-Trimethylbenzene	ND	0.20	ug/L							U
1,2,4-Trimethylbenzene	ND	0.20	ug/L							U
s-Butylbenzene	ND	0.20	ug/L							U
4-Isopropyl Toluene	ND	0.20	ug/L							U
1,3-Dichlorobenzene	ND	0.20	ug/L							U
1,4-Dichlorobenzene	ND	0.20	ug/L							U
n-Butylbenzene	ND	0.20	ug/L							U
1,2-Dichlorobenzene	ND	0.20	ug/L							U
1,2-Dibromo-3-chloropropane	ND	0.50	ug/L							U
1,2,4-Trichlorobenzene	ND	0.50	ug/L							U
Hexachloro-1,3-Butadiene	ND	0.50	ug/L							U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Volatile Organic Compounds - Quality Control

Batch BIC0419 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIC0419-BLK1)				Prepared: 20-Mar-2020 Analyzed: 20-Mar-2020 12:06						
Naphthalene	ND	0.50	ug/L							U
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U
Dichlorodifluoromethane	ND	0.20	ug/L							U
Methyl tert-butyl Ether	ND	0.50	ug/L							U
2-Pentanone	ND	5.00	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5.37		ug/L	*5.00*		*107*	*80-129*			
Surrogate: Toluene-d8	4.93		ug/L	*5.00*		*98.7*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.70		ug/L	*5.00*		*93.9*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.86		ug/L	*5.00*		*97.2*	*80-120*			
LCS (BIC0419-BS1)				Prepared: 20-Mar-2020 Analyzed: 20-Mar-2020 10:44						
Chloromethane	8.00	0.50	ug/L	10.0		80.0	60-138			
Vinyl Chloride	11.1	0.20	ug/L	10.0		111	66-133			
Bromomethane	11.6	1.00	ug/L	10.0		116	72-131			
Chloroethane	10.9	0.20	ug/L	10.0		109	60-155			
Trichlorofluoromethane	12.2	0.20	ug/L	10.0		122	80-129			Q
Acrolein	56.3	5.00	ug/L	50.0		113	52-144			
1,1,2-Trichloro-1,2,2-Trifluoroethane	11.8	0.20	ug/L	10.0		118	76-129			
Acetone	54.3	5.00	ug/L	50.0		109	58-142			
1,1-Dichloroethene	11.5	0.20	ug/L	10.0		115	69-135			
Bromoethane	11.6	0.20	ug/L	10.0		116	78-128			
Iodomethane	11.2	1.00	ug/L	10.0		112	56-147			
Methylene Chloride	10.9	1.00	ug/L	10.0		109	65-135			
Acrylonitrile	10.4	1.00	ug/L	10.0		104	64-134			
Carbon Disulfide	10.6	0.20	ug/L	10.0		106	78-125			
trans-1,2-Dichloroethene	10.9	0.20	ug/L	10.0		109	78-128			
Vinyl Acetate	10.2	0.20	ug/L	10.0		102	55-138			
1,1-Dichloroethane	10.6	0.20	ug/L	10.0		106	76-124			
2-Butanone	51.3	5.00	ug/L	50.0		103	61-140			
2,2-Dichloropropane	10.8	0.20	ug/L	10.0		108	78-125			
cis-1,2-Dichloroethene	10.2	0.20	ug/L	10.0		102	80-121			
Chloroform	10.2	0.20	ug/L	10.0		102	80-122			
Bromochloromethane	10.3	0.20	ug/L	10.0		103	80-121			
1,1,1-Trichloroethane	10.9	0.20	ug/L	10.0		109	79-123			
1,1-Dichloropropene	10.3	0.20	ug/L	10.0		103	80-120			

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Volatile Organic Compounds - Quality Control

Batch BIC0419 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BIC0419-BS1)				Prepared: 20-Mar-2020 Analyzed: 20-Mar-2020 10:44						
Carbon tetrachloride	10.8	0.20	ug/L	10.0		108	53-137			
1,2-Dichloroethane	10.1	0.20	ug/L	10.0		101	75-123			
Benzene	10.2	0.20	ug/L	10.0		102	80-120			
Trichloroethene	10.4	0.20	ug/L	10.0		104	80-120			
1,2-Dichloropropane	10.4	0.20	ug/L	10.0		104	80-120			
Bromodichloromethane	9.85	0.20	ug/L	10.0		98.5	80-121			
Dibromomethane	10.6	0.20	ug/L	10.0		106	80-120			
2-Chloroethyl vinyl ether	10.3	1.00	ug/L	10.0		103	74-127			
4-Methyl-2-Pentanone	51.4	5.00	ug/L	50.0		103	67-133			
cis-1,3-Dichloropropene	10.6	0.20	ug/L	10.0		106	80-124			
Toluene	10.2	0.20	ug/L	10.0		102	80-120			
trans-1,3-Dichloropropene	10.7	0.20	ug/L	10.0		107	71-127			
2-Hexanone	51.0	5.00	ug/L	50.0		102	69-133			
1,1,2-Trichloroethane	10.2	0.20	ug/L	10.0		102	80-121			
1,3-Dichloropropane	10.4	0.20	ug/L	10.0		104	80-120			
Tetrachloroethene	10.5	0.20	ug/L	10.0		105	80-120			
Dibromochloromethane	9.08	0.20	ug/L	10.0		90.8	65-135			
1,2-Dibromoethane	11.0	0.20	ug/L	10.0		110	80-121			
Chlorobenzene	10.3	0.20	ug/L	10.0		103	80-120			
Ethylbenzene	10.5	0.20	ug/L	10.0		105	80-120			
1,1,1,2-Tetrachloroethane	10.5	0.20	ug/L	10.0		105	80-120			
m,p-Xylene	21.8	0.40	ug/L	20.0		109	80-121			
o-Xylene	11.0	0.20	ug/L	10.0		110	80-121			
Xylenes, total	32.8	0.60	ug/L	30.0		109	76-127			
Styrene	11.0	0.20	ug/L	10.0		110	80-124			
Bromoform	7.05	0.20	ug/L	10.0		70.5	51-134			Q
1,1,2,2-Tetrachloroethane	10.3	0.20	ug/L	10.0		103	77-123			
1,2,3-Trichloropropane	10.4	0.50	ug/L	10.0		104	76-125			
trans-1,4-Dichloro 2-Butene	7.39	1.00	ug/L	10.0		73.9	55-129			Q
n-Propylbenzene	10.6	0.20	ug/L	10.0		106	78-130			
Bromobenzene	10.5	0.20	ug/L	10.0		105	80-120			
Isopropyl Benzene	10.9	0.20	ug/L	10.0		109	80-128			
2-Chlorotoluene	10.8	0.20	ug/L	10.0		108	78-122			
4-Chlorotoluene	11.0	0.20	ug/L	10.0		110	80-121			
t-Butylbenzene	10.9	0.20	ug/L	10.0		109	78-125			

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Volatile Organic Compounds - Quality Control

Batch BIC0419 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BIC0419-BS1)				Prepared: 20-Mar-2020 Analyzed: 20-Mar-2020 10:44						
1,3,5-Trimethylbenzene	11.3	0.20	ug/L	10.0		113	80-129			
1,2,4-Trimethylbenzene	11.3	0.20	ug/L	10.0		113	80-127			
s-Butylbenzene	11.3	0.20	ug/L	10.0		113	78-129			
4-Isopropyl Toluene	11.2	0.20	ug/L	10.0		112	79-130			
1,3-Dichlorobenzene	10.5	0.20	ug/L	10.0		105	80-120			
1,4-Dichlorobenzene	10.3	0.20	ug/L	10.0		103	80-120			
n-Butylbenzene	10.8	0.20	ug/L	10.0		108	74-129			
1,2-Dichlorobenzene	10.4	0.20	ug/L	10.0		104	80-120			
1,2-Dibromo-3-chloropropane	9.44	0.50	ug/L	10.0		94.4	62-123			
1,2,4-Trichlorobenzene	10.1	0.50	ug/L	10.0		101	64-124			
Hexachloro-1,3-Butadiene	9.20	0.50	ug/L	10.0		92.0	58-123			
Naphthalene	9.96	0.50	ug/L	10.0		99.6	50-134			
1,2,3-Trichlorobenzene	10.0	0.50	ug/L	10.0		100	49-133			
Dichlorodifluoromethane	9.96	0.20	ug/L	10.0		99.6	48-147			
Methyl tert-butyl Ether	11.0	0.50	ug/L	10.0		110	71-132			
2-Pentanone	50.9	5.00	ug/L	50.0		102	69-134			
Surrogate: 1,2-Dichloroethane-d4	4.87		ug/L	*5.00*		*97.4*	*80-129*			
Surrogate: Toluene-d8	4.92		ug/L	*5.00*		*98.3*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.33		ug/L	*5.00*		*107*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.97		ug/L	*5.00*		*99.4*	*80-120*			
LCS Dup (BIC0419-BSD1)				Prepared: 20-Mar-2020 Analyzed: 20-Mar-2020 11:05						
Chloromethane	8.12	0.50	ug/L	10.0		81.2	60-138	1.48	30	
Vinyl Chloride	11.0	0.20	ug/L	10.0		110	66-133	0.15	30	
Bromomethane	11.6	1.00	ug/L	10.0		116	72-131	0.72	30	
Chloroethane	11.4	0.20	ug/L	10.0		114	60-155	4.89	30	
Trichlorofluoromethane	12.4	0.20	ug/L	10.0		124	80-129	1.83	30	Q
Acrolein	54.2	5.00	ug/L	50.0		108	52-144	3.82	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	11.7	0.20	ug/L	10.0		117	76-129	0.62	30	
Acetone	54.5	5.00	ug/L	50.0		109	58-142	0.35	30	
1,1-Dichloroethene	11.8	0.20	ug/L	10.0		118	69-135	1.84	30	
Bromoethane	11.6	0.20	ug/L	10.0		116	78-128	0.19	30	
Iodomethane	11.2	1.00	ug/L	10.0		112	56-147	0.35	30	
Methylene Chloride	11.0	1.00	ug/L	10.0		110	65-135	1.25	30	
Acrylonitrile	10.2	1.00	ug/L	10.0		102	64-134	2.71	30	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Volatile Organic Compounds - Quality Control

Batch BIC0419 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BIC0419-BSD1)				Prepared: 20-Mar-2020 Analyzed: 20-Mar-2020 11:05						
Carbon Disulfide	10.6	0.20	ug/L	10.0		106	78-125	0.52	30	
trans-1,2-Dichloroethene	11.1	0.20	ug/L	10.0		111	78-128	1.92	30	
Vinyl Acetate	10.3	0.20	ug/L	10.0		103	55-138	1.08	30	
1,1-Dichloroethane	10.7	0.20	ug/L	10.0		107	76-124	0.21	30	
2-Butanone	51.5	5.00	ug/L	50.0		103	61-140	0.42	30	
2,2-Dichloropropane	10.5	0.20	ug/L	10.0		105	78-125	2.39	30	
cis-1,2-Dichloroethene	10.3	0.20	ug/L	10.0		103	80-121	1.28	30	
Chloroform	10.3	0.20	ug/L	10.0		103	80-122	1.41	30	
Bromochloromethane	10.2	0.20	ug/L	10.0		102	80-121	1.18	30	
1,1,1-Trichloroethane	10.8	0.20	ug/L	10.0		108	79-123	0.78	30	
1,1-Dichloropropene	10.6	0.20	ug/L	10.0		106	80-120	2.56	30	
Carbon tetrachloride	10.9	0.20	ug/L	10.0		109	53-137	0.61	30	
1,2-Dichloroethane	10.2	0.20	ug/L	10.0		102	75-123	0.58	30	
Benzene	10.5	0.20	ug/L	10.0		105	80-120	3.05	30	
Trichloroethene	10.7	0.20	ug/L	10.0		107	80-120	2.64	30	
1,2-Dichloropropane	10.6	0.20	ug/L	10.0		106	80-120	2.06	30	
Bromodichloromethane	10.3	0.20	ug/L	10.0		103	80-121	4.31	30	
Dibromomethane	10.4	0.20	ug/L	10.0		104	80-120	1.42	30	
2-Chloroethyl vinyl ether	10.6	1.00	ug/L	10.0		106	74-127	2.92	30	
4-Methyl-2-Pentanone	53.4	5.00	ug/L	50.0		107	67-133	3.86	30	
cis-1,3-Dichloropropene	10.9	0.20	ug/L	10.0		109	80-124	2.95	30	
Toluene	10.5	0.20	ug/L	10.0		105	80-120	3.01	30	
trans-1,3-Dichloropropene	11.0	0.20	ug/L	10.0		110	71-127	3.34	30	
2-Hexanone	51.7	5.00	ug/L	50.0		103	69-133	1.38	30	
1,1,2-Trichloroethane	10.6	0.20	ug/L	10.0		106	80-121	4.18	30	
1,3-Dichloropropane	10.6	0.20	ug/L	10.0		106	80-120	1.49	30	
Tetrachloroethene	10.6	0.20	ug/L	10.0		106	80-120	0.78	30	
Dibromochloromethane	9.58	0.20	ug/L	10.0		95.8	65-135	5.33	30	
1,2-Dibromoethane	11.0	0.20	ug/L	10.0		110	80-121	0.72	30	
Chlorobenzene	10.6	0.20	ug/L	10.0		106	80-120	2.04	30	
Ethylbenzene	10.7	0.20	ug/L	10.0		107	80-120	1.66	30	
1,1,1,2-Tetrachloroethane	10.9	0.20	ug/L	10.0		109	80-120	3.37	30	
m,p-Xylene	21.6	0.40	ug/L	20.0		108	80-121	0.92	30	
o-Xylene	10.8	0.20	ug/L	10.0		108	80-121	1.88	30	
Xylenes, total	32.4	0.60	ug/L	30.0		108	76-127	1.24	30	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Volatile Organic Compounds - Quality Control

Batch BIC0419 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BIC0419-BSD1)				Prepared: 20-Mar-2020 Analyzed: 20-Mar-2020 11:05						
Styrene	12.0	0.20	ug/L	10.0		120	80-124	8.04	30	
Bromoform	7.05	0.20	ug/L	10.0		70.5	51-134	0.01	30	Q
1,1,2,2-Tetrachloroethane	10.2	0.20	ug/L	10.0		102	77-123	0.75	30	
1,2,3-Trichloropropane	10.1	0.50	ug/L	10.0		101	76-125	2.38	30	
trans-1,4-Dichloro 2-Butene	7.10	1.00	ug/L	10.0		71.0	55-129	4.05	30	Q
n-Propylbenzene	10.2	0.20	ug/L	10.0		102	78-130	3.62	30	
Bromobenzene	10.5	0.20	ug/L	10.0		105	80-120	0.01	30	
Isopropyl Benzene	10.7	0.20	ug/L	10.0		107	80-128	1.94	30	
2-Chlorotoluene	10.2	0.20	ug/L	10.0		102	78-122	6.35	30	
4-Chlorotoluene	10.7	0.20	ug/L	10.0		107	80-121	2.77	30	
t-Butylbenzene	10.4	0.20	ug/L	10.0		104	78-125	4.65	30	
1,3,5-Trimethylbenzene	10.9	0.20	ug/L	10.0		109	80-129	3.75	30	
1,2,4-Trimethylbenzene	11.0	0.20	ug/L	10.0		110	80-127	3.50	30	
s-Butylbenzene	10.4	0.20	ug/L	10.0		104	78-129	7.81	30	
4-Isopropyl Toluene	10.6	0.20	ug/L	10.0		106	79-130	6.39	30	
1,3-Dichlorobenzene	10.3	0.20	ug/L	10.0		103	80-120	1.56	30	
1,4-Dichlorobenzene	10.4	0.20	ug/L	10.0		104	80-120	0.53	30	
n-Butylbenzene	9.75	0.20	ug/L	10.0		97.5	74-129	10.20	30	
1,2-Dichlorobenzene	10.4	0.20	ug/L	10.0		104	80-120	0.48	30	
1,2-Dibromo-3-chloropropane	8.98	0.50	ug/L	10.0		89.8	62-123	4.95	30	
1,2,4-Trichlorobenzene	9.33	0.50	ug/L	10.0		93.3	64-124	8.07	30	
Hexachloro-1,3-Butadiene	7.39	0.50	ug/L	10.0		73.9	58-123	21.80	30	
Naphthalene	9.79	0.50	ug/L	10.0		97.9	50-134	1.79	30	
1,2,3-Trichlorobenzene	9.53	0.50	ug/L	10.0		95.3	49-133	5.24	30	
Dichlorodifluoromethane	10.5	0.20	ug/L	10.0		105	48-147	5.01	30	
Methyl tert-butyl Ether	10.9	0.50	ug/L	10.0		109	71-132	0.08	30	
2-Pentanone	52.3	5.00	ug/L	50.0		105	69-134	2.70	30	
Surrogate: 1,2-Dichloroethane-d4	4.91		ug/L	*5.00*		*98.2*	*80-129*			
Surrogate: Toluene-d8	5.09		ug/L	*5.00*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.24		ug/L	*5.00*		*105*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.88		ug/L	*5.00*		*97.6*	*80-120*			

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Volatile Organic Compounds - Quality Control

Batch BIC0462 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIC0462-BLK2)			Prepared: 23-Mar-2020 Analyzed: 23-Mar-2020 10:35							
Chloromethane	ND	0.50	ug/L							U
Vinyl Chloride	ND	0.20	ug/L							U
Bromomethane	ND	1.00	ug/L							U
Chloroethane	ND	0.20	ug/L							U
Trichlorofluoromethane	ND	0.20	ug/L							U
Acrolein	ND	5.00	ug/L							U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.20	ug/L							U
Acetone	ND	5.00	ug/L							U
1,1-Dichloroethene	ND	0.20	ug/L							U
Bromoethane	ND	0.20	ug/L							U
Iodomethane	ND	1.00	ug/L							U
Methylene Chloride	ND	1.00	ug/L							U
Acrylonitrile	ND	1.00	ug/L							U
Carbon Disulfide	ND	0.20	ug/L							U
trans-1,2-Dichloroethene	ND	0.20	ug/L							U
Vinyl Acetate	ND	0.20	ug/L							U
1,1-Dichloroethane	ND	0.20	ug/L							U
2-Butanone	ND	5.00	ug/L							U
2,2-Dichloropropane	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Chloroform	ND	0.20	ug/L							U
Bromochloromethane	ND	0.20	ug/L							U
1,1,1-Trichloroethane	ND	0.20	ug/L							U
1,1-Dichloropropene	ND	0.20	ug/L							U
Carbon tetrachloride	ND	0.20	ug/L							U
1,2-Dichloroethane	ND	0.20	ug/L							U
Benzene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
1,2-Dichloropropane	ND	0.20	ug/L							U
Bromodichloromethane	ND	0.20	ug/L							U
Dibromomethane	ND	0.20	ug/L							U
2-Chloroethyl vinyl ether	ND	1.00	ug/L							U
4-Methyl-2-Pentanone	ND	5.00	ug/L							U
cis-1,3-Dichloropropene	ND	0.20	ug/L							U
Toluene	ND	0.20	ug/L							U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Volatile Organic Compounds - Quality Control

Batch BIC0462 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIC0462-BLK2)			Prepared: 23-Mar-2020 Analyzed: 23-Mar-2020 10:35							
trans-1,3-Dichloropropene	ND	0.20	ug/L							U
2-Hexanone	ND	5.00	ug/L							U
1,1,2-Trichloroethane	ND	0.20	ug/L							U
1,3-Dichloropropane	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Dibromochloromethane	ND	0.20	ug/L							U
1,2-Dibromoethane	ND	0.20	ug/L							U
Chlorobenzene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
1,1,1,2-Tetrachloroethane	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Xylenes, total	ND	0.60	ug/L							U
Styrene	ND	0.20	ug/L							U
Bromoform	ND	0.20	ug/L							U
1,1,2,2-Tetrachloroethane	ND	0.20	ug/L							U
1,2,3-Trichloropropane	ND	0.50	ug/L							U
trans-1,4-Dichloro 2-Butene	ND	1.00	ug/L							U
n-Propylbenzene	ND	0.20	ug/L							U
Bromobenzene	ND	0.20	ug/L							U
Isopropyl Benzene	ND	0.20	ug/L							U
2-Chlorotoluene	ND	0.20	ug/L							U
4-Chlorotoluene	ND	0.20	ug/L							U
t-Butylbenzene	ND	0.20	ug/L							U
1,3,5-Trimethylbenzene	ND	0.20	ug/L							U
1,2,4-Trimethylbenzene	ND	0.20	ug/L							U
s-Butylbenzene	ND	0.20	ug/L							U
4-Isopropyl Toluene	ND	0.20	ug/L							U
1,3-Dichlorobenzene	ND	0.20	ug/L							U
1,4-Dichlorobenzene	ND	0.20	ug/L							U
n-Butylbenzene	ND	0.20	ug/L							U
1,2-Dichlorobenzene	ND	0.20	ug/L							U
1,2-Dibromo-3-chloropropane	ND	0.50	ug/L							U
1,2,4-Trichlorobenzene	ND	0.50	ug/L							U
Hexachloro-1,3-Butadiene	ND	0.50	ug/L							U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Volatile Organic Compounds - Quality Control

Batch BIC0462 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIC0462-BLK2)				Prepared: 23-Mar-2020 Analyzed: 23-Mar-2020 10:35						
Naphthalene	ND	0.50	ug/L							U
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U
Dichlorodifluoromethane	ND	0.20	ug/L							U
Methyl tert-butyl Ether	ND	0.50	ug/L							U
2-Pentanone	ND	5.00	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5.05		ug/L	*5.00*		*101*	*80-129*			
Surrogate: Toluene-d8	4.90		ug/L	*5.00*		*98.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.97		ug/L	*5.00*		*99.4*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.09		ug/L	*5.00*		*102*	*80-120*			
LCS (BIC0462-BS2)				Prepared: 23-Mar-2020 Analyzed: 23-Mar-2020 09:32						
Chloromethane	7.62	0.50	ug/L	10.0		76.2	60-138			Q
Vinyl Chloride	10.2	0.20	ug/L	10.0		102	66-133			
Bromomethane	11.0	1.00	ug/L	10.0		110	72-131			
Chloroethane	10.2	0.20	ug/L	10.0		102	60-155			
Trichlorofluoromethane	11.0	0.20	ug/L	10.0		110	80-129			
Acrolein	51.9	5.00	ug/L	50.0		104	52-144			
1,1,2-Trichloro-1,2,2-Trifluoroethane	11.1	0.20	ug/L	10.0		111	76-129			
Acetone	51.9	5.00	ug/L	50.0		104	58-142			
1,1-Dichloroethene	10.8	0.20	ug/L	10.0		108	69-135			
Bromoethane	10.9	0.20	ug/L	10.0		109	78-128			
Iodomethane	10.7	1.00	ug/L	10.0		107	56-147			
Methylene Chloride	10.2	1.00	ug/L	10.0		102	65-135			
Acrylonitrile	10.3	1.00	ug/L	10.0		103	64-134			
Carbon Disulfide	10.1	0.20	ug/L	10.0		101	78-125			
trans-1,2-Dichloroethene	10.4	0.20	ug/L	10.0		104	78-128			
Vinyl Acetate	9.93	0.20	ug/L	10.0		99.3	55-138			
1,1-Dichloroethane	10.1	0.20	ug/L	10.0		101	76-124			
2-Butanone	51.0	5.00	ug/L	50.0		102	61-140			
2,2-Dichloropropane	10.4	0.20	ug/L	10.0		104	78-125			
cis-1,2-Dichloroethene	9.83	0.20	ug/L	10.0		98.3	80-121			
Chloroform	9.77	0.20	ug/L	10.0		97.7	80-122			
Bromochloromethane	9.91	0.20	ug/L	10.0		99.1	80-121			
1,1,1-Trichloroethane	10.4	0.20	ug/L	10.0		104	79-123			
1,1-Dichloropropene	10.1	0.20	ug/L	10.0		101	80-120			

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Volatile Organic Compounds - Quality Control

Batch BIC0462 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BIC0462-BS2)				Prepared: 23-Mar-2020 Analyzed: 23-Mar-2020 09:32						
Carbon tetrachloride	10.5	0.20	ug/L	10.0		105	53-137			
1,2-Dichloroethane	9.68	0.20	ug/L	10.0		96.8	75-123			
Benzene	9.91	0.20	ug/L	10.0		99.1	80-120			
Trichloroethene	10.1	0.20	ug/L	10.0		101	80-120			
1,2-Dichloropropane	10.1	0.20	ug/L	10.0		101	80-120			
Bromodichloromethane	10.1	0.20	ug/L	10.0		101	80-121			
Dibromomethane	10.3	0.20	ug/L	10.0		103	80-120			
2-Chloroethyl vinyl ether	10.5	1.00	ug/L	10.0		105	74-127			
4-Methyl-2-Pentanone	51.2	5.00	ug/L	50.0		102	67-133			
cis-1,3-Dichloropropene	10.6	0.20	ug/L	10.0		106	80-124			
Toluene	9.90	0.20	ug/L	10.0		99.0	80-120			
trans-1,3-Dichloropropene	11.2	0.20	ug/L	10.0		112	71-127			
2-Hexanone	50.7	5.00	ug/L	50.0		101	69-133			
1,1,2-Trichloroethane	10.3	0.20	ug/L	10.0		103	80-121			
1,3-Dichloropropane	10.2	0.20	ug/L	10.0		102	80-120			
Tetrachloroethene	10.3	0.20	ug/L	10.0		103	80-120			
Dibromochloromethane	9.66	0.20	ug/L	10.0		96.6	65-135			
1,2-Dibromoethane	11.4	0.20	ug/L	10.0		114	80-121			
Chlorobenzene	10.2	0.20	ug/L	10.0		102	80-120			
Ethylbenzene	10.2	0.20	ug/L	10.0		102	80-120			
1,1,1,2-Tetrachloroethane	10.6	0.20	ug/L	10.0		106	80-120			
m,p-Xylene	21.2	0.40	ug/L	20.0		106	80-121			
o-Xylene	10.7	0.20	ug/L	10.0		107	80-121			
Xylenes, total	31.9	0.60	ug/L	30.0		106	76-127			
Styrene	10.6	0.20	ug/L	10.0		106	80-124			
Bromoform	8.16	0.20	ug/L	10.0		81.6	51-134			
1,1,2,2-Tetrachloroethane	9.92	0.20	ug/L	10.0		99.2	77-123			
1,2,3-Trichloropropane	10.2	0.50	ug/L	10.0		102	76-125			
trans-1,4-Dichloro 2-Butene	8.38	1.00	ug/L	10.0		83.8	55-129			
n-Propylbenzene	10.3	0.20	ug/L	10.0		103	78-130			
Bromobenzene	10.5	0.20	ug/L	10.0		105	80-120			
Isopropyl Benzene	10.6	0.20	ug/L	10.0		106	80-128			
2-Chlorotoluene	10.0	0.20	ug/L	10.0		100	78-122			
4-Chlorotoluene	10.6	0.20	ug/L	10.0		106	80-121			
t-Butylbenzene	10.7	0.20	ug/L	10.0		107	78-125			

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Volatile Organic Compounds - Quality Control

Batch BIC0462 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BIC0462-BS2)				Prepared: 23-Mar-2020 Analyzed: 23-Mar-2020 09:32						
1,3,5-Trimethylbenzene	11.0	0.20	ug/L	10.0		110	80-129			
1,2,4-Trimethylbenzene	11.0	0.20	ug/L	10.0		110	80-127			
s-Butylbenzene	10.8	0.20	ug/L	10.0		108	78-129			
4-Isopropyl Toluene	11.1	0.20	ug/L	10.0		111	79-130			
1,3-Dichlorobenzene	10.1	0.20	ug/L	10.0		101	80-120			
1,4-Dichlorobenzene	10.0	0.20	ug/L	10.0		100	80-120			
n-Butylbenzene	10.4	0.20	ug/L	10.0		104	74-129			
1,2-Dichlorobenzene	10.1	0.20	ug/L	10.0		101	80-120			
1,2-Dibromo-3-chloropropane	10.4	0.50	ug/L	10.0		104	62-123			
1,2,4-Trichlorobenzene	10.4	0.50	ug/L	10.0		104	64-124			
Hexachloro-1,3-Butadiene	9.87	0.50	ug/L	10.0		98.7	58-123			
Naphthalene	10.5	0.50	ug/L	10.0		105	50-134			
1,2,3-Trichlorobenzene	10.4	0.50	ug/L	10.0		104	49-133			
Dichlorodifluoromethane	10.5	0.20	ug/L	10.0		105	48-147			
Methyl tert-butyl Ether	10.6	0.50	ug/L	10.0		106	71-132			
2-Pentanone	50.8	5.00	ug/L	50.0		102	69-134			
Surrogate: 1,2-Dichloroethane-d4	4.71		ug/L	*5.00*		*94.2*	*80-129*			
Surrogate: Toluene-d8	4.98		ug/L	*5.00*		*99.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.20		ug/L	*5.00*		*104*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.91		ug/L	*5.00*		*98.2*	*80-120*			
LCS Dup (BIC0462-BSD2)				Prepared: 23-Mar-2020 Analyzed: 23-Mar-2020 09:52						
Chloromethane	7.34	0.50	ug/L	10.0		73.4	60-138	3.78	30	Q
Vinyl Chloride	10.0	0.20	ug/L	10.0		100	66-133	2.11	30	
Bromomethane	10.8	1.00	ug/L	10.0		108	72-131	2.01	30	
Chloroethane	10.0	0.20	ug/L	10.0		100	60-155	1.53	30	
Trichlorofluoromethane	10.9	0.20	ug/L	10.0		109	80-129	1.33	30	
Acrolein	50.3	5.00	ug/L	50.0		101	52-144	3.04	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	11.2	0.20	ug/L	10.0		112	76-129	0.24	30	
Acetone	50.5	5.00	ug/L	50.0		101	58-142	2.82	30	
1,1-Dichloroethene	10.6	0.20	ug/L	10.0		106	69-135	2.17	30	
Bromoethane	11.0	0.20	ug/L	10.0		110	78-128	1.17	30	
Iodomethane	10.6	1.00	ug/L	10.0		106	56-147	1.49	30	
Methylene Chloride	10.2	1.00	ug/L	10.0		102	65-135	0.03	30	
Acrylonitrile	9.72	1.00	ug/L	10.0		97.2	64-134	5.67	30	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Volatile Organic Compounds - Quality Control

Batch BIC0462 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BIC0462-BSD2)				Prepared: 23-Mar-2020 Analyzed: 23-Mar-2020 09:52						
Carbon Disulfide	9.89	0.20	ug/L	10.0		98.9	78-125	1.68	30	
trans-1,2-Dichloroethene	10.0	0.20	ug/L	10.0		100	78-128	3.45	30	
Vinyl Acetate	9.98	0.20	ug/L	10.0		99.8	55-138	0.48	30	
1,1-Dichloroethane	10.2	0.20	ug/L	10.0		102	76-124	0.96	30	
2-Butanone	50.0	5.00	ug/L	50.0		100	61-140	1.93	30	
2,2-Dichloropropane	10.3	0.20	ug/L	10.0		103	78-125	1.41	30	
cis-1,2-Dichloroethene	10.0	0.20	ug/L	10.0		100	80-121	2.14	30	
Chloroform	9.84	0.20	ug/L	10.0		98.4	80-122	0.67	30	
Bromochloromethane	10.2	0.20	ug/L	10.0		102	80-121	2.46	30	
1,1,1-Trichloroethane	10.5	0.20	ug/L	10.0		105	79-123	1.10	30	
1,1-Dichloropropene	10.5	0.20	ug/L	10.0		105	80-120	3.44	30	
Carbon tetrachloride	11.0	0.20	ug/L	10.0		110	53-137	4.15	30	
1,2-Dichloroethane	10.1	0.20	ug/L	10.0		101	75-123	4.02	30	
Benzene	10.0	0.20	ug/L	10.0		100	80-120	1.35	30	
Trichloroethene	10.4	0.20	ug/L	10.0		104	80-120	2.48	30	
1,2-Dichloropropane	10.1	0.20	ug/L	10.0		101	80-120	0.61	30	
Bromodichloromethane	10.1	0.20	ug/L	10.0		101	80-121	0.64	30	
Dibromomethane	10.3	0.20	ug/L	10.0		103	80-120	0.34	30	
2-Chloroethyl vinyl ether	10.4	1.00	ug/L	10.0		104	74-127	0.96	30	
4-Methyl-2-Pentanone	51.5	5.00	ug/L	50.0		103	67-133	0.46	30	
cis-1,3-Dichloropropene	10.9	0.20	ug/L	10.0		109	80-124	2.72	30	
Toluene	10.1	0.20	ug/L	10.0		101	80-120	1.65	30	
trans-1,3-Dichloropropene	10.8	0.20	ug/L	10.0		108	71-127	3.21	30	
2-Hexanone	50.8	5.00	ug/L	50.0		102	69-133	0.24	30	
1,1,2-Trichloroethane	10.4	0.20	ug/L	10.0		104	80-121	0.08	30	
1,3-Dichloropropane	10.4	0.20	ug/L	10.0		104	80-120	2.29	30	
Tetrachloroethene	10.7	0.20	ug/L	10.0		107	80-120	3.70	30	
Dibromochloromethane	9.98	0.20	ug/L	10.0		99.8	65-135	3.24	30	
1,2-Dibromoethane	10.8	0.20	ug/L	10.0		108	80-121	5.72	30	
Chlorobenzene	10.4	0.20	ug/L	10.0		104	80-120	1.53	30	
Ethylbenzene	10.5	0.20	ug/L	10.0		105	80-120	2.99	30	
1,1,1,2-Tetrachloroethane	10.8	0.20	ug/L	10.0		108	80-120	1.61	30	
m,p-Xylene	21.5	0.40	ug/L	20.0		108	80-121	1.48	30	
o-Xylene	10.9	0.20	ug/L	10.0		109	80-121	1.38	30	
Xylenes, total	32.4	0.60	ug/L	30.0		108	76-127	1.45	30	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Volatile Organic Compounds - Quality Control

Batch BIC0462 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BIC0462-BSD2)				Prepared: 23-Mar-2020 Analyzed: 23-Mar-2020 09:52						
Styrene	11.7	0.20	ug/L	10.0		117	80-124	9.71	30	
Bromoform	8.60	0.20	ug/L	10.0		86.0	51-134	5.29	30	
1,1,2,2-Tetrachloroethane	10.2	0.20	ug/L	10.0		102	77-123	2.36	30	
1,2,3-Trichloropropane	10.2	0.50	ug/L	10.0		102	76-125	0.57	30	
trans-1,4-Dichloro 2-Butene	8.88	1.00	ug/L	10.0		88.8	55-129	5.79	30	
n-Propylbenzene	10.4	0.20	ug/L	10.0		104	78-130	0.49	30	
Bromobenzene	10.6	0.20	ug/L	10.0		106	80-120	1.13	30	
Isopropyl Benzene	10.8	0.20	ug/L	10.0		108	80-128	1.89	30	
2-Chlorotoluene	10.5	0.20	ug/L	10.0		105	78-122	4.40	30	
4-Chlorotoluene	10.8	0.20	ug/L	10.0		108	80-121	2.39	30	
t-Butylbenzene	11.0	0.20	ug/L	10.0		110	78-125	2.97	30	
1,3,5-Trimethylbenzene	11.0	0.20	ug/L	10.0		110	80-129	0.25	30	
1,2,4-Trimethylbenzene	10.9	0.20	ug/L	10.0		109	80-127	0.78	30	
s-Butylbenzene	11.1	0.20	ug/L	10.0		111	78-129	3.00	30	
4-Isopropyl Toluene	11.3	0.20	ug/L	10.0		113	79-130	1.70	30	
1,3-Dichlorobenzene	10.4	0.20	ug/L	10.0		104	80-120	2.22	30	
1,4-Dichlorobenzene	10.3	0.20	ug/L	10.0		103	80-120	2.63	30	
n-Butylbenzene	10.8	0.20	ug/L	10.0		108	74-129	3.44	30	
1,2-Dichlorobenzene	10.4	0.20	ug/L	10.0		104	80-120	2.59	30	
1,2-Dibromo-3-chloropropane	10.0	0.50	ug/L	10.0		100	62-123	3.60	30	
1,2,4-Trichlorobenzene	10.4	0.50	ug/L	10.0		104	64-124	0.17	30	
Hexachloro-1,3-Butadiene	10.5	0.50	ug/L	10.0		105	58-123	6.06	30	
Naphthalene	10.1	0.50	ug/L	10.0		101	50-134	4.13	30	
1,2,3-Trichlorobenzene	10.3	0.50	ug/L	10.0		103	49-133	1.11	30	
Dichlorodifluoromethane	9.04	0.20	ug/L	10.0		90.4	48-147	15.00	30	
Methyl tert-butyl Ether	10.5	0.50	ug/L	10.0		105	71-132	0.18	30	
2-Pentanone	51.4	5.00	ug/L	50.0		103	69-134	1.19	30	
Surrogate: 1,2-Dichloroethane-d4	4.70		ug/L	*5.00*		*94.0*	*80-129*			
Surrogate: Toluene-d8	4.95		ug/L	*5.00*		*99.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.31		ug/L	*5.00*		*106*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.93		ug/L	*5.00*		*98.6*	*80-120*			

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Volatile Organic Compounds - SIM - Quality Control

Batch BIC0509 - EPA 5030 (Purge and Trap)

Instrument: NT16 Analyst: PB

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIC0509-BLK1)				Prepared: 24-Mar-2020 Analyzed: 24-Mar-2020 12:55						
Vinyl chloride	ND	20.0	ng/L							U
Surrogate: 1,2-Dichloroethane-d4	4870		ng/L	*5000*		*97.3*	*80-129*			
LCS (BIC0509-BS1)				Prepared: 24-Mar-2020 Analyzed: 24-Mar-2020 09:44						
Vinyl chloride	1990	20.0	ng/L	2000		99.3	76-120			
Surrogate: 1,2-Dichloroethane-d4	5030		ng/L	*5000*		*101*	*80-129*			
LCS Dup (BIC0509-BSD1)				Prepared: 24-Mar-2020 Analyzed: 24-Mar-2020 10:34						
Vinyl chloride	1830	20.0	ng/L	2000		91.4	76-120	8.26	30	
Surrogate: 1,2-Dichloroethane-d4	5060		ng/L	*5000*		*101*	*80-129*			

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Metals and Metallic Compounds - Quality Control

Batch BIC0502 - TWC EPA 3010A

Instrument: ICP2 Analyst: SKM

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIC0502-BLK1)			Prepared: 24-Mar-2020 Analyzed: 26-Mar-2020 12:49							
Calcium	ND	0.0500	mg/L							U
Potassium	ND	0.500	mg/L							U
Sodium	ND	0.500	mg/L							U
LCS (BIC0502-BS1)			Prepared: 24-Mar-2020 Analyzed: 26-Mar-2020 13:25							
Calcium	9.67	0.0500	mg/L	10.0		96.7	80-120			
Potassium	9.89	0.500	mg/L	10.0		98.9	80-120			
Sodium	9.88	0.500	mg/L	10.0		98.8	80-120			
Duplicate (BIC0502-DUP2)	**Source: 20C0214-01**		Prepared: 24-Mar-2020 Analyzed: 26-Mar-2020 13:07							
Calcium	10.2	0.0500	mg/L		10.1			1.43	20	
Potassium	0.632	0.500	mg/L		0.646			2.13	20	
Sodium	4.39	0.500	mg/L		4.43			0.92	20	
Matrix Spike (BIC0502-MS2)	**Source: 20C0214-01**		Prepared: 24-Mar-2020 Analyzed: 26-Mar-2020 13:15							
Calcium	19.2	0.0500	mg/L	10.0	10.1	91.3	75-125			
Potassium	10.2	0.500	mg/L	10.0	0.646	95.9	75-125			
Sodium	13.9	0.500	mg/L	10.0	4.43	94.9	75-125			

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

Matrix Spike Dup (BIC0502-MSD2)	**Source: 20C0214-01**		Prepared: 24-Mar-2020 Analyzed: 26-Mar-2020 13:20							
Calcium	20.3	0.0500	mg/L	10.0	10.1	102	75-125	5.36	20	
Potassium	10.6	0.500	mg/L	10.0	0.646	99.3	75-125	3.20	20	
Sodium	14.4	0.500	mg/L	10.0	4.43	99.4	75-125	3.15	20	

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BIC0503 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIC0503-BLK1)				Prepared: 24-Mar-2020 Analyzed: 24-Mar-2020 17:13							
Zinc, Dissolved	66	ND	4.00	ug/L							U
Zinc, Dissolved	67	ND	4.00	ug/L							U
LCS (BIC0503-BS1)				Prepared: 24-Mar-2020 Analyzed: 24-Mar-2020 17:17							
Zinc, Dissolved	66	80.4	4.00	ug/L	80.0		101	80-120			
Zinc, Dissolved	67	74.2	4.00	ug/L	80.0		92.8	80-120			
Duplicate (BIC0503-DUP2)		**Source: 20C0214-04**		Prepared: 24-Mar-2020 Analyzed: 24-Mar-2020 18:29							
Zinc, Dissolved	66	ND	4.00	ug/L		ND					U
Matrix Spike (BIC0503-MS2)		**Source: 20C0214-04**		Prepared: 24-Mar-2020 Analyzed: 24-Mar-2020 18:33							
Zinc, Dissolved	66	73.5	4.00	ug/L	80.0	ND	89.7	75-125			

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

Matrix Spike Dup (BIC0503-MSD2)		**Source: 20C0214-04**		Prepared: 24-Mar-2020 Analyzed: 24-Mar-2020 18:38							
Zinc, Dissolved	66	72.2	4.00	ug/L	80.0	ND	88.1	75-125	1.73	20	

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

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIC0503-BLK2)				Prepared: 24-Mar-2020 Analyzed: 30-Mar-2020 15:28							
Iron, Dissolved	54	ND	20.0	ug/L							U
Iron, Dissolved	57	ND	20.0	ug/L							U
LCS (BIC0503-BS2)				Prepared: 24-Mar-2020 Analyzed: 30-Mar-2020 15:33							
Iron, Dissolved	54	5280	20.0	ug/L	5000		106	80-120			
Iron, Dissolved	57	5040	20.0	ug/L	5000		101	80-120			
Duplicate (BIC0503-DUP4)		**Source: 20C0214-04**		Prepared: 24-Mar-2020 Analyzed: 30-Mar-2020 17:16							
Iron, Dissolved	54	ND	20.0	ug/L		ND					U
Matrix Spike (BIC0503-MS4)		**Source: 20C0214-04**		Prepared: 24-Mar-2020 Analyzed: 30-Mar-2020 17:22							
Iron, Dissolved	54	4930	20.0	ug/L	5000	ND	98.2	75-125			

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BIC0503 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BIC0503-MSD4)		**Source: 20C0214-04**			Prepared: 24-Mar-2020 Analyzed: 30-Mar-2020 17:27						
Iron, Dissolved	54	4950	20.0	ug/L	5000	ND	98.7	75-125	0.50	20	

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BIC0510 - WMN (No Prep)

Instrument: ICP2 Analyst: TCH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIC0510-BLK1)			Prepared: 24-Mar-2020 Analyzed: 25-Mar-2020 12:45							
Barium, Dissolved	ND	0.0030	mg/L							U
Manganese, Dissolved	ND	0.0010	mg/L							U
LCS (BIC0510-BS1)			Prepared: 24-Mar-2020 Analyzed: 25-Mar-2020 13:18							
Barium, Dissolved	2.12	0.0030	mg/L	2.00		106	80-120			
Manganese, Dissolved	0.516	0.0010	mg/L	0.500		103	80-120			
Duplicate (BIC0510-DUP1)	**Source: 20C0214-06**		Prepared: 24-Mar-2020 Analyzed: 25-Mar-2020 12:58							
Barium, Dissolved	0.0179	0.0030	mg/L		0.0185			3.60	20	
Manganese, Dissolved	4.17	0.0010	mg/L		4.18			0.33	20	
Matrix Spike (BIC0510-MS1)	**Source: 20C0214-06**		Prepared: 24-Mar-2020 Analyzed: 25-Mar-2020 13:07							
Barium, Dissolved	2.10	0.0030	mg/L	2.00	0.0185	104	75-125			
Manganese, Dissolved	4.68	0.0010	mg/L	0.500	4.18	98.7	75-125			

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

Matrix Spike Dup (BIC0510-MSD1)	**Source: 20C0214-06**		Prepared: 24-Mar-2020 Analyzed: 25-Mar-2020 13:12							
Barium, Dissolved	2.10	0.0030	mg/L	2.00	0.0185	104	75-125	0.21	20	
Manganese, Dissolved	4.63	0.0010	mg/L	0.500	4.18	89.0	75-125	1.05	20	

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BIC0622 - RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIC0622-BLK1)				Prepared: 30-Mar-2020 Analyzed: 31-Mar-2020 14:57							
Arsenic, Dissolved	75a	ND	0.0400	ug/L							U
LCS (BIC0622-BS1)				Prepared: 30-Mar-2020 Analyzed: 31-Mar-2020 14:49							
Arsenic, Dissolved	75a	5.31	0.0400	ug/L	5.00		106	80-120			
LCS Dup (BIC0622-BSD1)				Prepared: 30-Mar-2020 Analyzed: 31-Mar-2020 14:53							
Arsenic, Dissolved	75a	5.37	0.0400	ug/L	5.00		107	80-120	1.09	20	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BIC0625 - RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIC0625-BLK1)				Prepared: 30-Mar-2020 Analyzed: 31-Mar-2020 15:02							
Arsenic, Dissolved	75a	ND	0.0400	ug/L							U
LCS (BIC0625-BS1)				Prepared: 30-Mar-2020 Analyzed: 31-Mar-2020 15:07							
Arsenic, Dissolved	75a	4.97	0.0400	ug/L	5.00		99.5	80-120			
LCS Dup (BIC0625-BSD1)				Prepared: 30-Mar-2020 Analyzed: 31-Mar-2020 15:11							
Arsenic, Dissolved	75a	4.92	0.0400	ug/L	5.00		98.5	80-120	1.03	20	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Wet Chemistry - Quality Control

Batch BIC0358 - No Prep Wet Chem

Instrument: Accumet AB150 Analyst: UW

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BIC0358-BS1)				Prepared: 18-Mar-2020 Analyzed: 18-Mar-2020 11:25							
pH	6.97	0.01	0.01	pH Units	7.00		99.6	99.2-100.8			
Duplicate (BIC0358-DUP1)		**Source: 20C0214-01**		Prepared: 18-Mar-2020 Analyzed: 18-Mar-2020 11:25							
pH	6.16	0.01	0.01	pH Units		6.14			0.33	20	H

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Wet Chemistry - Quality Control

Batch BIC0359 - No Prep Wet Chem

Instrument: Accumet AB150 Analyst: UW

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIC0359-BLK1)					Prepared: 18-Mar-2020 Analyzed: 18-Mar-2020 11:05						
Alkalinity, Total	ND	1.00	1.00	mg/L CaCO3							U
Duplicate (BIC0359-DUP1)			**Source: 20C0214-01**		Prepared: 18-Mar-2020 Analyzed: 18-Mar-2020 11:05						
Alkalinity, Total	47.3	1.00	1.00	mg/L CaCO3		47.9			1.30	20	
Reference (BIC0359-SRM1)					Prepared: 18-Mar-2020 Analyzed: 18-Mar-2020 11:05						
Alkalinity, Total	105	1.00	1.00	mg/L CaCO3	106		99.2	90.57-107.55			

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Wet Chemistry - Quality Control

Batch BIC0366 - No Prep Wet Chem

Instrument: LACHAT1 Analyst: BF

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIC0366-BLK1)				Prepared: 18-Mar-2020 Analyzed: 18-Mar-2020 16:47							
Nitrite-N	ND	0.010	0.010	mg/L							U
LCS (BIC0366-BS1)				Prepared: 18-Mar-2020 Analyzed: 18-Mar-2020 16:48							
Nitrite-N	0.503	0.010	0.010	mg/L	0.500		101	75-125			
Duplicate (BIC0366-DUP1)		**Source: 20C0214-03**		Prepared: 18-Mar-2020 Analyzed: 18-Mar-2020 16:52							
Nitrite-N	ND	0.010	0.010	mg/L		ND					U
Matrix Spike (BIC0366-MS1)		**Source: 20C0214-03**		Prepared: 18-Mar-2020 Analyzed: 18-Mar-2020 16:53							
Nitrite-N	0.498	0.010	0.010	mg/L	0.500	ND	99.6	75-125			

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

Matrix Spike Dup (BIC0366-MSD1)		**Source: 20C0214-03**		Prepared: 18-Mar-2020 Analyzed: 18-Mar-2020 16:54							
Nitrite-N	0.504	0.010	0.010	mg/L	0.500	ND	101	75-125	1.20	200	

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Wet Chemistry - Quality Control

Batch BIC0417 - No Prep Wet Chem

Instrument: TOC-LCSH Analyst: BF

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIC0417-BLK1)					Prepared: 20-Mar-2020 Analyzed: 20-Mar-2020 13:43						
Total Organic Carbon	ND	0.50	0.50	mg/L							U
LCS (BIC0417-BS1)					Prepared: 20-Mar-2020 Analyzed: 20-Mar-2020 14:06						
Total Organic Carbon	20.83	0.50	0.50	mg/L	20.00		104	90-110			
Duplicate (BIC0417-DUP1)		**Source: 20C0214-01**			Prepared: 20-Mar-2020 Analyzed: 20-Mar-2020 14:49						
Total Organic Carbon	ND	0.50	0.50	mg/L		ND					U
Matrix Spike (BIC0417-MS1)		**Source: 20C0214-01**			Prepared: 20-Mar-2020 Analyzed: 20-Mar-2020 15:07						
Total Organic Carbon	16.97	0.50	0.50	mg/L	20.00	ND	84.8	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BIC0417-MSD1)		**Source: 20C0214-01**			Prepared: 20-Mar-2020 Analyzed: 20-Mar-2020 15:26						
Total Organic Carbon	17.17	0.50	0.50	mg/L	20.00	ND	85.8	75-125	1.17	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Wet Chemistry - Quality Control

Batch BIC0421 - No Prep Wet Chem

Instrument: LACHAT1 Analyst: WCW

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIC0421-BLK1)				Prepared: 20-Mar-2020 Analyzed: 20-Mar-2020 12:06							
Chloride	ND	1.00	1.00	mg/L							U
LCS (BIC0421-BS1)				Prepared: 20-Mar-2020 Analyzed: 20-Mar-2020 12:07							
Chloride	5.03	1.00	1.00	mg/L	5.00		101	90-110			
Duplicate (BIC0421-DUP1)		**Source: 20C0214-03**		Prepared: 20-Mar-2020 Analyzed: 20-Mar-2020 12:15							
Chloride	5.93	1.00	1.00	mg/L		5.87			1.02	20	
Matrix Spike (BIC0421-MS2)		**Source: 20C0214-03**		Prepared: 20-Mar-2020 Analyzed: 20-Mar-2020 13:24							
Chloride	33.9	1.00	5.00	mg/L	25.0	5.87	112	75-125			D

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

Matrix Spike Dup (BIC0421-MSD2)		**Source: 20C0214-03**		Prepared: 20-Mar-2020 Analyzed: 20-Mar-2020 13:25							
Chloride	34.7	1.00	5.00	mg/L	25.0	5.87	115	75-125	2.19	20	D

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Wet Chemistry - Quality Control

Batch BIC0460 - No Prep Wet Chem

Instrument: LACHAT2 Analyst: WCW

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIC0460-BLK1)				Prepared: 23-Mar-2020 Analyzed: 24-Mar-2020 14:56							
Nitrate + Nitrite as N	ND	0.010	0.010	mg/L							U
LCS (BIC0460-BS1)				Prepared: 23-Mar-2020 Analyzed: 24-Mar-2020 14:57							
Nitrate + Nitrite as N	0.481	0.010	0.010	mg/L	0.500		96.2	90-110			
Duplicate (BIC0460-DUP1)		**Source: 20C0214-01**		Prepared: 23-Mar-2020 Analyzed: 24-Mar-2020 14:59							
Nitrate + Nitrite as N	0.421	0.010	0.010	mg/L		0.423			0.47	20	
Matrix Spike (BIC0460-MS1)		**Source: 20C0214-01**		Prepared: 23-Mar-2020 Analyzed: 24-Mar-2020 15:01							
Nitrate + Nitrite as N	0.926	0.010	0.010	mg/L	0.500	0.423	101	75-125			

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

Matrix Spike Dup (BIC0460-MSD1)		**Source: 20C0214-01**		Prepared: 23-Mar-2020 Analyzed: 24-Mar-2020 15:02							
Nitrate + Nitrite as N	0.927	0.010	0.010	mg/L	0.500	0.423	101	75-125	0.11	200	

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

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Wet Chemistry - Quality Control

Batch BIC0554 - No Prep Wet Chem

Instrument: LACHAT2 Analyst: WCW

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIC0554-BLK1)					Prepared: 25-Mar-2020 Analyzed: 26-Mar-2020 11:51						
Ammonia-N	ND	0.040	0.040	mg/L							U
LCS (BIC0554-BS1)					Prepared: 25-Mar-2020 Analyzed: 26-Mar-2020 11:52						
Ammonia-N	0.515	0.040	0.040	mg/L	0.500		103	90-110			
Duplicate (BIC0554-DUP1)		**Source: 20C0214-01**			Prepared: 25-Mar-2020 Analyzed: 26-Mar-2020 12:05						
Ammonia-N	ND	0.040	0.040	mg/L		ND					U
Matrix Spike (BIC0554-MS1)		**Source: 20C0214-01**			Prepared: 25-Mar-2020 Analyzed: 26-Mar-2020 12:06						
Ammonia-N	0.531	0.040	0.040	mg/L	0.500	ND	106	75-125			

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

Matrix Spike Dup (BIC0554-MSD1)		**Source: 20C0214-01**			Prepared: 25-Mar-2020 Analyzed: 26-Mar-2020 12:08						
Ammonia-N	0.531	0.040	0.040	mg/L	0.500	ND	106	75-125	0.00		

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Wet Chemistry - Quality Control

Batch BIC0617 - No Prep Wet Chem

Instrument: LACHAT1 Analyst: WCW

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIC0617-BLK1)					Prepared: 30-Mar-2020 Analyzed: 30-Mar-2020 14:41						
Sulfate	ND	2.00	2.00	mg/L							U
LCS (BIC0617-BS1)					Prepared: 30-Mar-2020 Analyzed: 30-Mar-2020 14:42						
Sulfate	16.5	2.00	2.00	mg/L	15.0		110	90-110			
Duplicate (BIC0617-DUP2)		**Source: 20C0214-05RE1**			Prepared: 30-Mar-2020 Analyzed: 30-Mar-2020 16:54						
Sulfate	7.53	2.00	2.00	mg/L		7.46			0.93	20	
Matrix Spike (BIC0617-MS2)		**Source: 20C0214-05RE1**			Prepared: 30-Mar-2020 Analyzed: 30-Mar-2020 16:55						
Sulfate	22.0	2.00	2.00	mg/L	15.0	7.46	96.9	75-125			

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

Matrix Spike Dup (BIC0617-MSD2)		**Source: 20C0214-05RE1**			Prepared: 30-Mar-2020 Analyzed: 30-Mar-2020 16:56						
Sulfate	21.4	2.00	2.00	mg/L	15.0	7.46	92.9	75-125	2.76	20	

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Wet Chemistry - Quality Control

Batch BIC0639 - No Prep Wet Chem

Instrument: UV1800-1 Analyst: JM

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIC0639-BLK1)				Prepared: 30-Mar-2020 Analyzed: 31-Mar-2020 13:54							
COD	ND	10.0	10.0	mg/L							U
LCS (BIC0639-BS1)				Prepared: 30-Mar-2020 Analyzed: 31-Mar-2020 13:55							
COD	105	10.0	10.0	mg/L	100		105	90-110			
Duplicate (BIC0639-DUP1)		**Source: 20C0214-01**		Prepared: 30-Mar-2020 Analyzed: 31-Mar-2020 14:01							
COD	ND	10.0	10.0	mg/L		ND					U
Matrix Spike (BIC0639-MS1)		**Source: 20C0214-01**		Prepared: 30-Mar-2020 Analyzed: 31-Mar-2020 14:09							
COD	109	20.0	20.0	mg/L	100	ND	109	90-110			

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

Matrix Spike Dup (BIC0639-MSD1)		**Source: 20C0214-01**		Prepared: 30-Mar-2020 Analyzed: 31-Mar-2020 14:10							
COD	109	20.0	20.0	mg/L	100	ND	109	90-110	0.55	10	

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Microbiology - Quality Control

Batch BIC0353 - No Prep Wet Chem

Instrument: N/A

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIC0353-BLK1)				Prepared: 18-Mar-2020 Analyzed: 19-Mar-2020 09:30							
Total Coliforms	ND	1	1	CFU/100 ml							U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.8 in Water	
Iron-54	NELAP,WADOE,DoD-ELAP
Iron-57	NELAP,WADOE,DoD-ELAP
EPA 200.8 UCT-KED in Water	
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Zinc-66	NELAP,WADOE,WA-DW,DoD-ELAP
Zinc-67	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 353.2 in Water	
Nitrate + Nitrite as N	NELAP,DoD-ELAP,WADOE
Nitrite-N	WADOE,NELAP,DoD-ELAP
EPA 375.2 in Water	
Sulfate	WADOE,NELAP
EPA 410.4 in Water	
COD	DoD-ELAP,NELAP,WADOE
EPA 6010C in Water	
Calcium	WADOE,NELAP,DoD-ELAP
Potassium	WADOE,NELAP,DoD-ELAP
Sodium	DoD-ELAP,WADOE,NELAP
Sodium-1	DoD-ELAP
Barium	WADOE,NELAP,DoD-ELAP
Manganese	WADOE,NELAP,DoD-ELAP
EPA 8260C in Water	
Chloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Acrolein	DoD-ELAP,NELAP,CALAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromoethane	DoD-ELAP,NELAP,CALAP,WADOE
Iodomethane	DoD-ELAP,NELAP,CALAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Acrylonitrile	DoD-ELAP,NELAP,CALAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,CALAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,CALAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2-Butanone	DoD-ELAP,NELAP,CALAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,CALAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,CALAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,CALAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Styrene	DoD-ELAP,NELAP,CALAP,WADOE
Bromoform	DoD-ELAP,NELAP,CALAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

n-Propylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,CALAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,CALAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,CALAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
n-Hexane	WADOE
2-Pentanone	WADOE
EPA 8260C-SIM in Water	
Acrylonitrile	NELAP,CALAP,WADOE
Vinyl chloride	NELAP,CALAP,WADOE
1,1-Dichloroethene	NELAP,CALAP,WADOE
cis-1,2-Dichloroethene	NELAP,CALAP,WADOE
trans-1,2-Dichloroethene	NELAP,CALAP,WADOE
Trichloroethene	NELAP,CALAP,WADOE
Tetrachloroethene	NELAP,CALAP,WADOE
1,1,2,2-Tetrachloroethane	NELAP,CALAP,WADOE
1,2-Dichloroethane	NELAP,CALAP,WADOE
Benzene	NELAP,CALAP,WADOE
EPA 9060A in Water	
Total Organic Carbon	DoD-ELAP,WADOE,NELAP
SM 2320 B-97 in Water	
Alkalinity, Bicarbonate	NELAP,WADOE,WA-DW,DoD-ELAP
Alkalinity, Carbonate	WADOE,WA-DW,DoD-ELAP,NELAP

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Alkalinity, Hydroxide	WADOE,WA-DW,DoD-ELAP,NELAP
Alkalinity, Total	DoD-ELAP,WADOE,WA-DW,NELAP
SM 4500-H+ B-00 in Water	
pH	WADOE,NELAP,WA-DW
SM 4500-NH3 H-97 in Water	
Ammonia-N	WADOE,DoD-ELAP,NELAP
SM 9222B in Water	
Total Coliforms	WADOE

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	01/31/2021
CALAP	California Department of Public Health CAELAP	2748	06/30/2019
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	01/01/2021
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2020
WADOE	WA Dept of Ecology	C558	06/30/2019
WA-DW	Ecology - Drinking Water	C558	06/30/2019

Analytical Report

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Apr-2020 15:10

Notes and Definitions

*	Flagged value is not within established control limits.
B	This analyte was detected in the method blank.
D	The reported value is from a dilution
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
H	Hold time violation - Hold time was exceeded.
J	Estimated concentration value detected below the reporting limit.
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

02 July 2020

Doug Kunkel
Environmental Partners, Inc.
1180 NW Maple St., Suite 310
Issaquah, WA 98027

RE: Olalla Landfill

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

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

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

Associated Work Order(s)	Associated SDG ID(s)
20F0314	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 it entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006

PJLA Testing
Accreditation # 66169

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 20F0314	Turn-around Requested: Standard	Page: 1	of 1
ARI Client Company: TRC Companies	Phone: 425-395-0016	Date: 3/18/20	Ice Present? Yes
Client Contact: Doug Kunkel		No. of Coolers: 1	Cooler Temps: 0.7
Client Project Name: Olalla Landfill			
Client Project #: 382595	Samplers: E. Caddey + W. Weisberg		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: VOCs	VC by SIM	Dissolved Metals	Total Metals	Nitrate/Nitrite Chloride Sulfate Carbonate	Alkalinity pH Conductivity	COD TOC	Total Coliform	Notes/Comments
Olalla-MW1-6/20	6/17/20	0905	water	9	X	X	X	X	X	X	X	X	See email for full analyte list. Diss metals field filtered
Olalla-MW3-6/20		1006			X	X	X	X	X	X	X	X	
Olalla-MW10-6/20		1055			X	X	X	X	X	X	X	X	
Olalla-MW6-6/20		1220			X	X	X	X	X	X	X	X	
Olalla-MW8-6/20		1307			X	X	X	X	X	X	X	X	
Olalla-MW17-6/20	↓	—	↓	↓	X	X	X	X	X	X	X	X	
Trip Blank				2	X								

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: Eric Caddey	Printed Name: Kenny Dang	Printed Name:	Printed Name:
	Company: TRC	Company: ARI	Company:	Company:
	Date & Time: 6/18/20 0855	Date & Time: 6/18/2020 0855	Date & Time:	Date & Time:

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Olalla-MW1-6/20	20F0314-01	Water	17-Jun-2020 09:05	18-Jun-2020 08:55
Olalla-MW3-6/20	20F0314-02	Water	17-Jun-2020 10:06	18-Jun-2020 08:55
Olalla-MW10-6/20	20F0314-03	Water	17-Jun-2020 10:55	18-Jun-2020 08:55
Olalla-MW6-6/20	20F0314-04	Water	17-Jun-2020 12:20	18-Jun-2020 08:55
Olalla-MW8-6/20	20F0314-05	Water	17-Jun-2020 13:07	18-Jun-2020 08:55
Olalla-MW17-6/20	20F0314-06	Water	17-Jun-2020 00:00	18-Jun-2020 08:55
Trip Blank	20F0314-07	Water	17-Jun-2020 09:05	18-Jun-2020 08:55
Olalla-MW1-6/20	20F0314-08	Water	17-Jun-2020 09:05	18-Jun-2020 08:55
Olalla-MW3-6/20	20F0314-09	Water	17-Jun-2020 10:06	18-Jun-2020 08:55
Olalla-MW10-6/20	20F0314-10	Water	17-Jun-2020 10:55	18-Jun-2020 08:55
Olalla-MW6-6/20	20F0314-11	Water	17-Jun-2020 12:20	18-Jun-2020 08:55
Olalla-MW8-6/20	20F0314-12	Water	17-Jun-2020 13:07	18-Jun-2020 08:55
Olalla-MW17-6/20	20F0314-13	Water	17-Jun-2020 00:00	18-Jun-2020 08:55

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Work Order Case Narrative

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements with the exception of all associated "Q" flagged analytes which are out of control high in the CCAL. All associated samples that contain analyte have been flagged with a "Q" qualifer.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS/LCSD percent recoveries and RPD were within control limits with the exception of analytes flagged on the associated forms.

Volatiles - EPA Method 8260D-SIM (Selected Ion Monitoring)

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS/LCSD percent recoveries and RPD were within control limits.

Total and Dissolved Metals - EPA Method 200.8 and 6010C

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

The matrix spike/matrix spike duplicate recoveries and RPD were within limits.

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times with the exception of pH and Total coliform which were sent to the lab outside of the holding time.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

The matrix spike/matrix spike duplicate recoveries and RPD were within limits.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Conventionals Laboratory Analyst Notes

ARI Job No.: 20F0314

Client ID:

Parameter: Alk

Client Project:

List problems, concerns, corrective actions and any other pertinent information
Client only supplied 1 unpreserved volume of each Sample. Alkalinity had to be compromized to run critical NO3.

Analyst Initials:		Date:	6-19-2020

WORK ORDER

20F0314

Client: Environmental Partners, Inc. **Project Manager:** Kelly Bottem

Project: Olalla Landfill **Project Number:** [none]

Preservation Confirmation

Container ID	Container Type	pH
20F0314-01 A	VOA Vial, Clear, 40 mL, HCL	
20F0314-01 B	VOA Vial, Clear, 40 mL, HCL	
20F0314-01 C	VOA Vial, Clear, 40 mL, HCL	
20F0314-01 D	Corning Plastic, 125 mL, Na2S2O3	
20F0314-01 E	Glass NM, Amber, 250 mL, 9N H2SO4	<2 pass
20F0314-01 F	Glass NM, Amber, 250 mL, 9N H2SO4	<2 pass
20F0314-01 G	Small OJ, 500 mL	
20F0314-01 H	HDPE NM, 250mL HNO3	<2 pass
20F0314-02 A	VOA Vial, Clear, 40 mL, HCL	
20F0314-02 B	VOA Vial, Clear, 40 mL, HCL	
20F0314-02 C	VOA Vial, Clear, 40 mL, HCL	
20F0314-02 D	Corning Plastic, 125 mL, Na2S2O3	
20F0314-02 E	Glass NM, Amber, 250 mL, 9N H2SO4	<2 pass
20F0314-02 F	Glass NM, Amber, 250 mL, 9N H2SO4	<2 pass
20F0314-02 G	Small OJ, 500 mL	
20F0314-02 H	HDPE NM, 250mL HNO3	<2 pass
20F0314-03 A	VOA Vial, Clear, 40 mL, HCL	
20F0314-03 B	VOA Vial, Clear, 40 mL, HCL	
20F0314-03 C	VOA Vial, Clear, 40 mL, HCL	
20F0314-03 D	Corning Plastic, 125 mL, Na2S2O3	
20F0314-03 E	Glass NM, Amber, 250 mL, 9N H2SO4	<2 pass
20F0314-03 F	Glass NM, Amber, 250 mL, 9N H2SO4	<2 pass
20F0314-03 G	Small OJ, 500 mL	
20F0314-03 H	HDPE NM, 250mL HNO3	<2 pass
20F0314-04 A	VOA Vial, Clear, 40 mL, HCL	
20F0314-04 B	VOA Vial, Clear, 40 mL, HCL	
20F0314-04 C	VOA Vial, Clear, 40 mL, HCL	
20F0314-04 D	Corning Plastic, 125 mL, Na2S2O3	
20F0314-04 E	Glass NM, Amber, 250 mL, 9N H2SO4	<2 pass
20F0314-04 F	Glass NM, Amber, 250 mL, 9N H2SO4	<2 pass
20F0314-04 G	Small OJ, 500 mL	
20F0314-04 H	HDPE NM, 250mL HNO3	<2 pass
20F0314-05 A	VOA Vial, Clear, 40 mL, HCL	
20F0314-05 B	VOA Vial, Clear, 40 mL, HCL	
20F0314-05 C	VOA Vial, Clear, 40 mL, HCL	

Reviewed By Date

WORK ORDER

20F0314

Client: Environmental Partners, Inc. **Project Manager: Kelly Bottem**

Project: Olalla Landfill **Project Number: [none]**

20F0314-05 D	Corning Plastic, 125 mL, Na2S2O3	
20F0314-05 E	Glass NM, Amber, 250 mL, 9N H2SO4	<2 pass
20F0314-05 F	Glass NM, Amber, 250 mL, 9N H2SO4	<2 pass
20F0314-05 G	Small OJ, 500 mL	
20F0314-05 H	HDPE NM, 250mL HNO3	<2 pass
20F0314-06 A	VOA Vial, Clear, 40 mL, HCL	
20F0314-06 B	VOA Vial, Clear, 40 mL, HCL	
20F0314-06 C	VOA Vial, Clear, 40 mL, HCL	
20F0314-06 D	Corning Plastic, 125 mL, Na2S2O3	
20F0314-06 E	Glass NM, Amber, 250 mL, 9N H2SO4	<2 pass
20F0314-06 F	Glass NM, Amber, 250 mL, 9N H2SO4	<2 pass
20F0314-06 G	Small OJ, 500 mL	
20F0314-06 H	HDPE NM, 250mL HNO3	>2 fail
20F0314-07 A	VOA Vial, Clear, 40 mL, HCL	
20F0314-07 B	VOA Vial, Clear, 40 mL, HCL	
20F0314-08 A	HDPE NM, 250mL HNO3 (FF)	<2 pass
20F0314-09 A	HDPE NM, 250mL HNO3 (FF)	<2 pass
20F0314-10 A	HDPE NM, 250mL HNO3 (FF)	<2 pass
20F0314-11 A	HDPE NM, 250mL HNO3 (FF)	<2 pass
20F0314-12 A	HDPE NM, 250mL HNO3 (FF)	<2 pass
20F0314-13 A	HDPE NM, 250mL HNO3 (FF)	<2 pass

Preservation Confirmed By

6/18/2020
Date

Reviewed By

Date

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW1-6/20

20F0314-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/17/2020 09:05
Instrument: NT3 Analyst: PKC — Analyzed: 06/25/2020 18:32

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20F0314-01 A
Preparation Batch: BIF0746 — Sample Size: 10 mL
Prepared: 06/25/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW1-6/20

20F0314-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/17/2020 09:05

Instrument: NT3 Analyst: PKC — Analyzed: 06/25/2020 18:32

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW1-6/20

20F0314-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/17/2020 09:05
Instrument: NT3 Analyst: PKC — Analyzed: 06/25/2020 18:32

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*113*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*103*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*99.5*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*101*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW1-6/20

20F0314-01 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM — Sampled: 06/17/2020 09:05
Instrument: NT16 Analyst: PB — Analyzed: 06/23/2020 18:19

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20F0314-01 C
Preparation Batch: BIF0572 — Sample Size: 10 mL
Prepared: 06/23/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*105*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW1-6/20

20F0314-01 (Water)

Metals and Metallic Compounds

Method: EPA 6010C — Sampled: 06/17/2020 09:05
Instrument: ICP2 Analyst: TCH — Analyzed: 06/30/2020 14:30

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 20F0314-01 H 01
Preparation Batch: BIF0839 — Sample Size: 25 mL
Prepared: 06/29/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	11.0	mg/L	
Potassium	7440-09-7	1	0.500	0.620	mg/L	
Sodium	7440-23-5	1	0.500	4.74	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW1-6/20

20F0314-01 (Water)

Wet Chemistry

Method: EPA 325.2 — Sampled: 06/17/2020 09:05
Instrument: LACHAT2 Analyst: BF — Analyzed: 06/25/2020 14:34

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-01 G
Preparation Batch: BIF0680 — Sample Size: 10 mL
Prepared: 06/23/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	3.97	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW1-6/20

20F0314-01 (Water)

Wet Chemistry

Method: EPA 353.2 — Sampled: 06/17/2020 09:05
Instrument: [CALC] Analyst: CDE — Analyzed: 06/18/2020 19:46

Sample Preparation: Preparation Method: [CALC]; Preparation Batch: [CALC]; Prepared: 06/18/2020; Final Volume: 1 — Extract ID: 20F0314-01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	0.222	mg/L	

Instrument: LACHAT2 Analyst: CDE — Analyzed: 06/18/2020 19:46

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BIF0532; Prepared: 06/18/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20F0314-01 G

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	0.222	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	ND	mg/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW1-6/20

20F0314-01 (Water)

Wet Chemistry

Method: EPA 375.2 — Sampled: 06/17/2020 09:05
Instrument: LACHAT1 Analyst: BF — Analyzed: 06/25/2020 15:50

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-01 G
Preparation Batch: BIF0762 — Sample Size: 10 mL
Prepared: 06/25/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	2.00	2.00	4.44	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW1-6/20

20F0314-01 (Water)

Wet Chemistry

Method: EPA 410.4 — Sampled: 06/17/2020 09:05
Instrument: UV1800-1 Analyst: JM — Analyzed: 06/23/2020 14:19

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-01 E
Preparation Batch: BIF0647 — Sample Size: 2 mL
Prepared: 06/23/2020 — Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	ND	mg/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW1-6/20

20F0314-01 (Water)

Wet Chemistry

Method: EPA 9060A — Sampled: 06/17/2020 09:05
Instrument: TOC-LCSH Analyst: EP — Analyzed: 06/30/2020 12:46

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-01 E
Preparation Batch: BIF0866 — Sample Size: 20 mL
Prepared: 06/29/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	ND	mg/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW1-6/20

20F0314-01 (Water)

Wet Chemistry

Method: SM 2320 B-97 — Sampled: 06/17/2020 09:05
Instrument: Accumet AB150 Analyst: UW — Analyzed: 06/19/2020 16:02

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-01 G
Preparation Batch: BIF0582 — Sample Size: 100 mL
Prepared: 06/19/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	50.2	mg/L CaCO3	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	50.2	mg/L CaCO3	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW1-6/20

20F0314-01 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00 — Sampled: 06/17/2020 09:05

Instrument: Accumet AB150 Analyst: UW — Analyzed: 06/19/2020 16:00

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-01 G

Preparation Batch: BIF0580 — Sample Size: 50 mL

Prepared: 06/19/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	7.03	pH Units	H

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW1-6/20

20F0314-01 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 06/17/2020 09:05

Instrument: LACHAT2 Analyst: WCW — Analyzed: 06/30/2020 12:48

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-01 F

Preparation Batch: BIF0889 — Sample Size: 10 mL

Prepared: 06/30/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	ND	mg/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW1-6/20

20F0314-01 (Water)

Microbiology

Method: SM 9222B — Sampled: 06/17/2020 09:05

Instrument: N/A Analyst: UW — Analyzed: 06/19/2020 17:25

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-01

Preparation Batch: BIF0530 — Sample Size: 100 mL

Prepared: 06/18/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	H, U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW3-6/20

20F0314-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/17/2020 10:06
Instrument: NT3 Analyst: PKC — Analyzed: 06/25/2020 18:57

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20F0314-02 A
Preparation Batch: BIF0746 — Sample Size: 10 mL
Prepared: 06/25/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW3-6/20

20F0314-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/17/2020 10:06

Instrument: NT3 Analyst: PKC — Analyzed: 06/25/2020 18:57

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW3-6/20

20F0314-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/17/2020 10:06
Instrument: NT3 Analyst: PKC — Analyzed: 06/25/2020 18:57

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*108*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.3*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*100*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*102*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW3-6/20

20F0314-02 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM — Sampled: 06/17/2020 10:06
Instrument: NT16 Analyst: PB — Analyzed: 06/23/2020 18:39

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20F0314-02 C
Preparation Batch: BIF0572 — Sample Size: 10 mL
Prepared: 06/23/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*109*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW3-6/20

20F0314-02 (Water)

Metals and Metallic Compounds

Method: EPA 6010C — Sampled: 06/17/2020 10:06
Instrument: ICP2 Analyst: TCH — Analyzed: 06/30/2020 15:06

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 20F0314-02 H 01
Preparation Batch: BIF0839 — Sample Size: 25 mL
Prepared: 06/29/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	52.3	mg/L	
Potassium	7440-09-7	1	0.500	0.898	mg/L	
Sodium	7440-23-5	1	0.500	9.53	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW3-6/20

20F0314-02 (Water)

Wet Chemistry

Method: EPA 325.2 — Sampled: 06/17/2020 10:06
Instrument: LACHAT2 Analyst: BF — Analyzed: 06/25/2020 14:36

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-02 G
Preparation Batch: BIF0680 — Sample Size: 10 mL
Prepared: 06/23/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	2.51	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW3-6/20

20F0314-02 (Water)

Wet Chemistry

Method: EPA 353.2 — Sampled: 06/17/2020 10:06
Instrument: [CALC] Analyst: CDE — Analyzed: 06/18/2020 19:47

Sample Preparation: Preparation Method: [CALC]; Preparation Batch: [CALC]; Prepared: 06/18/2020; Final Volume: 1 — Extract ID: 20F0314-02

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	0.0215	mg/L	

Instrument: LACHAT2 Analyst: CDE — Analyzed: 06/18/2020 19:47

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BIF0532; Prepared: 06/18/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20F0314-02 G

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	0.022	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	ND	mg/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW3-6/20

20F0314-02 (Water)

Wet Chemistry

Method: EPA 375.2 — Sampled: 06/17/2020 10:06
Instrument: LACHAT1 Analyst: BF — Analyzed: 06/25/2020 15:51

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-02 G
Preparation Batch: BIF0762 — Sample Size: 10 mL
Prepared: 06/25/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	2.00	2.00	16.1	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW3-6/20

20F0314-02 (Water)

Wet Chemistry

Method: EPA 410.4 — Sampled: 06/17/2020 10:06
Instrument: UV1800-1 Analyst: JM — Analyzed: 06/23/2020 14:19

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-02 E
Preparation Batch: BIF0647 — Sample Size: 2 mL
Prepared: 06/23/2020 — Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	ND	mg/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW3-6/20

20F0314-02 (Water)

Wet Chemistry

Method: EPA 9060A — Sampled: 06/17/2020 10:06
Instrument: TOC-LCSH Analyst: EP — Analyzed: 06/30/2020 13:04

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-02 E
Preparation Batch: BIF0866 — Sample Size: 20 mL
Prepared: 06/29/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	3.03	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW3-6/20

20F0314-02 (Water)

Wet Chemistry

Method: SM 2320 B-97 — Sampled: 06/17/2020 10:06
Instrument: Accumet AB150 Analyst: UW — Analyzed: 06/19/2020 16:02

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-02 G
Preparation Batch: BIF0582 — Sample Size: 100 mL
Prepared: 06/19/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	213	mg/L CaCO3	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	213	mg/L CaCO3	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW3-6/20

20F0314-02 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00 — Sampled: 06/17/2020 10:06

Instrument: Accumet AB150 Analyst: UW — Analyzed: 06/19/2020 16:00

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-02 G

Preparation Batch: BIF0580 — Sample Size: 50 mL

Prepared: 06/19/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	6.24	pH Units	H

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW3-6/20

20F0314-02 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 06/17/2020 10:06
Instrument: LACHAT2 Analyst: WCW — Analyzed: 06/30/2020 12:49

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-02 F
Preparation Batch: BIF0889 — Sample Size: 10 mL
Prepared: 06/30/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	ND	mg/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW3-6/20

20F0314-02 (Water)

Microbiology

Method: SM 9222B — Sampled: 06/17/2020 10:06
Instrument: N/A Analyst: UW — Analyzed: 06/19/2020 17:25

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-02
Preparation Batch: BIF0530 — Sample Size: 100 mL
Prepared: 06/18/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	H, U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW10-6/20

20F0314-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/17/2020 10:55
Instrument: NT3 Analyst: PKC — Analyzed: 06/25/2020 19:23

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20F0314-03 A
Preparation Batch: BIF0746 — Sample Size: 10 mL
Prepared: 06/25/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW10-6/20

20F0314-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/17/2020 10:55

Instrument: NT3 Analyst: PKC — Analyzed: 06/25/2020 19:23

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW10-6/20

20F0314-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/17/2020 10:55

Instrument: NT3 Analyst: PKC — Analyzed: 06/25/2020 19:23

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*109*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.9*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*95.1*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*104*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW10-6/20

20F0314-03 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM — Sampled: 06/17/2020 10:55
Instrument: NT16 Analyst: PB — Analyzed: 06/23/2020 19:00

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20F0314-03 C
Preparation Batch: BIF0572 — Sample Size: 10 mL
Prepared: 06/23/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*109*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW10-6/20

20F0314-03 (Water)

Metals and Metallic Compounds

Method: EPA 6010C — Sampled: 06/17/2020 10:55
Instrument: ICP2 Analyst: TCH — Analyzed: 06/30/2020 15:11

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 20F0314-03 H 01
Preparation Batch: BIF0839 — Sample Size: 25 mL
Prepared: 06/29/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	44.2	mg/L	
Potassium	7440-09-7	1	0.500	1.43	mg/L	
Sodium	7440-23-5	1	0.500	20.9	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW10-6/20

20F0314-03 (Water)

Wet Chemistry

Method: EPA 325.2 — Sampled: 06/17/2020 10:55

Instrument: LACHAT2 Analyst: BF — Analyzed: 06/25/2020 14:44

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-03 G

Preparation Batch: BIF0680 — Sample Size: 10 mL

Prepared: 06/23/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	8.19	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW10-6/20

20F0314-03 (Water)

Wet Chemistry

Method: EPA 353.2 — Sampled: 06/17/2020 10:55
Instrument: [CALC] Analyst: CDE — Analyzed: 06/18/2020 19:48

Sample Preparation: Preparation Method: [CALC]; Preparation Batch: [CALC]; Prepared: 06/18/2020; Final Volume: 1 — Extract ID: 20F0314-03

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	0.240	mg/L	

Instrument: LACHAT2 Analyst: CDE — Analyzed: 06/18/2020 19:48

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BIF0532; Prepared: 06/18/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20F0314-03 G

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	0.240	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	ND	mg/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW10-6/20

20F0314-03 (Water)

Wet Chemistry

Method: EPA 410.4 — Sampled: 06/17/2020 10:55

Instrument: UV1800-1 Analyst: JM — Analyzed: 06/23/2020 14:20

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-03 E

Preparation Batch: BIF0647 — Sample Size: 2 mL

Prepared: 06/23/2020 — Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	ND	mg/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW10-6/20

20F0314-03 (Water)

Wet Chemistry

Method: EPA 9060A — Sampled: 06/17/2020 10:55
Instrument: TOC-LCSH Analyst: EP — Analyzed: 06/30/2020 13:23

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-03 E
Preparation Batch: BIF0866 — Sample Size: 20 mL
Prepared: 06/29/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	3.56	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW10-6/20

20F0314-03 (Water)

Wet Chemistry

Method: SM 2320 B-97 — Sampled: 06/17/2020 10:55
Instrument: Accumet AB150 Analyst: UW — Analyzed: 06/19/2020 16:02

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-03 G
Preparation Batch: BIF0582 — Sample Size: 100 mL
Prepared: 06/19/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	245	mg/L CaCO3	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	245	mg/L CaCO3	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW10-6/20

20F0314-03 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00 — Sampled: 06/17/2020 10:55
Instrument: Accumet AB150 Analyst: UW — Analyzed: 06/19/2020 16:00

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-03 G
Preparation Batch: BIF0580 — Sample Size: 50 mL
Prepared: 06/19/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	6.20	pH Units	H

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1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW10-6/20

20F0314-03 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 06/17/2020 10:55
Instrument: LACHAT2 Analyst: WCW — Analyzed: 06/30/2020 12:58

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-03 F
Preparation Batch: BIF0889 — Sample Size: 10 mL
Prepared: 06/30/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	0.087	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW10-6/20

20F0314-03 (Water)

Microbiology

Method: SM 9222B — Sampled: 06/17/2020 10:55
Instrument: N/A Analyst: UW — Analyzed: 06/19/2020 17:25

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-03
Preparation Batch: BIF0530 — Sample Size: 100 mL
Prepared: 06/18/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	H, U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW10-6/20

20F0314-03RE1 (Water)

Wet Chemistry

Method: EPA 375.2 — Sampled: 06/17/2020 10:55
Instrument: LACHAT1 Analyst: BF — Analyzed: 06/25/2020 16:32

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-03RE1 G
Preparation Batch: BIF0762 — Sample Size: 10 mL
Prepared: 06/25/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	2	4.00	4.00	29.0	mg/L	D

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW6-6/20

20F0314-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/17/2020 12:20
Instrument: NT3 Analyst: PKC — Analyzed: 06/25/2020 19:48

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20F0314-04 A
Preparation Batch: BIF0746 — Sample Size: 10 mL
Prepared: 06/25/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW6-6/20

20F0314-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/17/2020 12:20
Instrument: NT3 Analyst: PKC — Analyzed: 06/25/2020 19:48

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	2.48	ug/L	
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW6-6/20

20F0314-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/17/2020 12:20
Instrument: NT3 Analyst: PKC — Analyzed: 06/25/2020 19:48

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*112*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.8*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*97.9*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*105*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW6-6/20

20F0314-04 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM — Sampled: 06/17/2020 12:20
Instrument: NT16 Analyst: PB — Analyzed: 06/23/2020 19:21

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20F0314-04 C
Preparation Batch: BIF0572 — Sample Size: 10 mL
Prepared: 06/23/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*114*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW6-6/20

20F0314-04 (Water)

Metals and Metallic Compounds

Method: EPA 6010C — Sampled: 06/17/2020 12:20
Instrument: ICP2 Analyst: TCH — Analyzed: 06/30/2020 15:15

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 20F0314-04 H 01
Preparation Batch: BIF0839 — Sample Size: 25 mL
Prepared: 06/29/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	34.0	mg/L	
Potassium	7440-09-7	1	0.500	1.53	mg/L	
Sodium	7440-23-5	1	0.500	9.88	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW6-6/20

20F0314-04 (Water)

Wet Chemistry

Method: EPA 325.2 — Sampled: 06/17/2020 12:20
Instrument: LACHAT2 Analyst: BF — Analyzed: 06/25/2020 14:45

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-04 G
Preparation Batch: BIF0680 — Sample Size: 10 mL
Prepared: 06/23/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	2.82	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW6-6/20

20F0314-04 (Water)

Wet Chemistry

Method: EPA 353.2 — Sampled: 06/17/2020 12:20
Instrument: [CALC] Analyst: CDE — Analyzed: 06/18/2020 19:49

Sample Preparation: Preparation Method: [CALC]; Preparation Batch: [CALC]; Prepared: 06/18/2020; Final Volume: 1 — Extract ID: 20F0314-04

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	0.366	mg/L	

Instrument: LACHAT2 Analyst: CDE — Analyzed: 06/18/2020 19:49

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BIF0532; Prepared: 06/18/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20F0314-04 G

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	0.424	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	0.058	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW6-6/20

20F0314-04 (Water)

Wet Chemistry

Method: EPA 375.2 — Sampled: 06/17/2020 12:20
Instrument: LACHAT1 Analyst: BF — Analyzed: 06/25/2020 16:01

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-04 G
Preparation Batch: BIF0762 — Sample Size: 10 mL
Prepared: 06/25/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	2.00	2.00	7.13	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW6-6/20

20F0314-04 (Water)

Wet Chemistry

Method: EPA 410.4 — Sampled: 06/17/2020 12:20
Instrument: UV1800-1 Analyst: JM — Analyzed: 06/23/2020 14:20

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-04 E
Preparation Batch: BIF0647 — Sample Size: 2 mL
Prepared: 06/23/2020 — Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	ND	mg/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW6-6/20

20F0314-04 (Water)

Wet Chemistry

Method: EPA 9060A — Sampled: 06/17/2020 12:20
Instrument: TOC-LCSH Analyst: EP — Analyzed: 06/30/2020 13:41

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-04 E
Preparation Batch: BIF0866 — Sample Size: 20 mL
Prepared: 06/29/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	1.79	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW6-6/20

20F0314-04 (Water)

Wet Chemistry

Method: SM 2320 B-97 — Sampled: 06/17/2020 12:20
Instrument: Accumet AB150 Analyst: UW — Analyzed: 06/19/2020 16:02

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-04 G
Preparation Batch: BIF0582 — Sample Size: 100 mL
Prepared: 06/19/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	171	mg/L CaCO3	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	171	mg/L CaCO3	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW6-6/20

20F0314-04 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00 — Sampled: 06/17/2020 12:20
Instrument: Accumet AB150 Analyst: UW — Analyzed: 06/19/2020 16:00

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-04 G
Preparation Batch: BIF0580 — Sample Size: 50 mL
Prepared: 06/19/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	6.48	pH Units	H

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW6-6/20

20F0314-04 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 06/17/2020 12:20
Instrument: LACHAT2 Analyst: WCW — Analyzed: 06/30/2020 12:59

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-04 F
Preparation Batch: BIF0889 — Sample Size: 10 mL
Prepared: 06/30/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	0.041	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW6-6/20

20F0314-04 (Water)

Microbiology

Method: SM 9222B — Sampled: 06/17/2020 12:20
Instrument: N/A Analyst: UW — Analyzed: 06/19/2020 17:25

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-04
Preparation Batch: BIF0530 — Sample Size: 100 mL
Prepared: 06/18/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	H, U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW8-6/20

20F0314-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/17/2020 13:07
Instrument: NT3 Analyst: PKC — Analyzed: 06/25/2020 20:13

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20F0314-05 A
Preparation Batch: BIF0746 — Sample Size: 10 mL
Prepared: 06/25/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW8-6/20

20F0314-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/17/2020 13:07

Instrument: NT3 Analyst: PKC — Analyzed: 06/25/2020 20:13

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW8-6/20

20F0314-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/17/2020 13:07
Instrument: NT3 Analyst: PKC — Analyzed: 06/25/2020 20:13

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*107*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*98.6*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*98.1*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*98.0*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW8-6/20

20F0314-05 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM — Sampled: 06/17/2020 13:07
Instrument: NT16 Analyst: PB — Analyzed: 06/23/2020 19:42

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20F0314-05 C
Preparation Batch: BIF0572 — Sample Size: 10 mL
Prepared: 06/23/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*115*	*%*	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW8-6/20

20F0314-05 (Water)

Metals and Metallic Compounds

Method: EPA 6010C — Sampled: 06/17/2020 13:07
Instrument: ICP2 Analyst: TCH — Analyzed: 06/30/2020 15:20

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 20F0314-05 H 01
Preparation Batch: BIF0839 — Sample Size: 25 mL
Prepared: 06/29/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	20.1	mg/L	
Potassium	7440-09-7	1	0.500	0.975	mg/L	
Sodium	7440-23-5	1	0.500	7.95	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW8-6/20

20F0314-05 (Water)

Wet Chemistry

Method: EPA 325.2 — Sampled: 06/17/2020 13:07
Instrument: LACHAT2 Analyst: BF — Analyzed: 06/25/2020 14:47

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-05 G
Preparation Batch: BIF0680 — Sample Size: 10 mL
Prepared: 06/23/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	2.27	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW8-6/20

20F0314-05 (Water)

Wet Chemistry

Method: EPA 353.2 — Sampled: 06/17/2020 13:07
Instrument: [CALC] Analyst: CDE — Analyzed: 06/18/2020 19:50

Sample Preparation: Preparation Method: [CALC]; Preparation Batch: [CALC]; Prepared: 06/18/2020; Final Volume: 1 — Extract ID: 20F0314-05

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	0.0277	mg/L	

Instrument: LACHAT2 Analyst: CDE — Analyzed: 06/18/2020 19:50

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BIF0532; Prepared: 06/18/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20F0314-05 G

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	0.028	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	ND	mg/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW8-6/20

20F0314-05 (Water)

Wet Chemistry

Method: EPA 375.2 — Sampled: 06/17/2020 13:07
Instrument: LACHAT1 Analyst: BF — Analyzed: 06/25/2020 16:02

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-05 G
Preparation Batch: BIF0762 — Sample Size: 10 mL
Prepared: 06/25/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	2.00	2.00	4.12	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW8-6/20

20F0314-05 (Water)

Wet Chemistry

Method: EPA 410.4 — Sampled: 06/17/2020 13:07
Instrument: UV1800-1 Analyst: JM — Analyzed: 06/23/2020 14:21

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-05 E
Preparation Batch: BIF0647 — Sample Size: 2 mL
Prepared: 06/23/2020 — Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	ND	mg/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW8-6/20

20F0314-05 (Water)

Wet Chemistry

Method: EPA 9060A — Sampled: 06/17/2020 13:07
Instrument: TOC-LCSH Analyst: EP — Analyzed: 06/30/2020 14:11

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-05 E
Preparation Batch: BIF0866 — Sample Size: 20 mL
Prepared: 06/29/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	0.67	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW8-6/20

20F0314-05 (Water)

Wet Chemistry

Method: SM 2320 B-97 — Sampled: 06/17/2020 13:07
Instrument: Accumet AB150 Analyst: UW — Analyzed: 06/19/2020 16:02

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-05 G
Preparation Batch: BIF0582 — Sample Size: 100 mL
Prepared: 06/19/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	111	mg/L CaCO3	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	111	mg/L CaCO3	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW8-6/20

20F0314-05 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00 — Sampled: 06/17/2020 13:07

Instrument: Accumet AB150 Analyst: UW — Analyzed: 06/19/2020 16:00

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-05 G

Preparation Batch: BIF0580 — Sample Size: 50 mL

Prepared: 06/19/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	6.59	pH Units	H

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW8-6/20

20F0314-05 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 06/17/2020 13:07
Instrument: LACHAT2 Analyst: WCW — Analyzed: 06/30/2020 13:00

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-05 F
Preparation Batch: BIF0889 — Sample Size: 10 mL
Prepared: 06/30/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	ND	mg/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW8-6/20

20F0314-05 (Water)

Microbiology

Method: SM 9222B — Sampled: 06/17/2020 13:07
Instrument: N/A Analyst: UW — Analyzed: 06/19/2020 17:25

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-05
Preparation Batch: BIF0530 — Sample Size: 100 mL
Prepared: 06/18/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	H, U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW17-6/20

20F0314-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/17/2020 00:00
Instrument: NT3 Analyst: PKC — Analyzed: 06/25/2020 20:38

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20F0314-06 A
Preparation Batch: BIF0746 — Sample Size: 10 mL
Prepared: 06/25/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW17-6/20

20F0314-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/17/2020 00:00
Instrument: NT3 Analyst: PKC — Analyzed: 06/25/2020 20:38

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	1.92	ug/L	
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW17-6/20

20F0314-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/17/2020 00:00

Instrument: NT3 Analyst: PKC — Analyzed: 06/25/2020 20:38

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*105*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*97.9*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*101*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW17-6/20

20F0314-06 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM — Sampled: 06/17/2020 00:00
Instrument: NT16 Analyst: PB — Analyzed: 06/23/2020 20:02

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20F0314-06 C
Preparation Batch: BIF0572 — Sample Size: 10 mL
Prepared: 06/23/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*114*	*%*	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW17-6/20

20F0314-06 (Water)

Metals and Metallic Compounds

Method: EPA 6010C — Sampled: 06/17/2020 00:00
Instrument: ICP2 Analyst: TCH — Analyzed: 06/30/2020 15:37

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 20F0314-06 H 01
Preparation Batch: BIF0839 — Sample Size: 25 mL
Prepared: 06/29/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	33.7	mg/L	
Potassium	7440-09-7	1	0.500	1.47	mg/L	
Sodium	7440-23-5	1	0.500	9.74	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW17-6/20

20F0314-06 (Water)

Wet Chemistry

Method: EPA 325.2 — Sampled: 06/17/2020 00:00

Instrument: LACHAT2 Analyst: BF — Analyzed: 06/25/2020 14:48

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-06 G

Preparation Batch: BIF0680 — Sample Size: 10 mL

Prepared: 06/23/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	2.81	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW17-6/20

20F0314-06 (Water)

Wet Chemistry

Method: EPA 353.2 — Sampled: 06/17/2020 00:00
Instrument: [CALC] Analyst: CDE — Analyzed: 06/18/2020 20:03

Sample Preparation: Preparation Method: [CALC]; Preparation Batch: [CALC]; Prepared: 06/18/2020; Final Volume: 1 — Extract ID: 20F0314-06

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	0.366	mg/L	

Instrument: LACHAT2 Analyst: CDE — Analyzed: 06/18/2020 20:03

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BIF0532; Prepared: 06/18/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20F0314-06 G

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	0.425	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	0.060	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW17-6/20

20F0314-06 (Water)

Wet Chemistry

Method: EPA 375.2 — Sampled: 06/17/2020 00:00

Instrument: LACHAT1 Analyst: BF — Analyzed: 06/25/2020 16:04

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-06 G

Preparation Batch: BIF0762 — Sample Size: 10 mL

Prepared: 06/25/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	2.00	2.00	7.09	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW17-6/20

20F0314-06 (Water)

Wet Chemistry

Method: EPA 410.4 — Sampled: 06/17/2020 00:00
Instrument: UV1800-1 Analyst: JM — Analyzed: 06/23/2020 14:16

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-06 E
Preparation Batch: BIF0647 — Sample Size: 2 mL
Prepared: 06/23/2020 — Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	ND	mg/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW17-6/20

20F0314-06 (Water)

Wet Chemistry

Method: EPA 9060A — Sampled: 06/17/2020 00:00

Instrument: TOC-LCSH Analyst: EP — Analyzed: 06/30/2020 14:33

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-06 E

Preparation Batch: BIF0866 — Sample Size: 20 mL

Prepared: 06/29/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	1.67	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW17-6/20

20F0314-06 (Water)

Wet Chemistry

Method: SM 2320 B-97 — Sampled: 06/17/2020 00:00
Instrument: Accumet AB150 Analyst: UW — Analyzed: 06/19/2020 16:02

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-06 G
Preparation Batch: BIF0582 — Sample Size: 100 mL
Prepared: 06/19/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	173	mg/L CaCO3	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	173	mg/L CaCO3	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW17-6/20

20F0314-06 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00 — Sampled: 06/17/2020 00:00

Instrument: Accumet AB150 Analyst: UW — Analyzed: 06/19/2020 16:00

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-06 G

Preparation Batch: BIF0580 — Sample Size: 50 mL

Prepared: 06/19/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	6.38	pH Units	H

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW17-6/20

20F0314-06 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 06/17/2020 00:00

Instrument: LACHAT2 Analyst: WCW — Analyzed: 06/30/2020 13:01

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-06 F

Preparation Batch: BIF0889 — Sample Size: 10 mL

Prepared: 06/30/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	ND	mg/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW17-6/20

20F0314-06 (Water)

Microbiology

Method: SM 9222B — Sampled: 06/17/2020 00:00

Instrument: N/A Analyst: UW — Analyzed: 06/19/2020 17:25

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20F0314-06

Preparation Batch: BIF0530 — Sample Size: 100 mL

Prepared: 06/18/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	H, U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Trip Blank

20F0314-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/17/2020 09:05
Instrument: NT3 Analyst: PKC — Analyzed: 06/25/2020 13:12

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20F0314-07 A
Preparation Batch: BIF0746 — Sample Size: 10 mL
Prepared: 06/25/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Trip Blank

20F0314-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/17/2020 09:05

Instrument: NT3 Analyst: PKC — Analyzed: 06/25/2020 13:12

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Trip Blank

20F0314-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/17/2020 09:05
Instrument: NT3 Analyst: PKC — Analyzed: 06/25/2020 13:12

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*108*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*95.8*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*98.4*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
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Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Trip Blank

20F0314-07 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM — Sampled: 06/17/2020 09:05
Instrument: NT16 Analyst: PB — Analyzed: 06/23/2020 15:38

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20F0314-07 B
Preparation Batch: BIF0572 — Sample Size: 10 mL
Prepared: 06/23/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*99.6*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW1-6/20

20F0314-08 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 — Sampled: 06/17/2020 09:05
Instrument: ICPMS1 Analyst: MCB — Analyzed: 06/29/2020 15:21

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20F0314-08 A 02
Preparation Batch: BIF0837 — Sample Size: 25 mL
Prepared: 06/29/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	1	20.0	ND	ug/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW1-6/20

20F0314-08 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 06/17/2020 09:05
Instrument: ICPMS1 Analyst: MCB — Analyzed: 07/01/2020 16:12

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x — Extract ID: 20F0314-08 A 03
Preparation Batch: BIF0836 — Sample Size: 100 mL
Prepared: 06/29/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0400	0.105	ug/L	

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20F0314-08 A 02
Preparation Batch: BIF0837 — Sample Size: 25 mL
Prepared: 06/29/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	4.00	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW1-6/20

20F0314-08 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010C — Sampled: 06/17/2020 09:05
Instrument: ICP2 Analyst: TCH — Analyzed: 06/29/2020 15:16

Sample Preparation: Preparation Method: WMN (No Prep) — Extract ID: 20F0314-08 A 01
Preparation Batch: BIF0843 — Sample Size: 25 mL
Prepared: 06/29/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0030	0.0039	mg/L	
Manganese, Dissolved	7439-96-5	1	0.0010	ND	mg/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW3-6/20

20F0314-09 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 — Sampled: 06/17/2020 10:06
Instrument: ICPMS1 Analyst: MCB — Analyzed: 06/29/2020 15:26

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20F0314-09 A 02
Preparation Batch: BIF0837 — Sample Size: 25 mL
Prepared: 06/29/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	1	20.0	ND	ug/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW3-6/20

20F0314-09 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 06/17/2020 10:06
Instrument: ICPMS1 Analyst: MCB — Analyzed: 07/01/2020 16:17

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x — Extract ID: 20F0314-09 A 03
Preparation Batch: BIF0836 — Sample Size: 100 mL
Prepared: 06/29/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0400	0.115	ug/L	

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20F0314-09 A 02
Preparation Batch: BIF0837 — Sample Size: 25 mL
Prepared: 06/29/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	4.00	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW3-6/20

20F0314-09 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010C — Sampled: 06/17/2020 10:06
Instrument: ICP2 Analyst: TCH — Analyzed: 06/29/2020 15:20

Sample Preparation: Preparation Method: WMN (No Prep) — Extract ID: 20F0314-09 A 01
Preparation Batch: BIF0843 — Sample Size: 25 mL
Prepared: 06/29/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0030	0.0168	mg/L	
Manganese, Dissolved	7439-96-5	1	0.0010	8.13	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW10-6/20

20F0314-10 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 — Sampled: 06/17/2020 10:55

Instrument: ICPMS1 Analyst: MCB — Analyzed: 06/29/2020 15:30

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20F0314-10 A 02

Preparation Batch: BIF0837 — Sample Size: 25 mL

Prepared: 06/29/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	1	20.0	ND	ug/L	U

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1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW10-6/20

20F0314-10 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 06/17/2020 10:55
Instrument: ICPMS1 Analyst: MCB — Analyzed: 07/01/2020 16:38

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x — Extract ID: 20F0314-10 A 03
Preparation Batch: BIF0836 — Sample Size: 100 mL
Prepared: 06/29/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0400	2.24	ug/L	

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20F0314-10 A 02
Preparation Batch: BIF0837 — Sample Size: 25 mL
Prepared: 06/29/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	4.00	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW10-6/20

20F0314-10 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010C — Sampled: 06/17/2020 10:55
Instrument: ICP2 Analyst: TCH — Analyzed: 06/29/2020 15:25

Sample Preparation: Preparation Method: WMN (No Prep) — Extract ID: 20F0314-10 A 01
Preparation Batch: BIF0843 — Sample Size: 25 mL
Prepared: 06/29/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0030	0.0219	mg/L	
Manganese, Dissolved	7439-96-5	1	0.0010	5.10	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW6-6/20

20F0314-11 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 — Sampled: 06/17/2020 12:20
Instrument: ICPMS1 Analyst: MCB — Analyzed: 06/29/2020 15:33

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20F0314-11 A 02
Preparation Batch: BIF0837 — Sample Size: 25 mL
Prepared: 06/29/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	1	20.0	176	ug/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW6-6/20

20F0314-11 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 06/17/2020 12:20
Instrument: ICPMS1 Analyst: MCB — Analyzed: 07/01/2020 16:22

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x — Extract ID: 20F0314-11 A 03
Preparation Batch: BIF0836 — Sample Size: 100 mL
Prepared: 06/29/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0400	0.435	ug/L	

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20F0314-11 A 02
Preparation Batch: BIF0837 — Sample Size: 25 mL
Prepared: 06/29/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	4.00	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW6-6/20

20F0314-11 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010C — Sampled: 06/17/2020 12:20
Instrument: ICP2 Analyst: TCH — Analyzed: 06/29/2020 16:06

Sample Preparation: Preparation Method: WMN (No Prep) — Extract ID: 20F0314-11 A 01
Preparation Batch: BIF0843 — Sample Size: 25 mL
Prepared: 06/29/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0030	0.0159	mg/L	
Manganese, Dissolved	7439-96-5	1	0.0010	0.524	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW8-6/20

20F0314-12 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 — Sampled: 06/17/2020 13:07
Instrument: ICPMS1 Analyst: MCB — Analyzed: 06/29/2020 15:36

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20F0314-12 A 02
Preparation Batch: BIF0837 — Sample Size: 25 mL
Prepared: 06/29/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	1	20.0	317	ug/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW8-6/20

20F0314-12 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 06/17/2020 13:07
Instrument: ICPMS1 Analyst: MCB — Analyzed: 07/01/2020 16:27

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x — Extract ID: 20F0314-12 A 03
Preparation Batch: BIF0836 — Sample Size: 100 mL
Prepared: 06/29/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0400	0.990	ug/L	

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20F0314-12 A 02
Preparation Batch: BIF0837 — Sample Size: 25 mL
Prepared: 06/29/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	4.00	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW8-6/20

20F0314-12 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010C — Sampled: 06/17/2020 13:07
Instrument: ICP2 Analyst: TCH — Analyzed: 06/29/2020 15:33

Sample Preparation: Preparation Method: WMN (No Prep) — Extract ID: 20F0314-12 A 01
Preparation Batch: BIF0843 — Sample Size: 25 mL
Prepared: 06/29/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0030	0.0041	mg/L	
Manganese, Dissolved	7439-96-5	1	0.0010	2.13	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW17-6/20

20F0314-13 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 — Sampled: 06/17/2020 00:00

Instrument: ICPMS1 Analyst: MCB — Analyzed: 06/29/2020 16:12

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20F0314-13 A 02

Preparation Batch: BIF0837 — Sample Size: 25 mL

Prepared: 06/29/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	1	20.0	182	ug/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW17-6/20

20F0314-13 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 06/17/2020 00:00
Instrument: ICPMS1 Analyst: MCB — Analyzed: 07/01/2020 16:32

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x — Extract ID: 20F0314-13 A 03
Preparation Batch: BIF0836 — Sample Size: 100 mL
Prepared: 06/29/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0400	0.434	ug/L	

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20F0314-13 A 02
Preparation Batch: BIF0837 — Sample Size: 25 mL
Prepared: 06/29/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	4.00	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Olalla-MW17-6/20

20F0314-13 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010C — Sampled: 06/17/2020 00:00
Instrument: ICP2 Analyst: TCH — Analyzed: 06/29/2020 16:11

Sample Preparation: Preparation Method: WMN (No Prep) — Extract ID: 20F0314-13 A 01
Preparation Batch: BIF0843 — Sample Size: 25 mL
Prepared: 06/29/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0030	0.0162	mg/L	
Manganese, Dissolved	7439-96-5	1	0.0010	0.519	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Volatile Organic Compounds - Quality Control

Batch BIF0746 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIF0746-BLK1)				Prepared: 25-Jun-2020 Analyzed: 25-Jun-2020 11:54						
Chloromethane	ND	0.50	ug/L							U
Vinyl Chloride	ND	0.20	ug/L							U
Bromomethane	ND	1.00	ug/L							U
Chloroethane	ND	0.20	ug/L							U
Trichlorofluoromethane	ND	0.20	ug/L							U
Acrolein	ND	5.00	ug/L							U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.20	ug/L							U
Acetone	ND	5.00	ug/L							U
1,1-Dichloroethene	ND	0.20	ug/L							U
Iodomethane	ND	1.00	ug/L							U
Methylene Chloride	ND	1.00	ug/L							U
Acrylonitrile	ND	1.00	ug/L							U
Carbon Disulfide	ND	0.20	ug/L							U
trans-1,2-Dichloroethene	ND	0.20	ug/L							U
Vinyl Acetate	ND	0.20	ug/L							U
1,1-Dichloroethane	ND	0.20	ug/L							U
2-Butanone	ND	5.00	ug/L							U
2,2-Dichloropropane	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Chloroform	ND	0.20	ug/L							U
Bromochloromethane	ND	0.20	ug/L							U
1,1,1-Trichloroethane	ND	0.20	ug/L							U
1,1-Dichloropropene	ND	0.20	ug/L							U
Carbon tetrachloride	ND	0.20	ug/L							U
1,2-Dichloroethane	ND	0.20	ug/L							U
Benzene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
1,2-Dichloropropane	ND	0.20	ug/L							U
Bromodichloromethane	ND	0.20	ug/L							U
Dibromomethane	ND	0.20	ug/L							U
2-Chloroethyl vinyl ether	ND	1.00	ug/L							U
4-Methyl-2-Pentanone	ND	5.00	ug/L							U
cis-1,3-Dichloropropene	ND	0.20	ug/L							U
Toluene	ND	0.20	ug/L							U
trans-1,3-Dichloropropene	ND	0.20	ug/L							U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Volatile Organic Compounds - Quality Control

Batch BIF0746 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIF0746-BLK1)				Prepared: 25-Jun-2020 Analyzed: 25-Jun-2020 11:54						
2-Hexanone	ND	5.00	ug/L							U
1,1,2-Trichloroethane	ND	0.20	ug/L							U
1,3-Dichloropropane	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Dibromochloromethane	ND	0.20	ug/L							U
1,2-Dibromoethane	ND	0.20	ug/L							U
Chlorobenzene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
1,1,1,2-Tetrachloroethane	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Xylenes, total	ND	0.60	ug/L							U
Styrene	ND	0.20	ug/L							U
Bromoform	ND	0.20	ug/L							U
1,1,2,2-Tetrachloroethane	ND	0.20	ug/L							U
1,2,3-Trichloropropane	ND	0.50	ug/L							U
trans-1,4-Dichloro 2-Butene	ND	1.00	ug/L							U
n-Propylbenzene	ND	0.20	ug/L							U
Bromobenzene	ND	0.20	ug/L							U
Isopropyl Benzene	ND	0.20	ug/L							U
2-Chlorotoluene	ND	0.20	ug/L							U
4-Chlorotoluene	ND	0.20	ug/L							U
t-Butylbenzene	ND	0.20	ug/L							U
1,3,5-Trimethylbenzene	ND	0.20	ug/L							U
1,2,4-Trimethylbenzene	ND	0.20	ug/L							U
s-Butylbenzene	ND	0.20	ug/L							U
4-Isopropyl Toluene	ND	0.20	ug/L							U
1,3-Dichlorobenzene	ND	0.20	ug/L							U
1,4-Dichlorobenzene	ND	0.20	ug/L							U
n-Butylbenzene	ND	0.20	ug/L							U
1,2-Dichlorobenzene	ND	0.20	ug/L							U
1,2-Dibromo-3-chloropropane	ND	0.50	ug/L							U
1,2,4-Trichlorobenzene	ND	0.50	ug/L							U
Hexachloro-1,3-Butadiene	ND	0.50	ug/L							U
Naphthalene	ND	0.50	ug/L							U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Volatile Organic Compounds - Quality Control

Batch BIF0746 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIF0746-BLK1)				Prepared: 25-Jun-2020 Analyzed: 25-Jun-2020 11:54						
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U
Dichlorodifluoromethane	ND	0.20	ug/L							U
Methyl tert-butyl Ether	ND	0.50	ug/L							U
2-Pentanone	ND	5.00	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5.21		ug/L	*5.00*		*104*	*80-129*			
Surrogate: Toluene-d8	5.06		ug/L	*5.00*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.71		ug/L	*5.00*		*94.2*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.22		ug/L	*5.00*		*104*	*80-120*			
LCS (BIF0746-BS1)				Prepared: 25-Jun-2020 Analyzed: 25-Jun-2020 10:10						
Chloromethane	9.88	0.50	ug/L	10.0		98.8	60-138			
Vinyl Chloride	11.8	0.20	ug/L	10.0		118	66-133			
Bromomethane	11.6	1.00	ug/L	10.0		116	72-131			
Chloroethane	13.2	0.20	ug/L	10.0		132	60-155			Q
Trichlorofluoromethane	9.98	0.20	ug/L	10.0		99.8	80-129			
Acrolein	48.5	5.00	ug/L	50.0		97.0	52-144			
1,1,2-Trichloro-1,2,2-Trifluoroethane	12.0	0.20	ug/L	10.0		120	76-129			
Acetone	50.4	5.00	ug/L	50.0		101	58-142			
1,1-Dichloroethene	11.9	0.20	ug/L	10.0		119	69-135			
Iodomethane	11.5	1.00	ug/L	10.0		115	56-147			
Methylene Chloride	11.2	1.00	ug/L	10.0		112	65-135			
Acrylonitrile	9.10	1.00	ug/L	10.0		91.0	64-134			
Carbon Disulfide	11.8	0.20	ug/L	10.0		118	78-125			
trans-1,2-Dichloroethene	11.0	0.20	ug/L	10.0		110	78-128			
Vinyl Acetate	10.5	0.20	ug/L	10.0		105	55-138			
1,1-Dichloroethane	11.5	0.20	ug/L	10.0		115	76-124			
2-Butanone	47.3	5.00	ug/L	50.0		94.7	61-140			
2,2-Dichloropropane	12.4	0.20	ug/L	10.0		124	78-125			Q
cis-1,2-Dichloroethene	11.2	0.20	ug/L	10.0		112	80-121			
Chloroform	10.9	0.20	ug/L	10.0		109	80-122			
Bromochloromethane	10.8	0.20	ug/L	10.0		108	80-121			
1,1,1-Trichloroethane	12.2	0.20	ug/L	10.0		122	79-123			Q
1,1-Dichloropropene	11.8	0.20	ug/L	10.0		118	80-120			
Carbon tetrachloride	12.1	0.20	ug/L	10.0		121	53-137			Q
1,2-Dichloroethane	10.9	0.20	ug/L	10.0		109	75-123			

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Volatile Organic Compounds - Quality Control

Batch BIF0746 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BIF0746-BS1)				Prepared: 25-Jun-2020 Analyzed: 25-Jun-2020 10:10						
Benzene	11.3	0.20	ug/L	10.0		113	80-120			
Trichloroethene	12.0	0.20	ug/L	10.0		120	80-120			
1,2-Dichloropropane	11.0	0.20	ug/L	10.0		110	80-120			
Bromodichloromethane	10.9	0.20	ug/L	10.0		109	80-121			
Dibromomethane	10.6	0.20	ug/L	10.0		106	80-120			
2-Chloroethyl vinyl ether	10.1	1.00	ug/L	10.0		101	74-127			
4-Methyl-2-Pentanone	48.6	5.00	ug/L	50.0		97.2	67-133			
cis-1,3-Dichloropropene	11.5	0.20	ug/L	10.0		115	80-124			
Toluene	11.3	0.20	ug/L	10.0		113	80-120			
trans-1,3-Dichloropropene	11.4	0.20	ug/L	10.0		114	71-127			
2-Hexanone	47.7	5.00	ug/L	50.0		95.3	69-133			
1,1,2-Trichloroethane	10.8	0.20	ug/L	10.0		108	80-121			
1,3-Dichloropropane	10.4	0.20	ug/L	10.0		104	80-120			
Tetrachloroethene	11.7	0.20	ug/L	10.0		117	80-120			
Dibromochloromethane	10.8	0.20	ug/L	10.0		108	65-135			
1,2-Dibromoethane	10.8	0.20	ug/L	10.0		108	80-121			
Chlorobenzene	11.3	0.20	ug/L	10.0		113	80-120			
Ethylbenzene	11.7	0.20	ug/L	10.0		117	80-120			
1,1,1,2-Tetrachloroethane	10.7	0.20	ug/L	10.0		107	80-120			
m,p-Xylene	23.4	0.40	ug/L	20.0		117	80-121			
o-Xylene	11.4	0.20	ug/L	10.0		114	80-121			
Xylenes, total	34.8	0.60	ug/L	30.0		116	76-127			
Styrene	11.6	0.20	ug/L	10.0		116	80-124			
Bromoform	10.4	0.20	ug/L	10.0		104	51-134			
1,1,2,2-Tetrachloroethane	10.2	0.20	ug/L	10.0		102	77-123			
1,2,3-Trichloropropane	9.04	0.50	ug/L	10.0		90.4	76-125			
trans-1,4-Dichloro 2-Butene	10.1	1.00	ug/L	10.0		101	55-129			
n-Propylbenzene	11.6	0.20	ug/L	10.0		116	78-130			
Bromobenzene	10.5	0.20	ug/L	10.0		105	80-120			
Isopropyl Benzene	11.5	0.20	ug/L	10.0		115	80-128			
2-Chlorotoluene	11.5	0.20	ug/L	10.0		115	78-122			
4-Chlorotoluene	11.6	0.20	ug/L	10.0		116	80-121			
t-Butylbenzene	11.4	0.20	ug/L	10.0		114	78-125			
1,3,5-Trimethylbenzene	11.5	0.20	ug/L	10.0		115	80-129			
1,2,4-Trimethylbenzene	11.7	0.20	ug/L	10.0		117	80-127			

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Volatile Organic Compounds - Quality Control

Batch BIF0746 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BIF0746-BS1)				Prepared: 25-Jun-2020 Analyzed: 25-Jun-2020 10:10						
s-Butylbenzene	11.6	0.20	ug/L	10.0		116	78-129			
4-Isopropyl Toluene	11.6	0.20	ug/L	10.0		116	79-130			
1,3-Dichlorobenzene	11.2	0.20	ug/L	10.0		112	80-120			
1,4-Dichlorobenzene	10.8	0.20	ug/L	10.0		108	80-120			
n-Butylbenzene	11.5	0.20	ug/L	10.0		115	74-129			
1,2-Dichlorobenzene	10.5	0.20	ug/L	10.0		105	80-120			
1,2-Dibromo-3-chloropropane	10.1	0.50	ug/L	10.0		101	62-123			
1,2,4-Trichlorobenzene	9.93	0.50	ug/L	10.0		99.3	64-124			
Hexachloro-1,3-Butadiene	11.9	0.50	ug/L	10.0		119	58-123			
Naphthalene	9.60	0.50	ug/L	10.0		96.0	50-134			
1,2,3-Trichlorobenzene	9.45	0.50	ug/L	10.0		94.5	49-133			
Dichlorodifluoromethane	13.3	0.20	ug/L	10.0		133	48-147			Q
Methyl tert-butyl Ether	10.4	0.50	ug/L	10.0		104	71-132			
2-Pentanone	50.8	5.00	ug/L	50.0		102	69-134			
Surrogate: 1,2-Dichloroethane-d4	4.94		ug/L	*5.00*		*98.8*	*80-129*			
Surrogate: Toluene-d8	5.07		ug/L	*5.00*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.15		ug/L	*5.00*		*103*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.79		ug/L	*5.00*		*95.9*	*80-120*			
LCS Dup (BIF0746-BSD1)				Prepared: 25-Jun-2020 Analyzed: 25-Jun-2020 10:36						
Chloromethane	9.59	0.50	ug/L	10.0		95.9	60-138	2.90	30	
Vinyl Chloride	11.7	0.20	ug/L	10.0		117	66-133	1.09	30	
Bromomethane	11.3	1.00	ug/L	10.0		113	72-131	3.13	30	
Chloroethane	13.2	0.20	ug/L	10.0		132	60-155	0.33	30	Q
Trichlorofluoromethane	10.5	0.20	ug/L	10.0		105	80-129	5.35	30	
Acrolein	50.9	5.00	ug/L	50.0		102	52-144	4.95	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	11.4	0.20	ug/L	10.0		114	76-129	5.31	30	
Acetone	52.0	5.00	ug/L	50.0		104	58-142	2.95	30	
1,1-Dichloroethene	12.0	0.20	ug/L	10.0		120	69-135	0.40	30	
Iodomethane	11.3	1.00	ug/L	10.0		113	56-147	1.18	30	
Methylene Chloride	10.9	1.00	ug/L	10.0		109	65-135	2.16	30	
Acrylonitrile	9.87	1.00	ug/L	10.0		98.7	64-134	8.11	30	
Carbon Disulfide	11.4	0.20	ug/L	10.0		114	78-125	2.94	30	
trans-1,2-Dichloroethene	11.2	0.20	ug/L	10.0		112	78-128	1.49	30	
Vinyl Acetate	10.5	0.20	ug/L	10.0		105	55-138	0.69	30	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Volatile Organic Compounds - Quality Control

Batch BIF0746 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BIF0746-BSD1)				Prepared: 25-Jun-2020 Analyzed: 25-Jun-2020 10:36						
1,1-Dichloroethane	11.5	0.20	ug/L	10.0		115	76-124	0.02	30	
2-Butanone	51.1	5.00	ug/L	50.0		102	61-140	7.69	30	
2,2-Dichloropropane	12.1	0.20	ug/L	10.0		121	78-125	2.81	30	Q
cis-1,2-Dichloroethene	11.1	0.20	ug/L	10.0		111	80-121	0.87	30	
Chloroform	10.9	0.20	ug/L	10.0		109	80-122	0.41	30	
Bromochloromethane	11.2	0.20	ug/L	10.0		112	80-121	3.48	30	
1,1,1-Trichloroethane	12.2	0.20	ug/L	10.0		122	79-123	0.28	30	Q
1,1-Dichloropropene	11.3	0.20	ug/L	10.0		113	80-120	5.01	30	
Carbon tetrachloride	12.1	0.20	ug/L	10.0		121	53-137	0.36	30	Q
1,2-Dichloroethane	11.4	0.20	ug/L	10.0		114	75-123	3.83	30	
Benzene	10.9	0.20	ug/L	10.0		109	80-120	3.72	30	
Trichloroethene	12.1	0.20	ug/L	10.0		121	80-120	0.66	30	*
1,2-Dichloropropane	10.8	0.20	ug/L	10.0		108	80-120	1.61	30	
Bromodichloromethane	11.0	0.20	ug/L	10.0		110	80-121	0.39	30	
Dibromomethane	10.5	0.20	ug/L	10.0		105	80-120	0.56	30	
2-Chloroethyl vinyl ether	9.82	1.00	ug/L	10.0		98.2	74-127	3.00	30	
4-Methyl-2-Pentanone	50.7	5.00	ug/L	50.0		101	67-133	4.12	30	
cis-1,3-Dichloropropene	11.3	0.20	ug/L	10.0		113	80-124	2.40	30	
Toluene	11.1	0.20	ug/L	10.0		111	80-120	1.53	30	
trans-1,3-Dichloropropene	11.2	0.20	ug/L	10.0		112	71-127	1.79	30	
2-Hexanone	52.1	5.00	ug/L	50.0		104	69-133	8.85	30	
1,1,2-Trichloroethane	10.8	0.20	ug/L	10.0		108	80-121	0.29	30	
1,3-Dichloropropane	10.8	0.20	ug/L	10.0		108	80-120	3.98	30	
Tetrachloroethene	11.3	0.20	ug/L	10.0		113	80-120	3.40	30	
Dibromochloromethane	11.1	0.20	ug/L	10.0		111	65-135	2.83	30	
1,2-Dibromoethane	10.9	0.20	ug/L	10.0		109	80-121	0.66	30	
Chlorobenzene	11.2	0.20	ug/L	10.0		112	80-120	1.15	30	
Ethylbenzene	11.4	0.20	ug/L	10.0		114	80-120	2.89	30	
1,1,1,2-Tetrachloroethane	10.7	0.20	ug/L	10.0		107	80-120	0.74	30	
m,p-Xylene	22.8	0.40	ug/L	20.0		114	80-121	2.60	30	
o-Xylene	11.4	0.20	ug/L	10.0		114	80-121	0.49	30	
Xylenes, total	34.1	0.60	ug/L	30.0		114	76-127	1.90	30	
Styrene	11.7	0.20	ug/L	10.0		117	80-124	1.18	30	
Bromoform	10.8	0.20	ug/L	10.0		108	51-134	3.65	30	
1,1,2,2-Tetrachloroethane	10.6	0.20	ug/L	10.0		106	77-123	3.43	30	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Volatile Organic Compounds - Quality Control

Batch BIF0746 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BIF0746-BSD1)				Prepared: 25-Jun-2020 Analyzed: 25-Jun-2020 10:36						
1,2,3-Trichloropropane	10.4	0.50	ug/L	10.0		104	76-125	13.80	30	
trans-1,4-Dichloro 2-Butene	10.3	1.00	ug/L	10.0		103	55-129	1.87	30	
n-Propylbenzene	11.6	0.20	ug/L	10.0		116	78-130	0.37	30	
Bromobenzene	11.0	0.20	ug/L	10.0		110	80-120	4.69	30	
Isopropyl Benzene	11.4	0.20	ug/L	10.0		114	80-128	0.82	30	
2-Chlorotoluene	11.5	0.20	ug/L	10.0		115	78-122	0.77	30	
4-Chlorotoluene	11.3	0.20	ug/L	10.0		113	80-121	2.47	30	
t-Butylbenzene	11.3	0.20	ug/L	10.0		113	78-125	0.64	30	
1,3,5-Trimethylbenzene	11.4	0.20	ug/L	10.0		114	80-129	0.22	30	
1,2,4-Trimethylbenzene	11.3	0.20	ug/L	10.0		113	80-127	2.85	30	
s-Butylbenzene	11.5	0.20	ug/L	10.0		115	78-129	1.05	30	
4-Isopropyl Toluene	11.4	0.20	ug/L	10.0		114	79-130	1.45	30	
1,3-Dichlorobenzene	11.1	0.20	ug/L	10.0		111	80-120	1.00	30	
1,4-Dichlorobenzene	11.1	0.20	ug/L	10.0		111	80-120	2.16	30	
n-Butylbenzene	11.3	0.20	ug/L	10.0		113	74-129	1.65	30	
1,2-Dichlorobenzene	10.9	0.20	ug/L	10.0		109	80-120	3.53	30	
1,2-Dibromo-3-chloropropane	10.9	0.50	ug/L	10.0		109	62-123	7.67	30	
1,2,4-Trichlorobenzene	10.4	0.50	ug/L	10.0		104	64-124	4.31	30	
Hexachloro-1,3-Butadiene	10.7	0.50	ug/L	10.0		107	58-123	10.10	30	
Naphthalene	10.4	0.50	ug/L	10.0		104	50-134	7.80	30	
1,2,3-Trichlorobenzene	10.6	0.50	ug/L	10.0		106	49-133	11.20	30	
Dichlorodifluoromethane	12.0	0.20	ug/L	10.0		120	48-147	10.50	30	Q
Methyl tert-butyl Ether	11.2	0.50	ug/L	10.0		112	71-132	6.75	30	
2-Pentanone	51.5	5.00	ug/L	50.0		103	69-134	1.45	30	
Surrogate: 1,2-Dichloroethane-d4	5.39		ug/L	*5.00*		*108*	*80-129*			
Surrogate: Toluene-d8	5.06		ug/L	*5.00*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.89		ug/L	*5.00*		*97.7*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.20		ug/L	*5.00*		*104*	*80-120*			

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Volatile Organic Compounds - SIM - Quality Control

Batch BIF0572 - EPA 5030C (Purge and Trap)

Instrument: NT16 Analyst: PB

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIF0572-BLK1)				Prepared: 23-Jun-2020 Analyzed: 23-Jun-2020 13:59						
Vinyl chloride	ND	20.0	ng/L							U
Surrogate: 1,2-Dichloroethane-d4	4950		ng/L	*5000*		*98.9*	*80-129*			
LCS (BIF0572-BS1)				Prepared: 23-Jun-2020 Analyzed: 23-Jun-2020 12:57						
Vinyl chloride	2340	20.0	ng/L	2000		117	76-120			
Surrogate: 1,2-Dichloroethane-d4	5040		ng/L	*5000*		*101*	*80-129*			
LCS Dup (BIF0572-BSD1)				Prepared: 23-Jun-2020 Analyzed: 23-Jun-2020 13:17						
Vinyl chloride	2320	20.0	ng/L	2000		116	76-120	0.80	30	
Surrogate: 1,2-Dichloroethane-d4	5260		ng/L	*5000*		*105*	*80-129*			

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Metals and Metallic Compounds - Quality Control

Batch BIF0839 - TWC EPA 3010A

Instrument: ICP2 Analyst: TCH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIF0839-BLK1)				Prepared: 29-Jun-2020 Analyzed: 30-Jun-2020 14:12						
Calcium	ND	0.0500	mg/L							U
Potassium	ND	0.500	mg/L							U
Sodium	ND	0.500	mg/L							U
Sodium	ND	50.0	mg/L							U
LCS (BIF0839-BS1)				Prepared: 29-Jun-2020 Analyzed: 30-Jun-2020 14:48						
Calcium	10.0	0.0500	mg/L	10.0		100	80-120			
Potassium	10.0	0.500	mg/L	10.0		100	80-120			
Sodium	10.1	0.500	mg/L	10.0		101	80-120			
Sodium	ND	50.0	mg/L	10.0		110	80-120			U
Duplicate (BIF0839-DUP1)	**Source: 20F0314-06**			Prepared: 29-Jun-2020 Analyzed: 30-Jun-2020 15:33						
Calcium	34.2	0.0500	mg/L		33.7			1.44	20	
Potassium	1.51	0.500	mg/L		1.47			2.62	20	
Sodium	9.92	0.500	mg/L		9.74			1.85	20	
Sodium	ND	50.0	mg/L		10.7			1.56	20	U
Matrix Spike (BIF0839-MS1)	**Source: 20F0314-06**			Prepared: 29-Jun-2020 Analyzed: 30-Jun-2020 15:42						
Calcium	45.2	0.0500	mg/L	10.0	33.7	116	75-125			
Potassium	11.7	0.500	mg/L	10.0	1.47	102	75-125			
Sodium	20.4	0.500	mg/L	10.0	9.74	106	75-125			
Sodium	ND	50.0	mg/L	10.0	10.7	110	75-125			U

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

Matrix Spike Dup (BIF0839-MSD1)	**Source: 20F0314-06**			Prepared: 29-Jun-2020 Analyzed: 30-Jun-2020 15:46						
Calcium	44.6	0.0500	mg/L	10.0	33.7	110	75-125	1.38	20	
Potassium	11.7	0.500	mg/L	10.0	1.47	103	75-125	0.30	20	
Sodium	20.2	0.500	mg/L	10.0	9.74	104	75-125	0.98	20	
Sodium	ND	50.0	mg/L	10.0	10.7	107	75-125	1.42	20	U

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BIF0836 - RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIF0836-BLK1)				Prepared: 29-Jun-2020 Analyzed: 01-Jul-2020 15:08							
Arsenic, Dissolved	75a	ND	0.0400	ug/L							U
LCS (BIF0836-BS1)				Prepared: 29-Jun-2020 Analyzed: 01-Jul-2020 15:13							
Arsenic, Dissolved	75a	4.75	0.0400	ug/L	5.00		95.0	80-120			

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BIF0837 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIF0837-BLK1)				Prepared: 29-Jun-2020 Analyzed: 29-Jun-2020 15:14							
Iron, Dissolved	54	ND	20.0	ug/L							U
Iron, Dissolved	57	ND	20.0	ug/L							U
Blank (BIF0837-BLK2)				Prepared: 29-Jun-2020 Analyzed: 30-Jun-2020 15:31							
Zinc, Dissolved	66	ND	4.00	ug/L							U
Zinc, Dissolved	67	ND	4.00	ug/L							U
LCS (BIF0837-BS1)				Prepared: 29-Jun-2020 Analyzed: 29-Jun-2020 15:17							
Iron, Dissolved	54	4800	20.0	ug/L	5000		95.9	80-120			
Iron, Dissolved	57	4950	20.0	ug/L	5000		99.1	80-120			
LCS (BIF0837-BS2)				Prepared: 29-Jun-2020 Analyzed: 30-Jun-2020 15:36							
Zinc, Dissolved	66	81.5	4.00	ug/L	80.0		102	80-120			
Zinc, Dissolved	67	79.8	4.00	ug/L	80.0		99.7	80-120			
Duplicate (BIF0837-DUP1)		**Source: 20F0314-13**		Prepared: 29-Jun-2020 Analyzed: 29-Jun-2020 16:17							
Iron, Dissolved	54	174	20.0	ug/L		182			4.27	20	
Duplicate (BIF0837-DUP2)		**Source: 20F0314-13**		Prepared: 29-Jun-2020 Analyzed: 30-Jun-2020 17:55							
Zinc, Dissolved	66	ND	4.00	ug/L		ND					L, U
Matrix Spike (BIF0837-MS1)		**Source: 20F0314-13**		Prepared: 29-Jun-2020 Analyzed: 29-Jun-2020 16:21							
Iron, Dissolved	54	4370	20.0	ug/L	5000	182	83.8	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike (BIF0837-MS2)		**Source: 20F0314-13**		Prepared: 29-Jun-2020 Analyzed: 30-Jun-2020 17:59							
Zinc, Dissolved	66	80.0	4.00	ug/L	80.0	ND	98.1	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BIF0837-MSD1)		**Source: 20F0314-13**		Prepared: 29-Jun-2020 Analyzed: 29-Jun-2020 16:25							
Iron, Dissolved	54	4310	20.0	ug/L	5000	182	82.6	75-125	1.41	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BIF0837-MSD2)		**Source: 20F0314-13**		Prepared: 29-Jun-2020 Analyzed: 30-Jun-2020 18:05							
Zinc, Dissolved	66	76.8	4.00	ug/L	80.0	ND	94.1	75-125	4.07	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BIF0843 - WMN (No Prep)

Instrument: ICP2 Analyst: TCH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIF0843-BLK1)				Prepared: 29-Jun-2020 Analyzed: 29-Jun-2020 13:20						
Barium, Dissolved	ND	0.0030	mg/L							U
Manganese, Dissolved	ND	0.0010	mg/L							U
LCS (BIF0843-BS1)				Prepared: 29-Jun-2020 Analyzed: 29-Jun-2020 13:54						
Barium, Dissolved	1.99	0.0030	mg/L	2.00		99.7	80-120			
Manganese, Dissolved	0.480	0.0010	mg/L	0.500		95.9	80-120			
Duplicate (BIF0843-DUP2)	**Source: 20F0314-12**			Prepared: 29-Jun-2020 Analyzed: 29-Jun-2020 15:29						
Barium, Dissolved	0.0053	0.0030	mg/L		0.0041			26.40	20	L
Manganese, Dissolved	2.15	0.0010	mg/L		2.13			1.01	20	
Matrix Spike (BIF0843-MS2)	**Source: 20F0314-12**			Prepared: 29-Jun-2020 Analyzed: 29-Jun-2020 15:38						
Barium, Dissolved	2.04	0.0030	mg/L	2.00	0.0041	102	75-125			
Manganese, Dissolved	2.62	0.0010	mg/L	0.500	2.13	97.0	75-125			

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

Matrix Spike Dup (BIF0843-MSD2)	**Source: 20F0314-12**			Prepared: 29-Jun-2020 Analyzed: 29-Jun-2020 15:42						
Barium, Dissolved	2.02	0.0030	mg/L	2.00	0.0041	101	75-125	0.77	20	
Manganese, Dissolved	2.60	0.0010	mg/L	0.500	2.13	93.9	75-125	0.60	20	

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Wet Chemistry - Quality Control

Batch BIF0532 - No Prep Wet Chem

Instrument: LACHAT2 Analyst: CDE

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIF0532-BLK1)				Prepared: 18-Jun-2020 Analyzed: 18-Jun-2020 19:42							
Nitrate + Nitrite as N	ND	0.010	0.010	mg/L							U
Nitrite-N	ND	0.010	0.010	mg/L							U
LCS (BIF0532-BS1)				Prepared: 18-Jun-2020 Analyzed: 18-Jun-2020 19:43							
Nitrate + Nitrite as N	0.549	0.010	0.010	mg/L	0.500		110	90-110			
LCS (BIF0532-BS2)				Prepared: 18-Jun-2020 Analyzed: 18-Jun-2020 19:44							
Nitrite-N	0.518	0.010	0.010	mg/L	0.500		104	75-125			
Duplicate (BIF0532-DUP1)		**Source: 20F0314-06**		Prepared: 18-Jun-2020 Analyzed: 18-Jun-2020 20:04							
Nitrate + Nitrite as N	0.428	0.010	0.010	mg/L		0.425			0.70	20	
Nitrite-N	0.060	0.010	0.010	mg/L		0.060			0.50	20	
Matrix Spike (BIF0532-MS1)		**Source: 20F0314-06**		Prepared: 18-Jun-2020 Analyzed: 18-Jun-2020 20:06							
Nitrate + Nitrite as N	0.968	0.010	0.010	mg/L	0.500	0.425	109	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike (BIF0532-MS2)		**Source: 20F0314-06**		Prepared: 18-Jun-2020 Analyzed: 18-Jun-2020 20:07							
Nitrite-N	0.571	0.010	0.010	mg/L	0.500	0.060	102	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BIF0532-MSD1)		**Source: 20F0314-06**		Prepared: 18-Jun-2020 Analyzed: 18-Jun-2020 20:08							
Nitrate + Nitrite as N	0.970	0.010	0.010	mg/L	0.500	0.425	109	75-125	0.21	200	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BIF0532-MSD2)		**Source: 20F0314-06**		Prepared: 18-Jun-2020 Analyzed: 18-Jun-2020 20:09							
Nitrite-N	0.574	0.010	0.010	mg/L	0.500	0.060	103	75-125	0.52	200	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Wet Chemistry - Quality Control

Batch BIF0580 - No Prep Wet Chem

Instrument: Accumet AB150 Analyst: UW

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BIF0580-BS1)				Prepared: 19-Jun-2020 Analyzed: 19-Jun-2020 16:00							
pH	7.04	0.01	0.01	pH Units	7.00		101	99.2-100.8			
Duplicate (BIF0580-DUP1)		**Source: 20F0314-06**		Prepared: 19-Jun-2020 Analyzed: 19-Jun-2020 16:00							
pH	6.87	0.01	0.01	pH Units		6.38			7.40	20	H

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Wet Chemistry - Quality Control

Batch BIF0582 - No Prep Wet Chem

Instrument: Accumet AB150 Analyst: UW

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIF0582-BLK1)					Prepared: 19-Jun-2020 Analyzed: 19-Jun-2020 16:02						
Alkalinity, Total	ND	1.00	1.00	mg/L CaCO3							U
Duplicate (BIF0582-DUP1)			**Source: 20F0314-06**		Prepared: 19-Jun-2020 Analyzed: 19-Jun-2020 16:02						
Alkalinity, Total	174	1.00	1.00	mg/L CaCO3		173			0.59	20	
Reference (BIF0582-SRM1)					Prepared: 19-Jun-2020 Analyzed: 19-Jun-2020 16:02						
Alkalinity, Total	104	1.00	1.00	mg/L CaCO3	106		97.8	90.57-107.55			

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Wet Chemistry - Quality Control

Batch BIF0647 - No Prep Wet Chem

Instrument: UV1800-1 Analyst: JM

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIF0647-BLK1)				Prepared: 23-Jun-2020 Analyzed: 23-Jun-2020 14:14							
COD	ND	10.0	10.0	mg/L							U
LCS (BIF0647-BS1)				Prepared: 23-Jun-2020 Analyzed: 23-Jun-2020 14:14							
COD	99.9	10.0	10.0	mg/L	100		99.9	90-110			
Duplicate (BIF0647-DUP1)		**Source: 20F0314-06**		Prepared: 23-Jun-2020 Analyzed: 23-Jun-2020 14:17							
COD	ND	10.0	10.0	mg/L		ND					U
Matrix Spike (BIF0647-MS1)		**Source: 20F0314-06**		Prepared: 23-Jun-2020 Analyzed: 23-Jun-2020 14:18							
COD	109	10.0	20.0	mg/L	100	ND	109	90-110			

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Wet Chemistry - Quality Control

Batch BIF0680 - No Prep Wet Chem

Instrument: LACHAT2 Analyst: BF

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIF0680-BLK1)				Prepared: 23-Jun-2020 Analyzed: 25-Jun-2020 14:28							
Chloride	ND	1.00	1.00	mg/L							U
LCS (BIF0680-BS1)				Prepared: 23-Jun-2020 Analyzed: 25-Jun-2020 14:30							
Chloride	4.69	1.00	1.00	mg/L	5.00		93.8	90-110			
Duplicate (BIF0680-DUP1)		**Source: 20F0314-06**		Prepared: 23-Jun-2020 Analyzed: 25-Jun-2020 14:49							
Chloride	2.85	1.00	1.00	mg/L		2.81			1.41	20	
Matrix Spike (BIF0680-MS1)		**Source: 20F0314-06**		Prepared: 23-Jun-2020 Analyzed: 25-Jun-2020 14:50							
Chloride	8.46	1.00	1.00	mg/L	5.00	2.81	113	75-125			

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

Matrix Spike Dup (BIF0680-MSD1)		**Source: 20F0314-06**		Prepared: 23-Jun-2020 Analyzed: 25-Jun-2020 14:51							
Chloride	8.55	1.00	1.00	mg/L	5.00	2.81	115	75-125	1.06	20	

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Wet Chemistry - Quality Control

Batch BIF0762 - No Prep Wet Chem

Instrument: LACHAT1 Analyst: BF

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIF0762-BLK1)					Prepared: 25-Jun-2020 Analyzed: 25-Jun-2020 15:33						
Sulfate	ND	2.00	2.00	mg/L							U
LCS (BIF0762-BS1)					Prepared: 25-Jun-2020 Analyzed: 25-Jun-2020 15:34						
Sulfate	14.9	2.00	2.00	mg/L	15.0		99.3	90-110			
Duplicate (BIF0762-DUP1)		**Source: 20F0314-06**			Prepared: 25-Jun-2020 Analyzed: 25-Jun-2020 16:05						
Sulfate	7.10	2.00	2.00	mg/L		7.09			0.14	20	
Matrix Spike (BIF0762-MS1)		**Source: 20F0314-06**			Prepared: 25-Jun-2020 Analyzed: 25-Jun-2020 16:06						
Sulfate	23.3	2.00	2.00	mg/L	15.0	7.09	108	75-125			

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

Matrix Spike Dup (BIF0762-MSD1)		**Source: 20F0314-06**			Prepared: 25-Jun-2020 Analyzed: 25-Jun-2020 16:07						
Sulfate	24.0	2.00	2.00	mg/L	15.0	7.09	113	75-125	2.96	20	

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Wet Chemistry - Quality Control

Batch BIF0866 - No Prep Wet Chem

Instrument: TOC-LCSH Analyst: EP

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIF0866-BLK1)					Prepared: 29-Jun-2020 Analyzed: 30-Jun-2020 11:34						
Total Organic Carbon	ND	0.50	0.50	mg/L							U
LCS (BIF0866-BS1)					Prepared: 29-Jun-2020 Analyzed: 30-Jun-2020 11:56						
Total Organic Carbon	21.38	0.50	0.50	mg/L	20.00		107	90-110			
Duplicate (BIF0866-DUP1)		**Source: 20F0314-06**			Prepared: 29-Jun-2020 Analyzed: 30-Jun-2020 14:55						
Total Organic Carbon	1.64	0.50	0.50	mg/L		1.67			1.69	20	
Matrix Spike (BIF0866-MS1)		**Source: 20F0314-06**			Prepared: 29-Jun-2020 Analyzed: 30-Jun-2020 15:58						
Total Organic Carbon	22.22	0.50	0.50	mg/L	20.00	1.67	103	75-125			

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

Matrix Spike Dup (BIF0866-MSD1)		**Source: 20F0314-06**			Prepared: 29-Jun-2020 Analyzed: 30-Jun-2020 16:17						
Total Organic Carbon	22.87	0.50	0.50	mg/L	20.00	1.67	106	75-125	2.88	20	

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Wet Chemistry - Quality Control

Batch BIF0889 - No Prep Wet Chem

Instrument: LACHAT2 Analyst: WCW

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIF0889-BLK1)					Prepared: 30-Jun-2020 Analyzed: 30-Jun-2020 12:39						
Ammonia-N	ND	0.040	0.040	mg/L							U
LCS (BIF0889-BS2)					Prepared: 30-Jun-2020 Analyzed: 30-Jun-2020 13:39						
Ammonia-N	0.499	0.040	0.040	mg/L	0.500		99.8	90-110			
Duplicate (BIF0889-DUP1)		**Source: 20F0314-06**			Prepared: 30-Jun-2020 Analyzed: 30-Jun-2020 13:03						
Ammonia-N	ND	0.040	0.040	mg/L		ND					U
Matrix Spike (BIF0889-MS2)		**Source: 20F0314-06**			Prepared: 30-Jun-2020 Analyzed: 30-Jun-2020 13:41						
Ammonia-N	0.541	0.040	0.040	mg/L	0.500	ND	108	75-125			

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

Matrix Spike Dup (BIF0889-MSD2)		**Source: 20F0314-06**			Prepared: 30-Jun-2020 Analyzed: 30-Jun-2020 13:42						
Ammonia-N	0.552	0.040	0.040	mg/L	0.500	ND	110	75-125	2.01	200	

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Microbiology - Quality Control

Batch BIF0530 - No Prep Wet Chem

Instrument: N/A

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIF0530-BLK1)				Prepared: 18-Jun-2020 Analyzed: 19-Jun-2020 17:25							
Total Coliforms	ND	1	1	CFU/100 ml							U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.8 in Water	
Iron-54	WADOE,DoD-ELAP
Iron-54	NELAP,WADOE,DoD-ELAP
Iron-57	NELAP,WADOE,DoD-ELAP
Iron-57	WADOE,DoD-ELAP
EPA 200.8 UCT-KED in Water	
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Arsenic-75a	WADOE,WA-DW,DoD-ELAP
Zinc-66	WADOE,WA-DW,DoD-ELAP
Zinc-66	NELAP,WADOE,WA-DW,DoD-ELAP
Zinc-67	WADOE,WA-DW,DoD-ELAP
Zinc-67	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 353.2 in Water	
Nitrate + Nitrite as N	DoD-ELAP,WADOE
Nitrate + Nitrite as N	NELAP,DoD-ELAP,WADOE
Nitrite-N	WADOE,NELAP,DoD-ELAP
Nitrite-N	WADOE,DoD-ELAP
EPA 375.2 in Water	
Sulfate	WADOE
Sulfate	WADOE,NELAP
EPA 410.4 in Water	
COD	DoD-ELAP,WADOE
COD	DoD-ELAP,NELAP,WADOE
EPA 6010C in Water	
Calcium	WADOE,DoD-ELAP
Calcium	WADOE,NELAP,DoD-ELAP
Potassium	WADOE,NELAP,DoD-ELAP
Potassium	WADOE,DoD-ELAP
Sodium	DoD-ELAP,WADOE
Sodium	DoD-ELAP,WADOE,NELAP
Sodium-1	DoD-ELAP
Sodium-1	DoD-ELAP
Barium	WADOE,DoD-ELAP
Barium	WADOE,NELAP,DoD-ELAP

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
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Manganese	WADOE,DoD-ELAP
Manganese	WADOE,NELAP,DoD-ELAP

EPA 8260D in Water

Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloromethane	DoD-ELAP,ADEC,CALAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,CALAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,CALAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,CALAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,CALAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
Acrolein	DoD-ELAP,CALAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,CALAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,CALAP,WADOE
Iodomethane	DoD-ELAP,CALAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,CALAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Acrylonitrile	DoD-ELAP,CALAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,CALAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,CALAP,WADOE
Vinyl Acetate	DoD-ELAP,CALAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,CALAP,WADOE
2-Butanone	DoD-ELAP,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,CALAP,WADOE

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
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cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,CALAP,WADOE
Chloroform	DoD-ELAP,ADEC,CALAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,CALAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,CALAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,CALAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Benzene	DoD-ELAP,ADEC,CALAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,CALAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,CALAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,CALAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,CALAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,CALAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,CALAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,CALAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,WADOE
Toluene	DoD-ELAP,ADEC,CALAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,CALAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,WADOE
2-Hexanone	DoD-ELAP,CALAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

1,3-Dichloropropane	DoD-ELAP,ADEC,CALAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,CALAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,CALAP,WADOE
1,2-Dibromoethane	DoD-ELAP,CALAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,CALAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,CALAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,CALAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,CALAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Styrene	DoD-ELAP,CALAP,WADOE
Bromoform	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,CALAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,CALAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,CALAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,CALAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,CALAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,CALAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,CALAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,CALAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,CALAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

1,3,5-Trimethylbenzene	DoD-ELAP,CALAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,CALAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,CALAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,CALAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
n-Butylbenzene	DoD-ELAP,CALAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,CALAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,CALAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,CALAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,CALAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,CALAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE
n-Hexane	WADOE
n-Hexane	WADOE
2-Pentanone	WADOE
2-Pentanone	WADOE

EPA 8260D-SIM in Water

Acrylonitrile	CALAP,WADOE
Acrylonitrile	NELAP,WADOE
Vinyl chloride	CALAP,WADOE
Vinyl chloride	NELAP,WADOE

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

1,1-Dichloroethene	CALAP,WADOE
1,1-Dichloroethene	NELAP,WADOE
cis-1,2-Dichloroethene	CALAP,WADOE
cis-1,2-Dichloroethene	NELAP,WADOE
trans-1,2-Dichloroethene	CALAP,WADOE
trans-1,2-Dichloroethene	NELAP,WADOE
Trichloroethene	CALAP,WADOE
Trichloroethene	NELAP,WADOE
Tetrachloroethene	CALAP,WADOE
Tetrachloroethene	NELAP,WADOE
1,1,2,2-Tetrachloroethane	NELAP,WADOE
1,1,2,2-Tetrachloroethane	CALAP,WADOE
1,2-Dichloroethane	CALAP,WADOE
1,2-Dichloroethane	NELAP,WADOE
Benzene	CALAP,WADOE
Benzene	NELAP,WADOE
EPA 9060A in Water	
Total Organic Carbon	DoD-ELAP,WADOE,NELAP
Total Organic Carbon	DoD-ELAP,WADOE
SM 2320 B-97 in Water	
Alkalinity, Bicarbonate	NELAP,WADOE,WA-DW,DoD-ELAP
Alkalinity, Bicarbonate	WADOE,WA-DW,DoD-ELAP
Alkalinity, Carbonate	WADOE,WA-DW,DoD-ELAP,NELAP
Alkalinity, Carbonate	WADOE,WA-DW,DoD-ELAP
Alkalinity, Hydroxide	WADOE,WA-DW,DoD-ELAP
Alkalinity, Hydroxide	WADOE,WA-DW,DoD-ELAP,NELAP
Alkalinity, Total	DoD-ELAP,WADOE,WA-DW,NELAP
Alkalinity, Total	DoD-ELAP,WADOE,WA-DW
SM 4500-H+ B-00 in Water	
pH	WADOE,NELAP,WA-DW
pH	WADOE,WA-DW
SM 4500-NH3 H-97 in Water	
Ammonia-N	WADOE,DoD-ELAP,NELAP
Ammonia-N	WADOE,DoD-ELAP
SM 9222B in Water	
Total Coliforms	WADOE
Total Coliforms	WADOE

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	01/31/2021
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	01/01/2021
WADOE	WA Dept of Ecology	C558	06/30/2020
WA-DW	Ecology - Drinking Water	C558	06/30/2020

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	02-Jul-2020 15:27

Notes and Definitions

*	Flagged value is not within established control limits.
B	This analyte was detected in the method blank.
D	The reported value is from a dilution
H	Hold time violation - Hold time was exceeded.
J	Estimated concentration value detected below the reporting limit.
L	Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to +/- RL instead of 20% RPD
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

05 October 2020

Doug Kunkel
Environmental Partners, Inc.
1180 NW Maple St., Suite 310
Issaquah, WA 98027

RE: Olalla Landfill

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

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

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

Associated Work Order(s)	Associated SDG ID(s)
20I0219	N/A

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

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

Analytical Resources, Inc.

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

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006

PJLA Testing
Accreditation # 66169

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 20I0219	Turn-around Requested: Standard	Page: 1 of 1	
ARI Client Company: TRC	Phone: (425) 395-0010	Date: 9/17/20	Ice Present? Yes
Client Contact: Doug Kunkel dkunkel@trccompanies.com		No. of Coolers: 2	Cooler Temps: 12.1, 10.8
Client Project Name: Olalla 382595			
Client Project #: 382595	Samplers: Wesley Weisberg		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: VOC's VC	Total Coliform	Geochem Parameters Nitrate/Nitrite	TOC	COD	Total Metals	Dissolved Metals	Notes/Comments
MW-1	9/17/20	0950	Water	11	X	X	X	X	X	X	X	X	
MW-3	9/17/20	1050			X	X	X	X	X	X	X	X	
MW-10		1205			X	X	X	X	X	X	X	X	
MW-6		1335			X	X	X	X	X	X	X	X	
MW-12		H00			X	X	X	X	X	X	X	X	
MW-8		1420			X	X	X	X	X	X	X	X	

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: Wesley Weisberg	Printed Name: Kenny Dang	Printed Name:	Printed Name:
	Company: TRC	Company: ART	Company:	Company:
	Date & Time: 9/17/20 1630	Date & Time: 9/17/20 1630	Date & Time:	Date & Time:

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: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	20I0219-01	Water	17-Sep-2020 09:50	17-Sep-2020 16:30
MW-3	20I0219-02	Water	17-Sep-2020 10:50	17-Sep-2020 16:30
MW-10	20I0219-03	Water	17-Sep-2020 12:05	17-Sep-2020 16:30
MW-6	20I0219-04	Water	17-Sep-2020 13:35	17-Sep-2020 16:30
MW-12	20I0219-05	Water	17-Sep-2020 14:00	17-Sep-2020 16:30
MW-8	20I0219-06	Water	17-Sep-2020 14:20	17-Sep-2020 16:30
MW-1	20I0219-07	Water	17-Sep-2020 09:50	17-Sep-2020 16:30
MW-3	20I0219-08	Water	17-Sep-2020 10:50	17-Sep-2020 16:30
MW-10	20I0219-09	Water	17-Sep-2020 12:05	17-Sep-2020 16:30
MW-6	20I0219-10	Water	17-Sep-2020 13:35	17-Sep-2020 16:30
MW-12	20I0219-11	Water	17-Sep-2020 14:00	17-Sep-2020 16:30
MW-8	20I0219-12	Water	17-Sep-2020 14:20	17-Sep-2020 16:30
Trip Blanks	20I0219-13	Water	17-Sep-2020 14:20	17-Sep-2020 16:30

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Work Order Case Narrative

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements with the exception of all associated "Q" flagged analytes which are out of control low in the CCAL and
chloromethane is out of control high. All associated samples that contain analyte have been flagged with a "Q" qualifer.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits with the exception of analytes flagged
on the associated forms.

Volatiles - EPA Method 8260D-SIM (Selected Ion Monitoring)

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Total and Dissolved Metals - EPA Method 200.8 and 6010C

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times with the exception of pH which was sent to the lab outside of the holding time.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The reference material (SRM) percent recoveries were within control limits.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

WORK ORDER

20I0219

Client: Environmental Partners, Inc. **Project Manager:** Kelly Bottem

Project: Olalla Landfill **Project Number:** [none]

Preservation Confirmation

Container ID	Container Type	pH	
20I0219-01 A	Corning Plastic, 125 mL, Na2S2O3		
20I0219-01 B	Large OJ, 1000 mL		
20I0219-01 C	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
20I0219-01 D	Small OJ, 500 mL		
20I0219-01 E	Glass NM, Amber, 250 mL, 9N H2SO4	<2	Pass
20I0219-01 F	VOA Vial, Clear, 40 mL, HCL		
20I0219-01 G	VOA Vial, Clear, 40 mL, HCL		
20I0219-01 H	VOA Vial, Clear, 40 mL, HCL		
20I0219-01 I	VOA Vial, Clear, 40 mL, HCL		
20I0219-01 J	VOA Vial, Clear, 40 mL, HCL		
20I0219-02 A	Corning Plastic, 125 mL, Na2S2O3		
20I0219-02 B	Large OJ, 1000 mL		
20I0219-02 C	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
20I0219-02 D	Small OJ, 500 mL		
20I0219-02 E	Glass NM, Amber, 250 mL, 9N H2SO4	<2	Pass
20I0219-02 F	VOA Vial, Clear, 40 mL, HCL		
20I0219-02 G	VOA Vial, Clear, 40 mL, HCL		
20I0219-02 H	VOA Vial, Clear, 40 mL, HCL		
20I0219-02 I	VOA Vial, Clear, 40 mL, HCL		
20I0219-02 J	VOA Vial, Clear, 40 mL, HCL		
20I0219-03 A	Corning Plastic, 125 mL, Na2S2O3		
20I0219-03 B	Large OJ, 1000 mL		
20I0219-03 C	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
20I0219-03 D	Small OJ, 500 mL		
20I0219-03 E	Glass NM, Amber, 250 mL, 9N H2SO4	<2	Pass
20I0219-03 F	VOA Vial, Clear, 40 mL, HCL		
20I0219-03 G	VOA Vial, Clear, 40 mL, HCL		
20I0219-03 H	VOA Vial, Clear, 40 mL, HCL		
20I0219-03 I	VOA Vial, Clear, 40 mL, HCL		
20I0219-03 J	VOA Vial, Clear, 40 mL, HCL		
20I0219-04 A	Corning Plastic, 125 mL, Na2S2O3		
20I0219-04 B	Large OJ, 1000 mL		
20I0219-04 C	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
20I0219-04 D	Small OJ, 500 mL		
20I0219-04 E	Glass NM, Amber, 250 mL, 9N H2SO4	<2	Pass

Reviewed By

Date

WORK ORDER

20I0219

Client: Environmental Partners, Inc. **Project Manager:** Kelly Bottem

Project: Olalla Landfill **Project Number:** [none]

20I0219-04 F	VOA Vial, Clear, 40 mL, HCL	
20I0219-04 G	VOA Vial, Clear, 40 mL, HCL	
20I0219-04 H	VOA Vial, Clear, 40 mL, HCL	
20I0219-04 I	VOA Vial, Clear, 40 mL, HCL	
20I0219-04 J	VOA Vial, Clear, 40 mL, HCL	
20I0219-05 A	Corning Plastic, 125 mL, Na2S2O3	
20I0219-05 B	Large OJ, 1000 mL	
20I0219-05 C	HDPE NM, 500 mL, 1:1 HNO3	<2 Pass
20I0219-05 D	Small OJ, 500 mL	
20I0219-05 E	Glass NM, Amber, 250 mL, 9N H2SO4	
20I0219-05 F	VOA Vial, Clear, 40 mL, HCL	
20I0219-05 G	VOA Vial, Clear, 40 mL, HCL	
20I0219-05 H	VOA Vial, Clear, 40 mL, HCL	
20I0219-05 I	VOA Vial, Clear, 40 mL, HCL	
20I0219-05 J	VOA Vial, Clear, 40 mL, HCL	
20I0219-06 A	Corning Plastic, 125 mL, Na2S2O3	
20I0219-06 B	Large OJ, 1000 mL	
20I0219-06 C	HDPE NM, 500 mL, 1:1 HNO3	<2 Pass
20I0219-06 D	Small OJ, 500 mL	
20I0219-06 E	Glass NM, Amber, 250 mL, 9N H2SO4	
20I0219-06 F	VOA Vial, Clear, 40 mL, HCL	
20I0219-06 G	VOA Vial, Clear, 40 mL, HCL	
20I0219-06 H	VOA Vial, Clear, 40 mL, HCL	
20I0219-06 I	VOA Vial, Clear, 40 mL, HCL	
20I0219-06 J	VOA Vial, Clear, 40 mL, HCL	
20I0219-07 A	HDPE NM, 500 mL	>2 Failed
20I0219-08 A	HDPE NM, 500 mL	>2 Failed
20I0219-09 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2 Pass
20I0219-10 A	HDPE NM, 500 mL	>2 Failed
20I0219-11 A	HDPE NM, 500 mL	>2 Failed
20I0219-12 A	HDPE NM, 500 mL	>2 Failed
20I0219-13 A	VOA Vial, Clear, 40 mL, HCL	
20I0219-13 B	VOA Vial, Clear, 40 mL, HCL	
20I0219-13 C	VOA Vial, Clear, 40 mL, HCL	

KD
Preservation Confirmed By

9/17/20
Date

Reviewed By

Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: TRC

Project Name: Olalla 382595

COC No(s): (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other:

Assigned ARI Job No: 20I0219

Tracking No: (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the 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 1630 12.1 10.8 ____ ____ ____ ____

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: DOO 5206

Cooler Accepted by: KD Date: 9/17/20 Time: 1630

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)

How were bottles sealed in plastic bags? Individually Grouped (Not)

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? KD (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 9/16/20

Were the sample(s) split by ARI? (NA) YES Date/Time: ____ Equipment: ____ Split by: ____

Samples Logged by: KD Date: 9/17/20 Time: 1712 Labels checked by: KD

*** 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:

Trip Blanks were not listed on COC

By: KD Date: 6/17/20

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Temperature Compliance Form

ARI Work Order: 20I0219

Cooler#: 1 **Temperature(°C):** 12.1

Sample ID	Bottle Count	Bottle Type
Samples received above 6°C		

Cooler#: 2 **Temperature(°C):** 10.6

Sample ID	Bottle Count	Bottle Type
Samples received above 6°C		

Cooler#: _____ **Temperature(°C):** _____

Sample ID	Bottle Count	Bottle Type

Cooler#: _____ **Temperature(°C):** _____

Sample ID	Bottle Count	Bottle Type

Completed by: KD Date: 9/11/20 Time: 1630

WORK ORDER

20I0219

Client: Environmental Partners, Inc. **Project Manager:** Kelly Bottem

Project: Olalla Landfill **Project Number:** [none]

Preservation Confirmation

Container ID	Container Type	pH	
20I0219-01 A	Corning Plastic, 125 mL, Na2S2O3		
20I0219-01 B	Large OJ, 1000 mL		
20I0219-01 C	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
20I0219-01 D	Small OJ, 500 mL		
20I0219-01 E	Glass NM, Amber, 250 mL, 9N H2SO4	<2	Pass
20I0219-01 F	VOA Vial, Clear, 40 mL, HCL		
20I0219-01 G	VOA Vial, Clear, 40 mL, HCL		
20I0219-01 H	VOA Vial, Clear, 40 mL, HCL		
20I0219-01 I	VOA Vial, Clear, 40 mL, HCL		
20I0219-01 J	VOA Vial, Clear, 40 mL, HCL		
20I0219-02 A	Corning Plastic, 125 mL, Na2S2O3		
20I0219-02 B	Large OJ, 1000 mL		
20I0219-02 C	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
20I0219-02 D	Small OJ, 500 mL		
20I0219-02 E	Glass NM, Amber, 250 mL, 9N H2SO4	<2	Pass
20I0219-02 F	VOA Vial, Clear, 40 mL, HCL		
20I0219-02 G	VOA Vial, Clear, 40 mL, HCL		
20I0219-02 H	VOA Vial, Clear, 40 mL, HCL		
20I0219-02 I	VOA Vial, Clear, 40 mL, HCL		
20I0219-02 J	VOA Vial, Clear, 40 mL, HCL		
20I0219-03 A	Corning Plastic, 125 mL, Na2S2O3		
20I0219-03 B	Large OJ, 1000 mL		
20I0219-03 C	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
20I0219-03 D	Small OJ, 500 mL		
20I0219-03 E	Glass NM, Amber, 250 mL, 9N H2SO4	<2	Pass
20I0219-03 F	VOA Vial, Clear, 40 mL, HCL		
20I0219-03 G	VOA Vial, Clear, 40 mL, HCL		
20I0219-03 H	VOA Vial, Clear, 40 mL, HCL		
20I0219-03 I	VOA Vial, Clear, 40 mL, HCL		
20I0219-03 J	VOA Vial, Clear, 40 mL, HCL		
20I0219-04 A	Corning Plastic, 125 mL, Na2S2O3		
20I0219-04 B	Large OJ, 1000 mL		
20I0219-04 C	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
20I0219-04 D	Small OJ, 500 mL		
20I0219-04 E	Glass NM, Amber, 250 mL, 9N H2SO4	<2	Pass

Reviewed By

Date

WORK ORDER

20I0219

Client: Environmental Partners, Inc.	Project Manager: Kelly Bottem
Project: Olalla Landfill	Project Number: [none]

20I0219-04 F	VOA Vial, Clear, 40 mL, HCL			
20I0219-04 G	VOA Vial, Clear, 40 mL, HCL			
20I0219-04 H	VOA Vial, Clear, 40 mL, HCL			
20I0219-04 I	VOA Vial, Clear, 40 mL, HCL			
20I0219-04 J	VOA Vial, Clear, 40 mL, HCL			
20I0219-05 A	Corning Plastic, 125 mL, Na2S2O3			
20I0219-05 B	Large OJ, 1000 mL			
20I0219-05 C	HDPE NM, 500 mL, 1:1 HNO3	<2 Pass,		
20I0219-05 D	Small OJ, 500 mL			
20I0219-05 E	Glass NM, Amber, 250 mL, 9N H2SO4			
20I0219-05 F	VOA Vial, Clear, 40 mL, HCL			
20I0219-05 G	VOA Vial, Clear, 40 mL, HCL			
20I0219-05 H	VOA Vial, Clear, 40 mL, HCL			
20I0219-05 I	VOA Vial, Clear, 40 mL, HCL			
20I0219-05 J	VOA Vial, Clear, 40 mL, HCL			
20I0219-06 A	Corning Plastic, 125 mL, Na2S2O3			
20I0219-06 B	Large OJ, 1000 mL			
20I0219-06 C	HDPE NM, 500 mL, 1:1 HNO3	<2 Pass		
20I0219-06 D	Small OJ, 500 mL			
20I0219-06 E	Glass NM, Amber, 250 mL, 9N H2SO4			
20I0219-06 F	VOA Vial, Clear, 40 mL, HCL			
20I0219-06 G	VOA Vial, Clear, 40 mL, HCL			
20I0219-06 H	VOA Vial, Clear, 40 mL, HCL			
20I0219-06 I	VOA Vial, Clear, 40 mL, HCL			
20I0219-06 J	VOA Vial, Clear, 40 mL, HCL			
20I0219-07 A	HDPE NM, 500 mL	>2 Failed	(1)	
20I0219-08 A	HDPE NM, 500 mL	>2 Failed	(1)	
20I0219-09 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2 Pass	(1)	(2)
20I0219-10 A	HDPE NM, 500 mL	>2 Failed	(1)	
20I0219-11 A	HDPE NM, 500 mL	>2 Failed.	(1)	
20I0219-12 A	HDPE NM, 500 mL	>2 Failed.	(1)	
20I0219-13 A	VOA Vial, Clear, 40 mL, HCL			
20I0219-13 B	VOA Vial, Clear, 40 mL, HCL			
20I0219-13 C	VOA Vial, Clear, 40 mL, HCL			

KP
Preservation Confirmed By

9/17/20
Date

(1) filtered with 0.45um and preserved to pH<2.0 with 0.75mL of conc. HNO_3 (I6426) 9/18/20 BC

(2) Used unpreserved sample, conventionals. 9/18/20 BC

Reviewed By

Date

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-1

20I0219-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 09:50
Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 14:36

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0219-01 H
Preparation Batch: BII0496 — Sample Size: 10 mL
Prepared: 09/18/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-1

20I0219-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 09:50
Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 14:36

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-1

20I0219-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 09:50
Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 14:36

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*82.2*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*91.8*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*93.3*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*106*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-1

20I0219-01 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM — Sampled: 09/17/2020 09:50
Instrument: NT16 Analyst: PB — Analyzed: 09/22/2020 14:18

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0219-01 F
Preparation Batch: BII0596 — Sample Size: 10 mL
Prepared: 09/22/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*96.1*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-1

20I0219-01 (Water)

Metals and Metallic Compounds

Method: EPA 6010C — Sampled: 09/17/2020 09:50
Instrument: ICP2 Analyst: SKM — Analyzed: 09/24/2020 15:03

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 20I0219-01 C 01
Preparation Batch: BII0615 — Sample Size: 25 mL
Prepared: 09/23/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	11.4	mg/L	
Potassium	7440-09-7	1	0.500	0.651	mg/L	
Sodium	7440-23-5	1	0.500	4.86	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-1

20I0219-01 (Water)

Wet Chemistry

Method: EPA 325.2 — Sampled: 09/17/2020 09:50
Instrument: LACHAT2 Analyst: WCW — Analyzed: 09/22/2020 16:13

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-01 D
Preparation Batch: BII0549 — Sample Size: 10 mL
Prepared: 09/21/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	4.91	mg/L	

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1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-1

20I0219-01 (Water)

Wet Chemistry

Method: EPA 353.2 — Sampled: 09/17/2020 09:50
Instrument: [CALC] Analyst: LRB — Analyzed: 10/01/2020 13:34

Sample Preparation: Preparation Method: [CALC]; Preparation Batch: [CALC]; Prepared: 10/01/2020; Final Volume: 1 — Extract ID: 20I0219-01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	0.0953	mg/L	

Instrument: LACHAT2 Analyst: LRB — Analyzed: 09/18/2020 15:27

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BII0498; Prepared: 09/18/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20I0219-01 D

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	ND	mg/L	U

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BII0906; Prepared: 10/01/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20I0219-01 E

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	0.095	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-1

20I0219-01 (Water)

Wet Chemistry

Method: EPA 410.4 — Sampled: 09/17/2020 09:50
Instrument: UV1800-1 Analyst: WMT — Analyzed: 09/30/2020 19:19

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-01 E
Preparation Batch: BII0862 — Sample Size: 2 mL
Prepared: 09/29/2020 — Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	ND	mg/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-1

20I0219-01 (Water)

Wet Chemistry

Method: EPA 9060A — Sampled: 09/17/2020 09:50
Instrument: TOC-LCSH Analyst: WCW — Analyzed: 10/03/2020 02:27

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-01 E
Preparation Batch: BIJ0069 — Sample Size: 20 mL
Prepared: 10/02/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	ND	mg/L	U

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1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-1

20I0219-01 (Water)

Wet Chemistry

Method: SM 2320 B-97 — Sampled: 09/17/2020 09:50
Instrument: Accumet AB150 Analyst: UW — Analyzed: 09/22/2020 10:44

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-01 D
Preparation Batch: BII0579 — Sample Size: 50 mL
Prepared: 09/22/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	52.2	mg/L CaCO3	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	52.2	mg/L CaCO3	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-1

20I0219-01 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00 — Sampled: 09/17/2020 09:50
Instrument: Accumet AB150 Analyst: UW — Analyzed: 09/18/2020 10:35

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-01 B
Preparation Batch: BII0487 — Sample Size: 50 mL
Prepared: 09/18/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	6.26	pH Units	H

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-1

20I0219-01 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 09/17/2020 09:50
Instrument: LACHAT2 Analyst: WCW — Analyzed: 09/29/2020 12:54

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-01 E
Preparation Batch: BII0785 — Sample Size: 10 mL
Prepared: 09/28/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	ND	mg/L	U

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1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-1

20I0219-01 (Water)

Microbiology

Method: SM 9222B — Sampled: 09/17/2020 09:50
Instrument: N/A Analyst: UW — Analyzed: 09/18/2020 16:55

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-01
Preparation Batch: BII0476 — Sample Size: 100 mL
Prepared: 09/17/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-1

20I0219-01RE1 (Water)

Wet Chemistry

Method: EPA 375.2 — Sampled: 09/17/2020 09:50
Instrument: LACHAT1 Analyst: BF — Analyzed: 09/24/2020 15:59

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-01RE1 D
Preparation Batch: BII0636 — Sample Size: 10 mL
Prepared: 09/23/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	2.00	2.00	4.04	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-3

20I0219-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 10:50
Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 15:02

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0219-02 F
Preparation Batch: BII0496 — Sample Size: 10 mL
Prepared: 09/18/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-3

20I0219-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 10:50
Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 15:02

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-3

20I0219-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 10:50
Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 15:02

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*88.8*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.6*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*94.7*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*104*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-3

20I0219-02 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM — Sampled: 09/17/2020 10:50
Instrument: NT16 Analyst: PB — Analyzed: 09/22/2020 14:38

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0219-02 G
Preparation Batch: BII0596 — Sample Size: 10 mL
Prepared: 09/22/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*101*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-3

20I0219-02 (Water)

Metals and Metallic Compounds

Method: EPA 6010C — Sampled: 09/17/2020 10:50
Instrument: ICP2 Analyst: SKM — Analyzed: 09/24/2020 19:57

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 20I0219-02 C 01
Preparation Batch: BII0615 — Sample Size: 25 mL
Prepared: 09/23/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	42.4	mg/L	
Potassium	7440-09-7	1	0.500	0.818	mg/L	
Sodium	7440-23-5	1	0.500	8.53	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-3

20I0219-02 (Water)

Wet Chemistry

Method: EPA 325.2 — Sampled: 09/17/2020 10:50
Instrument: LACHAT2 Analyst: WCW — Analyzed: 09/22/2020 16:17

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-02 D
Preparation Batch: BII0549 — Sample Size: 10 mL
Prepared: 09/21/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	2.98	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-3

20I0219-02 (Water)

Wet Chemistry

Method: EPA 353.2 — Sampled: 09/17/2020 10:50
Instrument: [CALC] Analyst: LRB — Analyzed: 10/01/2020 13:39

Sample Preparation: Preparation Method: [CALC]; Preparation Batch: [CALC]; Prepared: 10/01/2020; Final Volume: 1 — Extract ID: 20I0219-02

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	0.0537	mg/L	

Instrument: LACHAT2 Analyst: LRB — Analyzed: 09/18/2020 15:31

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BII0498; Prepared: 09/18/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20I0219-02 D

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	ND	mg/L	U

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BII0906; Prepared: 10/01/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20I0219-02 E

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	0.054	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-3

20I0219-02 (Water)

Wet Chemistry

Method: EPA 375.2 — Sampled: 09/17/2020 10:50
Instrument: LACHAT1 Analyst: BF — Analyzed: 09/24/2020 16:11

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-02 D
Preparation Batch: BII0636 — Sample Size: 10 mL
Prepared: 09/23/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	2.00	2.00	15.2	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-3

20I0219-02 (Water)

Wet Chemistry

Method: EPA 410.4 — Sampled: 09/17/2020 10:50
Instrument: UV1800-1 Analyst: WMT — Analyzed: 09/30/2020 19:19

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-02 E
Preparation Batch: BII0862 — Sample Size: 2 mL
Prepared: 09/29/2020 — Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	ND	mg/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-3

20I0219-02 (Water)

Wet Chemistry

Method: EPA 9060A — Sampled: 09/17/2020 10:50
Instrument: TOC-LCSH Analyst: WCW — Analyzed: 10/03/2020 02:49

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-02 E
Preparation Batch: BIJ0069 — Sample Size: 20 mL
Prepared: 10/02/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	1.95	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-3

20I0219-02 (Water)

Wet Chemistry

Method: SM 2320 B-97 — Sampled: 09/17/2020 10:50
Instrument: Accumet AB150 Analyst: UW — Analyzed: 09/22/2020 10:44

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-02 D
Preparation Batch: BII0579 — Sample Size: 50 mL
Prepared: 09/22/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	178	mg/L CaCO3	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	178	mg/L CaCO3	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-3

20I0219-02 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00 — Sampled: 09/17/2020 10:50
Instrument: Accumet AB150 Analyst: UW — Analyzed: 09/18/2020 10:35

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-02 B
Preparation Batch: BII0487 — Sample Size: 50 mL
Prepared: 09/18/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	6.22	pH Units	H

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-3

20I0219-02 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 09/17/2020 10:50
Instrument: LACHAT2 Analyst: WCW — Analyzed: 09/29/2020 12:59

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-02 E
Preparation Batch: BII0785 — Sample Size: 10 mL
Prepared: 09/28/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	ND	mg/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-3

20I0219-02 (Water)

Microbiology

Method: SM 9222B — Sampled: 09/17/2020 10:50
Instrument: N/A Analyst: UW — Analyzed: 09/18/2020 16:55

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-02
Preparation Batch: BII0476 — Sample Size: 100 mL
Prepared: 09/17/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-10

20I0219-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 12:05
Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 15:27

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0219-03 F
Preparation Batch: BII0496 — Sample Size: 10 mL
Prepared: 09/18/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-10

20I0219-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 12:05
Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 15:27

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-10

20I0219-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 12:05
Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 15:27

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*87.8*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*98.1*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*92.5*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*103*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-10

20I0219-03 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM — Sampled: 09/17/2020 12:05
Instrument: NT16 Analyst: PB — Analyzed: 09/22/2020 14:58

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0219-03 J
Preparation Batch: BII0596 — Sample Size: 10 mL
Prepared: 09/22/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*100*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-10

20I0219-03 (Water)

Metals and Metallic Compounds

Method: EPA 6010C — Sampled: 09/17/2020 12:05
Instrument: ICP2 Analyst: SKM — Analyzed: 09/24/2020 20:01

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 20I0219-03 C 01
Preparation Batch: BII0615 — Sample Size: 25 mL
Prepared: 09/23/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	39.2	mg/L	
Potassium	7440-09-7	1	0.500	1.28	mg/L	
Sodium	7440-23-5	1	0.500	17.0	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-10

20I0219-03 (Water)

Wet Chemistry

Method: EPA 325.2 — Sampled: 09/17/2020 12:05
Instrument: LACHAT2 Analyst: WCW — Analyzed: 09/22/2020 16:19

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-03 D
Preparation Batch: BII0549 — Sample Size: 10 mL
Prepared: 09/21/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	6.43	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-10

20I0219-03 (Water)

Wet Chemistry

Method: EPA 353.2 — Sampled: 09/17/2020 12:05
Instrument: [CALC] Analyst: LRB — Analyzed: 10/01/2020 13:40

Sample Preparation: Preparation Method: [CALC]; Preparation Batch: [CALC]; Prepared: 10/01/2020; Final Volume: 1 — Extract ID: 20I0219-03

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	ND	mg/L	U

Instrument: LACHAT2 Analyst: LRB — Analyzed: 09/18/2020 15:33

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BII0498; Prepared: 09/18/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20I0219-03 D

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	ND	mg/L	U

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BII0906; Prepared: 10/01/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20I0219-03 E

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	ND	mg/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-10

20I0219-03 (Water)

Wet Chemistry

Method: EPA 375.2 — Sampled: 09/17/2020 12:05
Instrument: LACHAT1 Analyst: BF — Analyzed: 09/24/2020 16:12

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-03 D
Preparation Batch: BII0636 — Sample Size: 10 mL
Prepared: 09/23/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	2.00	2.00	10.1	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-10

20I0219-03 (Water)

Wet Chemistry

Method: EPA 410.4 — Sampled: 09/17/2020 12:05

Instrument: UV1800-1 Analyst: WMT — Analyzed: 09/30/2020 19:20

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-03 E

Preparation Batch: BII0862 — Sample Size: 2 mL

Prepared: 09/29/2020 — Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	ND	mg/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-10

20I0219-03 (Water)

Wet Chemistry

Method: EPA 9060A — Sampled: 09/17/2020 12:05
Instrument: TOC-LCSH Analyst: WCW — Analyzed: 10/03/2020 04:45

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-03 E
Preparation Batch: BIJ0069 — Sample Size: 20 mL
Prepared: 10/02/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	2.59	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-10

20I0219-03 (Water)

Wet Chemistry

Method: SM 2320 B-97 — Sampled: 09/17/2020 12:05
Instrument: Accumet AB150 Analyst: UW — Analyzed: 09/22/2020 10:44

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-03 D
Preparation Batch: BII0579 — Sample Size: 50 mL
Prepared: 09/22/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	211	mg/L CaCO3	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	211	mg/L CaCO3	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-10

20I0219-03 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00 — Sampled: 09/17/2020 12:05
Instrument: Accumet AB150 Analyst: UW — Analyzed: 09/18/2020 10:35

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-03 B
Preparation Batch: BII0487 — Sample Size: 50 mL
Prepared: 09/18/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	6.68	pH Units	H

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-10

20I0219-03 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 09/17/2020 12:05
Instrument: LACHAT2 Analyst: WCW — Analyzed: 09/29/2020 13:00

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-03 E
Preparation Batch: BII0785 — Sample Size: 10 mL
Prepared: 09/28/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	0.103	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-10

20I0219-03 (Water)

Microbiology

Method: SM 9222B — Sampled: 09/17/2020 12:05
Instrument: N/A Analyst: UW — Analyzed: 09/18/2020 16:55

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-03
Preparation Batch: BII0476 — Sample Size: 100 mL
Prepared: 09/17/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-6

20I0219-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 13:35
Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 15:52

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0219-04 F
Preparation Batch: BII0496 — Sample Size: 10 mL
Prepared: 09/18/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-6

20I0219-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 13:35
Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 15:52

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	2.29	ug/L	
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-6

20I0219-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 13:35
Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 15:52

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*90.1*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*98.2*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*103*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*109*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
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Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-6

20I0219-04 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM — Sampled: 09/17/2020 13:35
Instrument: NT16 Analyst: PB — Analyzed: 09/22/2020 15:18

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0219-04 I
Preparation Batch: BII0596 — Sample Size: 10 mL
Prepared: 09/22/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*104*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-6

20I0219-04 (Water)

Metals and Metallic Compounds

Method: EPA 6010C — Sampled: 09/17/2020 13:35
Instrument: ICP2 Analyst: SKM — Analyzed: 09/28/2020 15:21

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 20I0219-04 C 01
Preparation Batch: BII0615 — Sample Size: 25 mL
Prepared: 09/23/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	41.5	mg/L	
Potassium	7440-09-7	1	0.500	1.85	mg/L	
Sodium	7440-23-5	1	0.500	12.5	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-6

20I0219-04 (Water)

Wet Chemistry

Method: EPA 325.2 — Sampled: 09/17/2020 13:35
Instrument: LACHAT2 Analyst: WCW — Analyzed: 09/22/2020 16:20

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-04 D
Preparation Batch: BII0549 — Sample Size: 10 mL
Prepared: 09/21/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	1.92	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-6

20I0219-04 (Water)

Wet Chemistry

Method: EPA 353.2 — Sampled: 09/17/2020 13:35
Instrument: [CALC] Analyst: LRB — Analyzed: 10/01/2020 13:47

Sample Preparation: Preparation Method: [CALC]; Preparation Batch: [CALC]; Prepared: 10/01/2020; Final Volume: 1 — Extract ID: 20I0219-04

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	ND	mg/L	U

Instrument: LACHAT2 Analyst: LRB — Analyzed: 09/18/2020 15:34

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BII0498; Prepared: 09/18/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20I0219-04 D

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	ND	mg/L	U

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BII0906; Prepared: 10/01/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20I0219-04 E

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	ND	mg/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-6

20I0219-04 (Water)

Wet Chemistry

Method: EPA 375.2 — Sampled: 09/17/2020 13:35
Instrument: LACHAT1 Analyst: BF — Analyzed: 09/24/2020 16:13

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-04 D
Preparation Batch: BII0636 — Sample Size: 10 mL
Prepared: 09/23/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	2.00	2.00	9.40	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-6

20I0219-04 (Water)

Wet Chemistry

Method: EPA 410.4 — Sampled: 09/17/2020 13:35
Instrument: UV1800-1 Analyst: WMT — Analyzed: 09/30/2020 19:22

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-04 E
Preparation Batch: BII0862 — Sample Size: 2 mL
Prepared: 09/29/2020 — Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	ND	mg/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-6

20I0219-04 (Water)

Wet Chemistry

Method: EPA 9060A — Sampled: 09/17/2020 13:35
Instrument: TOC-LCSH Analyst: WCW — Analyzed: 10/03/2020 05:03

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-04 E
Preparation Batch: BIJ0069 — Sample Size: 20 mL
Prepared: 10/02/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	1.89	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-6

20I0219-04 (Water)

Wet Chemistry

Method: SM 2320 B-97 — Sampled: 09/17/2020 13:35
Instrument: Accumet AB150 Analyst: UW — Analyzed: 09/22/2020 10:44

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-04 D
Preparation Batch: BII0579 — Sample Size: 50 mL
Prepared: 09/22/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	205	mg/L CaCO3	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	205	mg/L CaCO3	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-6

20I0219-04 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00 — Sampled: 09/17/2020 13:35
Instrument: Accumet AB150 Analyst: UW — Analyzed: 09/18/2020 10:35

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-04 B
Preparation Batch: BII0487 — Sample Size: 50 mL
Prepared: 09/18/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	6.51	pH Units	H

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-6

20I0219-04 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 09/17/2020 13:35
Instrument: LACHAT2 Analyst: WCW — Analyzed: 09/29/2020 13:01

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-04 E
Preparation Batch: BII0785 — Sample Size: 10 mL
Prepared: 09/28/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	ND	mg/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-6

20I0219-04 (Water)

Microbiology

Method: SM 9222B — Sampled: 09/17/2020 13:35
Instrument: N/A Analyst: UW — Analyzed: 09/18/2020 16:55

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-04
Preparation Batch: BII0476 — Sample Size: 100 mL
Prepared: 09/17/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-12

20I0219-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 14:00
Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 16:18

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0219-05 G
Preparation Batch: BII0496 — Sample Size: 10 mL
Prepared: 09/18/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-12

20I0219-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 14:00
Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 16:18

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-12

20I0219-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 14:00
Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 16:18

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*82.7*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*96.3*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*97.7*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*103*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-12

20I0219-05 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM — Sampled: 09/17/2020 14:00
Instrument: NT16 Analyst: PB — Analyzed: 09/22/2020 15:39

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0219-05 H
Preparation Batch: BII0596 — Sample Size: 10 mL
Prepared: 09/22/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*103*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-12

20I0219-05 (Water)

Metals and Metallic Compounds

Method: EPA 6010C — Sampled: 09/17/2020 14:00
Instrument: ICP2 Analyst: SKM — Analyzed: 09/24/2020 20:11

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 20I0219-05 C 01
Preparation Batch: BII0615 — Sample Size: 25 mL
Prepared: 09/23/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	15.1	mg/L	
Potassium	7440-09-7	1	0.500	0.976	mg/L	
Sodium	7440-23-5	1	0.500	7.30	mg/L	
Sodium	7440-23-5	1	50.0	ND	mg/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-12

20I0219-05 (Water)

Wet Chemistry

Method: EPA 325.2 — Sampled: 09/17/2020 14:00
Instrument: LACHAT2 Analyst: WCW — Analyzed: 09/22/2020 16:29

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-05 D
Preparation Batch: BII0549 — Sample Size: 10 mL
Prepared: 09/21/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	2.25	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-12

20I0219-05 (Water)

Wet Chemistry

Method: EPA 353.2 — Sampled: 09/17/2020 14:00
Instrument: [CALC] Analyst: LRB — Analyzed: 10/01/2020 13:48

Sample Preparation: Preparation Method: [CALC]; Preparation Batch: [CALC]; Prepared: 10/01/2020; Final Volume: 1 — Extract ID: 20I0219-05

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	0.0219	mg/L	

Instrument: LACHAT2 Analyst: LRB — Analyzed: 09/18/2020 15:40

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BII0498; Prepared: 09/18/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20I0219-05 D

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	ND	mg/L	U

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BII0906; Prepared: 10/01/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20I0219-05 E

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	0.022	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-12

20I0219-05 (Water)

Wet Chemistry

Method: EPA 375.2 — Sampled: 09/17/2020 14:00

Instrument: LACHAT1 Analyst: BF — Analyzed: 09/24/2020 16:14

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-05 D

Preparation Batch: BII0636 — Sample Size: 10 mL

Prepared: 09/23/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	2.00	2.00	3.74	mg/L	

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1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-12

20I0219-05 (Water)

Wet Chemistry

Method: EPA 410.4 — Sampled: 09/17/2020 14:00

Instrument: UV1800-1 Analyst: WMT — Analyzed: 09/30/2020 19:23

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-05 E

Preparation Batch: BII0862 — Sample Size: 2 mL

Prepared: 09/29/2020 — Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	ND	mg/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-12

20I0219-05 (Water)

Wet Chemistry

Method: EPA 9060A — Sampled: 09/17/2020 14:00
Instrument: TOC-LCSH Analyst: WCW — Analyzed: 10/03/2020 05:21

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-05 E
Preparation Batch: BIJ0069 — Sample Size: 20 mL
Prepared: 10/02/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	0.53	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-12

20I0219-05 (Water)

Wet Chemistry

Method: SM 2320 B-97 — Sampled: 09/17/2020 14:00
Instrument: Accumet AB150 Analyst: UW — Analyzed: 09/22/2020 10:44

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-05 D
Preparation Batch: BII0579 — Sample Size: 50 mL
Prepared: 09/22/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	83.7	mg/L CaCO3	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	83.7	mg/L CaCO3	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-12

20I0219-05 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00 — Sampled: 09/17/2020 14:00

Instrument: Accumet AB150 Analyst: UW — Analyzed: 09/18/2020 10:35

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-05 B

Preparation Batch: BII0487 — Sample Size: 50 mL

Prepared: 09/18/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	6.59	pH Units	H

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-12

20I0219-05 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 09/17/2020 14:00

Instrument: LACHAT2 Analyst: WCW — Analyzed: 09/29/2020 13:03

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-05 E

Preparation Batch: BII0785 — Sample Size: 10 mL

Prepared: 09/28/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	ND	mg/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-12

20I0219-05 (Water)

Microbiology

Method: SM 9222B — Sampled: 09/17/2020 14:00
Instrument: N/A Analyst: UW — Analyzed: 09/18/2020 16:55

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-05
Preparation Batch: BII0476 — Sample Size: 100 mL
Prepared: 09/17/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-8

20I0219-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 14:20
Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 16:43

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0219-06 G
Preparation Batch: BII0496 — Sample Size: 10 mL
Prepared: 09/18/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-8

20I0219-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 14:20
Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 16:43

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-8

20I0219-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 14:20
Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 16:43

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*89.6*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*98.5*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*94.7*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*100*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-8

20I0219-06 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM — Sampled: 09/17/2020 14:20
Instrument: NT16 Analyst: PB — Analyzed: 09/22/2020 15:59

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0219-06 H
Preparation Batch: BII0596 — Sample Size: 10 mL
Prepared: 09/22/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*105*	*%*	

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1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-8

20I0219-06 (Water)

Metals and Metallic Compounds

Method: EPA 6010C — Sampled: 09/17/2020 14:20
Instrument: ICP2 Analyst: SKM — Analyzed: 09/28/2020 15:26

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 20I0219-06 C 01
Preparation Batch: BII0615 — Sample Size: 25 mL
Prepared: 09/23/2020 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	16.1	mg/L	
Potassium	7440-09-7	1	0.500	0.992	mg/L	
Sodium	7440-23-5	1	0.500	7.49	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-8

20I0219-06 (Water)

Wet Chemistry

Method: EPA 325.2 — Sampled: 09/17/2020 14:20
Instrument: LACHAT2 Analyst: WCW — Analyzed: 09/22/2020 16:30

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-06 D
Preparation Batch: BII0549 — Sample Size: 10 mL
Prepared: 09/21/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	2.32	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-8

20I0219-06 (Water)

Wet Chemistry

Method: EPA 353.2 — Sampled: 09/17/2020 14:20
Instrument: [CALC] Analyst: LRB — Analyzed: 10/01/2020 13:49

Sample Preparation: Preparation Method: [CALC]; Preparation Batch: [CALC]; Prepared: 10/01/2020; Final Volume: 1 — Extract ID: 20I0219-06

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	0.0375	mg/L	

Instrument: LACHAT2 Analyst: LRB — Analyzed: 09/18/2020 15:41

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BII0498; Prepared: 09/18/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20I0219-06 D

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	ND	mg/L	U

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BII0906; Prepared: 10/01/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20I0219-06 E

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	0.038	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-8

20I0219-06 (Water)

Wet Chemistry

Method: EPA 375.2 — Sampled: 09/17/2020 14:20
Instrument: LACHAT1 Analyst: BF — Analyzed: 09/24/2020 16:16

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-06 D
Preparation Batch: BII0636 — Sample Size: 10 mL
Prepared: 09/23/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	2.00	2.00	3.40	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-8

20I0219-06 (Water)

Wet Chemistry

Method: EPA 410.4 — Sampled: 09/17/2020 14:20
Instrument: UV1800-1 Analyst: WMT — Analyzed: 09/30/2020 19:24

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-06 E
Preparation Batch: BII0862 — Sample Size: 2 mL
Prepared: 09/29/2020 — Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	ND	mg/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-8

20I0219-06 (Water)

Wet Chemistry

Method: EPA 9060A — Sampled: 09/17/2020 14:20
Instrument: TOC-LCSH Analyst: WCW — Analyzed: 10/03/2020 05:46

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-06 E
Preparation Batch: BIJ0069 — Sample Size: 20 mL
Prepared: 10/02/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	ND	mg/L	U

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1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
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MW-8

20I0219-06 (Water)

Wet Chemistry

Method: SM 2320 B-97 — Sampled: 09/17/2020 14:20
Instrument: Accumet AB150 Analyst: UW — Analyzed: 09/22/2020 10:44

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-06 D
Preparation Batch: BII0579 — Sample Size: 50 mL
Prepared: 09/22/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	80.7	mg/L CaCO3	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	80.7	mg/L CaCO3	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-8

20I0219-06 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00 — Sampled: 09/17/2020 14:20
Instrument: Accumet AB150 Analyst: UW — Analyzed: 09/18/2020 10:35

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-06 B
Preparation Batch: BII0487 — Sample Size: 50 mL
Prepared: 09/18/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	6.52	pH Units	H

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1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
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MW-8

20I0219-06 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 09/17/2020 14:20
Instrument: LACHAT2 Analyst: WCW — Analyzed: 09/29/2020 13:04

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-06 E
Preparation Batch: BII0785 — Sample Size: 10 mL
Prepared: 09/28/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	ND	mg/L	U

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MW-8

20I0219-06 (Water)

Microbiology

Method: SM 9222B — Sampled: 09/17/2020 14:20
Instrument: N/A Analyst: UW — Analyzed: 09/18/2020 16:55

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20I0219-06
Preparation Batch: BII0476 — Sample Size: 100 mL
Prepared: 09/17/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-1

20I0219-07 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 — Sampled: 09/17/2020 09:50
Instrument: ICPMS1 Analyst: MCB — Analyzed: 09/29/2020 20:31

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20I0219-07 A 02
Preparation Batch: BII0825 — Sample Size: 25 mL — Filtration Batch: BII0484
Prepared: 09/29/2020 — Final Volume: 25 mL — Filtration Date: 09/18/2020 08:45

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	1	20.0	ND	ug/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
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Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-1

20I0219-07 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 09/17/2020 09:50
Instrument: ICPMS1 Analyst: MCB — Analyzed: 09/29/2020 23:38

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x — Extract ID: 20I0219-07 A 03
Preparation Batch: BII0824 — Sample Size: 100 mL — Filtration Batch: BII0484
Prepared: 09/29/2020 — Final Volume: 20 mL — Filtration Date: 09/18/2020 08:45

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0400	0.0888	ug/L	

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20I0219-07 A 02
Preparation Batch: BII0825 — Sample Size: 25 mL — Filtration Batch: BII0484
Prepared: 09/29/2020 — Final Volume: 25 mL — Filtration Date: 09/18/2020 08:45

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	4.00	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-1

20I0219-07 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010C — Sampled: 09/17/2020 09:50
Instrument: ICP2 Analyst: TCH — Analyzed: 09/30/2020 15:45

Sample Preparation: Preparation Method: WMN (No Prep) — Extract ID: 20I0219-07 A 01
Preparation Batch: BII0900 — Sample Size: 25 mL — Filtration Batch: BII0484
Prepared: 09/30/2020 — Final Volume: 25 mL — Filtration Date: 09/18/2020 08:45

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0030	0.0047	mg/L	
Manganese, Dissolved	7439-96-5	1	0.0010	0.0030	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-3

20I0219-08 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 — Sampled: 09/17/2020 10:50
Instrument: ICPMS1 Analyst: MCB — Analyzed: 09/29/2020 21:12

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20I0219-08 A 02
Preparation Batch: BII0825 — Sample Size: 25 mL — Filtration Batch: BII0484
Prepared: 09/29/2020 — Final Volume: 25 mL — Filtration Date: 09/18/2020 08:45

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	1	20.0	ND	ug/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-3

20I0219-08 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 09/17/2020 10:50
Instrument: ICPMS1 Analyst: MCB — Analyzed: 09/29/2020 23:42

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x — Extract ID: 20I0219-08 A 03
Preparation Batch: BII0824 — Sample Size: 100 mL — Filtration Batch: BII0484
Prepared: 09/29/2020 — Final Volume: 20 mL — Filtration Date: 09/18/2020 08:45

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0400	0.113	ug/L	

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20I0219-08 A 02
Preparation Batch: BII0825 — Sample Size: 25 mL — Filtration Batch: BII0484
Prepared: 09/29/2020 — Final Volume: 25 mL — Filtration Date: 09/18/2020 08:45

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	4.00	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-3

20I0219-08 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010C — Sampled: 09/17/2020 10:50
Instrument: ICP2 Analyst: TCH — Analyzed: 09/30/2020 14:19

Sample Preparation: Preparation Method: WMN (No Prep) — Extract ID: 20I0219-08 A 04
Preparation Batch: BII0900 — Sample Size: 25 mL — Filtration Batch: BII0484
Prepared: 09/30/2020 — Final Volume: 25 mL — Filtration Date: 09/18/2020 08:45

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0030	0.0152	mg/L	
Manganese, Dissolved	7439-96-5	1	0.0010	6.08	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-10

20I0219-09 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 — Sampled: 09/17/2020 12:05
Instrument: ICPMS1 Analyst: MCB — Analyzed: 09/29/2020 21:16

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20I0219-09 B 02
Preparation Batch: BII0825 — Sample Size: 25 mL — Filtration Batch: BII0484
Prepared: 09/29/2020 — Final Volume: 25 mL — Filtration Date: 09/18/2020 08:45

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	1	20.0	ND	ug/L	U

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MW-10

20I0219-09 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 09/17/2020 12:05
Instrument: ICPMS1 Analyst: MCB — Analyzed: 09/29/2020 23:47

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x — Extract ID: 20I0219-09 B 03
Preparation Batch: BII0824 — Sample Size: 100 mL — Filtration Batch: BII0484
Prepared: 09/29/2020 — Final Volume: 20 mL — Filtration Date: 09/18/2020 08:45

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0400	1.96	ug/L	

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20I0219-09 B 02
Preparation Batch: BII0825 — Sample Size: 25 mL — Filtration Batch: BII0484
Prepared: 09/29/2020 — Final Volume: 25 mL — Filtration Date: 09/18/2020 08:45

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	4.00	ND	ug/L	U

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MW-10

20I0219-09 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010C — Sampled: 09/17/2020 12:05
Instrument: ICP2 Analyst: TCH — Analyzed: 09/30/2020 15:32

Sample Preparation: Preparation Method: WMN (No Prep) — Extract ID: 20I0219-09 B 01
Preparation Batch: BII0900 — Sample Size: 25 mL — Filtration Batch: BII0484
Prepared: 09/30/2020 — Final Volume: 25 mL — Filtration Date: 09/18/2020 08:45

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0030	0.0145	mg/L	
Manganese, Dissolved	7439-96-5	1	0.0010	4.06	mg/L	

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1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-6

20I0219-10 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 — Sampled: 09/17/2020 13:35
Instrument: ICPMS1 Analyst: MCB — Analyzed: 09/29/2020 21:21

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20I0219-10 A 02
Preparation Batch: BII0825 — Sample Size: 25 mL — Filtration Batch: BII0484
Prepared: 09/29/2020 — Final Volume: 25 mL — Filtration Date: 09/18/2020 08:45

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	1	20.0	384	ug/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-6

20I0219-10 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 09/17/2020 13:35
Instrument: ICPMS1 Analyst: MCB — Analyzed: 09/29/2020 23:51

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x — Extract ID: 20I0219-10 A 03
Preparation Batch: BII0824 — Sample Size: 100 mL — Filtration Batch: BII0484
Prepared: 09/29/2020 — Final Volume: 20 mL — Filtration Date: 09/18/2020 08:45

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0400	0.442	ug/L	

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20I0219-10 A 02
Preparation Batch: BII0825 — Sample Size: 25 mL — Filtration Batch: BII0484
Prepared: 09/29/2020 — Final Volume: 25 mL — Filtration Date: 09/18/2020 08:45

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	4.00	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-6

20I0219-10 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010C — Sampled: 09/17/2020 13:35
Instrument: ICP2 Analyst: TCH — Analyzed: 09/30/2020 15:37

Sample Preparation: Preparation Method: WMN (No Prep) — Extract ID: 20I0219-10 A 01
Preparation Batch: BII0900 — Sample Size: 25 mL — Filtration Batch: BII0484
Prepared: 09/30/2020 — Final Volume: 25 mL — Filtration Date: 09/18/2020 08:45

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0030	0.0201	mg/L	
Manganese, Dissolved	7439-96-5	1	0.0010	0.513	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-12

20I0219-11 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 — Sampled: 09/17/2020 14:00
Instrument: ICPMS1 Analyst: MCB — Analyzed: 09/29/2020 21:26

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20I0219-11 A 02
Preparation Batch: BII0825 — Sample Size: 25 mL — Filtration Batch: BII0484
Prepared: 09/29/2020 — Final Volume: 25 mL — Filtration Date: 09/18/2020 08:45

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	1	20.0	57.1	ug/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-12

20I0219-11 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 09/17/2020 14:00
Instrument: ICPMS1 Analyst: MCB — Analyzed: 09/29/2020 23:56

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x — Extract ID: 20I0219-11 A 03
Preparation Batch: BII0824 — Sample Size: 100 mL — Filtration Batch: BII0484
Prepared: 09/29/2020 — Final Volume: 20 mL — Filtration Date: 09/18/2020 08:45

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0400	0.719	ug/L	

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20I0219-11 A 02
Preparation Batch: BII0825 — Sample Size: 25 mL — Filtration Batch: BII0484
Prepared: 09/29/2020 — Final Volume: 25 mL — Filtration Date: 09/18/2020 08:45

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	4.00	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-12

20I0219-11 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010C — Sampled: 09/17/2020 14:00
Instrument: ICP2 Analyst: TCH — Analyzed: 09/30/2020 15:41

Sample Preparation: Preparation Method: WMN (No Prep) — Extract ID: 20I0219-11 A 01
Preparation Batch: BII0900 — Sample Size: 25 mL — Filtration Batch: BII0484
Prepared: 09/30/2020 — Final Volume: 25 mL — Filtration Date: 09/18/2020 08:45

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0030	0.0041	mg/L	
Manganese, Dissolved	7439-96-5	1	0.0010	2.13	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-8

20I0219-12 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 — Sampled: 09/17/2020 14:20
Instrument: ICPMS1 Analyst: MCB — Analyzed: 09/29/2020 21:31

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20I0219-12 A 02
Preparation Batch: BII0825 — Sample Size: 25 mL — Filtration Batch: BII0484
Prepared: 09/29/2020 — Final Volume: 25 mL — Filtration Date: 09/18/2020 08:45

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	1	20.0	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-8

20I0219-12 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 09/17/2020 14:20
Instrument: ICPMS1 Analyst: MCB — Analyzed: 09/30/2020 00:01

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x — Extract ID: 20I0219-12 A 03
Preparation Batch: BII0824 — Sample Size: 100 mL — Filtration Batch: BII0484
Prepared: 09/29/2020 — Final Volume: 20 mL — Filtration Date: 09/18/2020 08:45

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0400	0.691	ug/L	

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20I0219-12 A 02
Preparation Batch: BII0825 — Sample Size: 25 mL — Filtration Batch: BII0484
Prepared: 09/29/2020 — Final Volume: 25 mL — Filtration Date: 09/18/2020 08:45

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	4.00	ND	ug/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

MW-8

20I0219-12 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010C — Sampled: 09/17/2020 14:20
Instrument: ICP2 Analyst: TCH — Analyzed: 09/30/2020 14:28

Sample Preparation: Preparation Method: WMN (No Prep) — Extract ID: 20I0219-12 A 04
Preparation Batch: BII0900 — Sample Size: 25 mL — Filtration Batch: BII0484
Prepared: 09/30/2020 — Final Volume: 25 mL — Filtration Date: 09/18/2020 08:45

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0030	0.0047	mg/L	
Manganese, Dissolved	7439-96-5	1	0.0010	2.14	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Trip Blanks

20I0219-13 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 14:20
Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 13:14

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0219-13 B
Preparation Batch: BII0496 — Sample Size: 10 mL
Prepared: 09/18/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Trip Blanks

20I0219-13 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 14:20
Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 13:14

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

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20I0219-13 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 14:20
Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 13:14

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*103*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.4*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*92.5*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*99.3*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Trip Blanks

20I0219-13 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM — Sampled: 09/17/2020 14:20
Instrument: NT16 Analyst: PB — Analyzed: 09/22/2020 16:19

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0219-13 C
Preparation Batch: BII0596 — Sample Size: 10 mL
Prepared: 09/22/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*106*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Volatile Organic Compounds - Quality Control

Batch BII0496 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BII0496-BLK1)				Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 12:21						
Chloromethane	ND	0.50	ug/L							U
Vinyl Chloride	ND	0.20	ug/L							U
Bromomethane	ND	1.00	ug/L							U
Chloroethane	ND	0.20	ug/L							U
Trichlorofluoromethane	ND	0.20	ug/L							U
Acrolein	ND	5.00	ug/L							U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.20	ug/L							U
Acetone	ND	5.00	ug/L							U
1,1-Dichloroethene	ND	0.20	ug/L							U
Iodomethane	ND	1.00	ug/L							U
Methylene Chloride	ND	1.00	ug/L							U
Acrylonitrile	ND	1.00	ug/L							U
Carbon Disulfide	ND	0.20	ug/L							U
trans-1,2-Dichloroethene	ND	0.20	ug/L							U
Vinyl Acetate	ND	0.20	ug/L							U
1,1-Dichloroethane	ND	0.20	ug/L							U
2-Butanone	ND	5.00	ug/L							U
2,2-Dichloropropane	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Chloroform	ND	0.20	ug/L							U
Bromochloromethane	ND	0.20	ug/L							U
1,1,1-Trichloroethane	ND	0.20	ug/L							U
1,1-Dichloropropene	ND	0.20	ug/L							U
Carbon tetrachloride	ND	0.20	ug/L							U
1,2-Dichloroethane	ND	0.20	ug/L							U
Benzene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
1,2-Dichloropropane	ND	0.20	ug/L							U
Bromodichloromethane	ND	0.20	ug/L							U
Dibromomethane	ND	0.20	ug/L							U
2-Chloroethyl vinyl ether	ND	1.00	ug/L							U
4-Methyl-2-Pentanone	ND	5.00	ug/L							U
cis-1,3-Dichloropropene	ND	0.20	ug/L							U
Toluene	ND	0.20	ug/L							U
trans-1,3-Dichloropropene	ND	0.20	ug/L							U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Volatile Organic Compounds - Quality Control

Batch BII0496 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BII0496-BLK1)				Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 12:21						
2-Hexanone	ND	5.00	ug/L							U
1,1,2-Trichloroethane	ND	0.20	ug/L							U
1,3-Dichloropropane	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Dibromochloromethane	ND	0.20	ug/L							U
1,2-Dibromoethane	ND	0.20	ug/L							U
Chlorobenzene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
1,1,1,2-Tetrachloroethane	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Xylenes, total	ND	0.60	ug/L							U
Styrene	ND	0.20	ug/L							U
Bromoform	ND	0.20	ug/L							U
1,1,2,2-Tetrachloroethane	ND	0.20	ug/L							U
1,2,3-Trichloropropane	ND	0.50	ug/L							U
trans-1,4-Dichloro 2-Butene	ND	1.00	ug/L							U
n-Propylbenzene	ND	0.20	ug/L							U
Bromobenzene	ND	0.20	ug/L							U
Isopropyl Benzene	ND	0.20	ug/L							U
2-Chlorotoluene	ND	0.20	ug/L							U
4-Chlorotoluene	ND	0.20	ug/L							U
t-Butylbenzene	ND	0.20	ug/L							U
1,3,5-Trimethylbenzene	ND	0.20	ug/L							U
1,2,4-Trimethylbenzene	ND	0.20	ug/L							U
s-Butylbenzene	ND	0.20	ug/L							U
4-Isopropyl Toluene	ND	0.20	ug/L							U
1,3-Dichlorobenzene	ND	0.20	ug/L							U
1,4-Dichlorobenzene	ND	0.20	ug/L							U
n-Butylbenzene	ND	0.20	ug/L							U
1,2-Dichlorobenzene	ND	0.20	ug/L							U
1,2-Dibromo-3-chloropropane	ND	0.50	ug/L							U
1,2,4-Trichlorobenzene	ND	0.50	ug/L							U
Hexachloro-1,3-Butadiene	ND	0.50	ug/L							U
Naphthalene	ND	0.50	ug/L							U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Volatile Organic Compounds - Quality Control

Batch BII0496 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BII0496-BLK1)				Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 12:21						
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U
Dichlorodifluoromethane	ND	0.20	ug/L							U
Methyl tert-butyl Ether	ND	0.50	ug/L							U
2-Pentanone	ND	5.00	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5.22		ug/L	*5.00*		*104*	*80-129*			
Surrogate: Toluene-d8	4.92		ug/L	*5.00*		*98.4*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.17		ug/L	*5.00*		*103*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.96		ug/L	*5.00*		*99.2*	*80-120*			
LCS (BII0496-BS1)				Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 10:11						
Chloromethane	6.54	0.50	ug/L	10.0		65.4	60-138			Q
Vinyl Chloride	9.37	0.20	ug/L	10.0		93.7	66-133			
Bromomethane	9.29	1.00	ug/L	10.0		92.9	72-131			
Chloroethane	9.49	0.20	ug/L	10.0		94.9	60-155			
Trichlorofluoromethane	8.70	0.20	ug/L	10.0		87.0	80-129			
Acrolein	84.6	5.00	ug/L	50.0		169	52-144			*, Q
1,1,2-Trichloro-1,2,2-Trifluoroethane	9.93	0.20	ug/L	10.0		99.3	76-129			
Acetone	44.3	5.00	ug/L	50.0		88.7	58-142			
1,1-Dichloroethene	9.42	0.20	ug/L	10.0		94.2	69-135			
Iodomethane	9.49	1.00	ug/L	10.0		94.9	56-147			
Methylene Chloride	8.86	1.00	ug/L	10.0		88.6	65-135			
Acrylonitrile	8.43	1.00	ug/L	10.0		84.3	64-134			
Carbon Disulfide	8.86	0.20	ug/L	10.0		88.6	78-125			
trans-1,2-Dichloroethene	9.30	0.20	ug/L	10.0		93.0	78-128			
Vinyl Acetate	8.94	0.20	ug/L	10.0		89.4	55-138			
1,1-Dichloroethane	9.50	0.20	ug/L	10.0		95.0	76-124			
2-Butanone	43.6	5.00	ug/L	50.0		87.2	61-140			
2,2-Dichloropropane	10.6	0.20	ug/L	10.0		106	78-125			
cis-1,2-Dichloroethene	9.74	0.20	ug/L	10.0		97.4	80-121			
Chloroform	8.83	0.20	ug/L	10.0		88.3	80-122			
Bromochloromethane	9.08	0.20	ug/L	10.0		90.8	80-121			
1,1,1-Trichloroethane	9.75	0.20	ug/L	10.0		97.5	79-123			
1,1-Dichloropropene	8.93	0.20	ug/L	10.0		89.3	80-120			
Carbon tetrachloride	10.1	0.20	ug/L	10.0		101	53-137			
1,2-Dichloroethane	8.69	0.20	ug/L	10.0		86.9	75-123			

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Volatile Organic Compounds - Quality Control

Batch BII0496 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BII0496-BS1)				Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 10:11						
Benzene	9.58	0.20	ug/L	10.0		95.8	80-120			
Trichloroethene	9.35	0.20	ug/L	10.0		93.5	80-120			
1,2-Dichloropropane	9.41	0.20	ug/L	10.0		94.1	80-120			
Bromodichloromethane	9.66	0.20	ug/L	10.0		96.6	80-121			
Dibromomethane	9.10	0.20	ug/L	10.0		91.0	80-120			
2-Chloroethyl vinyl ether	8.63	1.00	ug/L	10.0		86.3	74-127			
4-Methyl-2-Pentanone	43.3	5.00	ug/L	50.0		86.7	67-133			
cis-1,3-Dichloropropene	9.86	0.20	ug/L	10.0		98.6	80-124			
Toluene	9.32	0.20	ug/L	10.0		93.2	80-120			
trans-1,3-Dichloropropene	9.34	0.20	ug/L	10.0		93.4	71-127			
2-Hexanone	43.5	5.00	ug/L	50.0		87.0	69-133			
1,1,2-Trichloroethane	9.42	0.20	ug/L	10.0		94.2	80-121			
1,3-Dichloropropane	8.66	0.20	ug/L	10.0		86.6	80-120			
Tetrachloroethene	9.61	0.20	ug/L	10.0		96.1	80-120			
Dibromochloromethane	8.79	0.20	ug/L	10.0		87.9	65-135			
1,2-Dibromoethane	9.15	0.20	ug/L	10.0		91.5	80-121			
Chlorobenzene	9.41	0.20	ug/L	10.0		94.1	80-120			
Ethylbenzene	9.56	0.20	ug/L	10.0		95.6	80-120			
1,1,1,2-Tetrachloroethane	9.60	0.20	ug/L	10.0		96.0	80-120			
m,p-Xylene	19.8	0.40	ug/L	20.0		99.0	80-121			
o-Xylene	9.74	0.20	ug/L	10.0		97.4	80-121			
Xylenes, total	29.5	0.60	ug/L	30.0		98.4	76-127			
Styrene	9.65	0.20	ug/L	10.0		96.5	80-124			
Bromoform	9.37	0.20	ug/L	10.0		93.7	51-134			
1,1,2,2-Tetrachloroethane	8.98	0.20	ug/L	10.0		89.8	77-123			
1,2,3-Trichloropropane	8.88	0.50	ug/L	10.0		88.8	76-125			
trans-1,4-Dichloro 2-Butene	8.35	1.00	ug/L	10.0		83.5	55-129			
n-Propylbenzene	9.42	0.20	ug/L	10.0		94.2	78-130			
Bromobenzene	9.11	0.20	ug/L	10.0		91.1	80-120			
Isopropyl Benzene	9.47	0.20	ug/L	10.0		94.7	80-128			
2-Chlorotoluene	8.99	0.20	ug/L	10.0		89.9	78-122			
4-Chlorotoluene	9.20	0.20	ug/L	10.0		92.0	80-121			
t-Butylbenzene	9.17	0.20	ug/L	10.0		91.7	78-125			
1,3,5-Trimethylbenzene	9.50	0.20	ug/L	10.0		95.0	80-129			
1,2,4-Trimethylbenzene	9.59	0.20	ug/L	10.0		95.9	80-127			

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Volatile Organic Compounds - Quality Control

Batch BII0496 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BII0496-BS1)				Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 10:11						
s-Butylbenzene	9.38	0.20	ug/L	10.0		93.8	78-129			
4-Isopropyl Toluene	9.50	0.20	ug/L	10.0		95.0	79-130			
1,3-Dichlorobenzene	9.31	0.20	ug/L	10.0		93.1	80-120			
1,4-Dichlorobenzene	9.16	0.20	ug/L	10.0		91.6	80-120			
n-Butylbenzene	9.80	0.20	ug/L	10.0		98.0	74-129			
1,2-Dichlorobenzene	9.09	0.20	ug/L	10.0		90.9	80-120			
1,2-Dibromo-3-chloropropane	9.21	0.50	ug/L	10.0		92.1	62-123			
1,2,4-Trichlorobenzene	10.0	0.50	ug/L	10.0		100	64-124			
Hexachloro-1,3-Butadiene	10.0	0.50	ug/L	10.0		100	58-123			
Naphthalene	10.0	0.50	ug/L	10.0		100	50-134			
1,2,3-Trichlorobenzene	9.47	0.50	ug/L	10.0		94.7	49-133			
Dichlorodifluoromethane	9.00	0.20	ug/L	10.0		90.0	48-147			
Methyl tert-butyl Ether	9.35	0.50	ug/L	10.0		93.5	71-132			
2-Pentanone	45.3	5.00	ug/L	50.0		90.6	69-134			
Surrogate: 1,2-Dichloroethane-d4	4.95		ug/L	*5.00*		*99.0*	*80-129*			
Surrogate: Toluene-d8	5.06		ug/L	*5.00*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.87		ug/L	*5.00*		*97.4*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.96		ug/L	*5.00*		*99.2*	*80-120*			
LCS Dup (BII0496-BSD1)				Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 10:37						
Chloromethane	7.47	0.50	ug/L	10.0		74.7	60-138	13.30	30	Q
Vinyl Chloride	11.4	0.20	ug/L	10.0		114	66-133	19.40	30	
Bromomethane	10.6	1.00	ug/L	10.0		106	72-131	13.00	30	
Chloroethane	11.1	0.20	ug/L	10.0		111	60-155	15.70	30	
Trichlorofluoromethane	9.41	0.20	ug/L	10.0		94.1	80-129	7.78	30	
Acrolein	106	5.00	ug/L	50.0		212	52-144	22.50	30	*, Q, E
1,1,2-Trichloro-1,2,2-Trifluoroethane	11.1	0.20	ug/L	10.0		111	76-129	10.80	30	
Acetone	55.4	5.00	ug/L	50.0		111	58-142	22.20	30	
1,1-Dichloroethene	11.0	0.20	ug/L	10.0		110	69-135	15.40	30	
Iodomethane	11.4	1.00	ug/L	10.0		114	56-147	18.60	30	
Methylene Chloride	10.4	1.00	ug/L	10.0		104	65-135	16.20	30	
Acrylonitrile	11.3	1.00	ug/L	10.0		113	64-134	28.80	30	
Carbon Disulfide	10.9	0.20	ug/L	10.0		109	78-125	20.20	30	
trans-1,2-Dichloroethene	10.9	0.20	ug/L	10.0		109	78-128	15.50	30	
Vinyl Acetate	11.2	0.20	ug/L	10.0		112	55-138	22.70	30	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Volatile Organic Compounds - Quality Control

Batch BII0496 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BII0496-BSD1)				Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 10:37						
1,1-Dichloroethane	11.5	0.20	ug/L	10.0		115	76-124	18.80	30	
2-Butanone	54.3	5.00	ug/L	50.0		109	61-140	21.90	30	
2,2-Dichloropropane	12.5	0.20	ug/L	10.0		125	78-125	16.20	30	
cis-1,2-Dichloroethene	11.3	0.20	ug/L	10.0		113	80-121	14.80	30	
Chloroform	11.0	0.20	ug/L	10.0		110	80-122	21.60	30	
Bromochloromethane	11.3	0.20	ug/L	10.0		113	80-121	21.80	30	
1,1,1-Trichloroethane	11.4	0.20	ug/L	10.0		114	79-123	15.30	30	
1,1-Dichloropropene	10.3	0.20	ug/L	10.0		103	80-120	14.40	30	
Carbon tetrachloride	11.9	0.20	ug/L	10.0		119	53-137	16.70	30	
1,2-Dichloroethane	10.6	0.20	ug/L	10.0		106	75-123	20.10	30	
Benzene	11.0	0.20	ug/L	10.0		110	80-120	13.50	30	
Trichloroethene	11.4	0.20	ug/L	10.0		114	80-120	20.00	30	
1,2-Dichloropropane	11.6	0.20	ug/L	10.0		116	80-120	20.70	30	
Bromodichloromethane	11.2	0.20	ug/L	10.0		112	80-121	14.90	30	
Dibromomethane	11.2	0.20	ug/L	10.0		112	80-120	20.60	30	
2-Chloroethyl vinyl ether	10.3	1.00	ug/L	10.0		103	74-127	17.90	30	
4-Methyl-2-Pentanone	55.9	5.00	ug/L	50.0		112	67-133	25.30	30	
cis-1,3-Dichloropropene	11.8	0.20	ug/L	10.0		118	80-124	18.30	30	
Toluene	11.3	0.20	ug/L	10.0		113	80-120	19.20	30	
trans-1,3-Dichloropropene	11.7	0.20	ug/L	10.0		117	71-127	22.10	30	
2-Hexanone	56.7	5.00	ug/L	50.0		113	69-133	26.40	30	
1,1,2-Trichloroethane	11.8	0.20	ug/L	10.0		118	80-121	22.40	30	
1,3-Dichloropropane	10.5	0.20	ug/L	10.0		105	80-120	18.90	30	
Tetrachloroethene	11.9	0.20	ug/L	10.0		119	80-120	20.90	30	
Dibromochloromethane	11.2	0.20	ug/L	10.0		112	65-135	24.30	30	
1,2-Dibromoethane	11.2	0.20	ug/L	10.0		112	80-121	20.10	30	
Chlorobenzene	11.1	0.20	ug/L	10.0		111	80-120	16.50	30	
Ethylbenzene	11.5	0.20	ug/L	10.0		115	80-120	18.40	30	
1,1,1,2-Tetrachloroethane	11.7	0.20	ug/L	10.0		117	80-120	19.50	30	
m,p-Xylene	22.8	0.40	ug/L	20.0		114	80-121	14.00	30	
o-Xylene	11.0	0.20	ug/L	10.0		110	80-121	11.80	30	
Xylenes, total	33.7	0.60	ug/L	30.0		112	76-127	13.20	30	
Styrene	11.4	0.20	ug/L	10.0		114	80-124	16.50	30	
Bromoform	12.3	0.20	ug/L	10.0		123	51-134	27.30	30	
1,1,2,2-Tetrachloroethane	11.7	0.20	ug/L	10.0		117	77-123	26.60	30	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Volatile Organic Compounds - Quality Control

Batch BII0496 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BII0496-BSD1)				Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 10:37						
1,2,3-Trichloropropane	11.0	0.50	ug/L	10.0		110	76-125	21.50	30	
trans-1,4-Dichloro 2-Butene	11.1	1.00	ug/L	10.0		111	55-129	27.90	30	
n-Propylbenzene	11.4	0.20	ug/L	10.0		114	78-130	18.70	30	
Bromobenzene	11.1	0.20	ug/L	10.0		111	80-120	19.60	30	
Isopropyl Benzene	11.2	0.20	ug/L	10.0		112	80-128	17.10	30	
2-Chlorotoluene	11.1	0.20	ug/L	10.0		111	78-122	20.70	30	
4-Chlorotoluene	10.9	0.20	ug/L	10.0		109	80-121	16.50	30	
t-Butylbenzene	11.2	0.20	ug/L	10.0		112	78-125	19.50	30	
1,3,5-Trimethylbenzene	11.4	0.20	ug/L	10.0		114	80-129	18.10	30	
1,2,4-Trimethylbenzene	11.4	0.20	ug/L	10.0		114	80-127	17.20	30	
s-Butylbenzene	11.7	0.20	ug/L	10.0		117	78-129	21.90	30	
4-Isopropyl Toluene	11.5	0.20	ug/L	10.0		115	79-130	18.70	30	
1,3-Dichlorobenzene	11.3	0.20	ug/L	10.0		113	80-120	19.60	30	
1,4-Dichlorobenzene	10.8	0.20	ug/L	10.0		108	80-120	16.50	30	
n-Butylbenzene	11.4	0.20	ug/L	10.0		114	74-129	15.10	30	
1,2-Dichlorobenzene	11.2	0.20	ug/L	10.0		112	80-120	20.60	30	
1,2-Dibromo-3-chloropropane	11.1	0.50	ug/L	10.0		111	62-123	18.50	30	
1,2,4-Trichlorobenzene	12.2	0.50	ug/L	10.0		122	64-124	19.60	30	
Hexachloro-1,3-Butadiene	12.0	0.50	ug/L	10.0		120	58-123	17.90	30	
Naphthalene	12.9	0.50	ug/L	10.0		129	50-134	25.70	30	
1,2,3-Trichlorobenzene	12.1	0.50	ug/L	10.0		121	49-133	24.10	30	
Dichlorodifluoromethane	9.60	0.20	ug/L	10.0		96.0	48-147	6.35	30	
Methyl tert-butyl Ether	12.0	0.50	ug/L	10.0		120	71-132	24.80	30	
2-Pentanone	54.1	5.00	ug/L	50.0		108	69-134	17.80	30	
Surrogate: 1,2-Dichloroethane-d4	4.76		ug/L	*5.00*		*95.2*	*80-129*			
Surrogate: Toluene-d8	4.91		ug/L	*5.00*		*98.1*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.81		ug/L	*5.00*		*96.2*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.86		ug/L	*5.00*		*97.3*	*80-120*			

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Volatile Organic Compounds - SIM - Quality Control

Batch BII0596 - EPA 5030C (Purge and Trap)

Instrument: NT16 Analyst: PB

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BII0596-BLK1)				Prepared: 22-Sep-2020 Analyzed: 22-Sep-2020 12:45						
Vinyl chloride	ND	20.0	ng/L							U
Surrogate: 1,2-Dichloroethane-d4	5130		ng/L	*5000*		*103*	*80-129*			
LCS (BII0596-BS1)				Prepared: 22-Sep-2020 Analyzed: 22-Sep-2020 11:52						
Vinyl chloride	2040	20.0	ng/L	2000		102	76-120			
Surrogate: 1,2-Dichloroethane-d4	5000		ng/L	*5000*		*100*	*80-129*			
LCS Dup (BII0596-BSD1)				Prepared: 22-Sep-2020 Analyzed: 22-Sep-2020 12:25						
Vinyl chloride	2100	20.0	ng/L	2000		105	76-120	3.33	30	
Surrogate: 1,2-Dichloroethane-d4	5050		ng/L	*5000*		*101*	*80-129*			
Matrix Spike (BII0596-MS1)	**Source: 20I0219-03**			Prepared: 22-Sep-2020 Analyzed: 22-Sep-2020 16:39						
Vinyl chloride	2130	20.0	ng/L	2000	ND	106	76-120			
Surrogate: 1,2-Dichloroethane-d4	5340		ng/L	*5000*	*5010*	*107*	*80-129*			

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

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BII0596-MSD1)	**Source: 20I0219-03**			Prepared: 22-Sep-2020 Analyzed: 22-Sep-2020 16:59						
Vinyl chloride	2020	20.0	ng/L	2000	ND	101	76-120	5.50	30	
Surrogate: 1,2-Dichloroethane-d4	5260		ng/L	*5000*	*5010*	*105*	*80-129*			

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Metals and Metallic Compounds - Quality Control

Batch BII0615 - TWC EPA 3010A

Instrument: ICP2 Analyst: SKM

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BII0615-BLK1)				Prepared: 23-Sep-2020 Analyzed: 24-Sep-2020 14:55						
Calcium	ND	0.0500	mg/L							U
Potassium	ND	0.500	mg/L							U
Sodium	ND	0.500	mg/L							U
Sodium	ND	50.0	mg/L							U
LCS (BII0615-BS1)				Prepared: 23-Sep-2020 Analyzed: 24-Sep-2020 15:18						
Calcium	9.98	0.0500	mg/L	10.0		99.8	80-120			
Potassium	10.6	0.500	mg/L	10.0		106	80-120			
Sodium	10.5	0.500	mg/L	10.0		105	80-120			
Sodium	ND	50.0	mg/L	10.0		86.0	80-120			U
Duplicate (BII0615-DUP1)	**Source: 20I0219-01**			Prepared: 23-Sep-2020 Analyzed: 24-Sep-2020 14:59						
Calcium	11.6	0.0500	mg/L		11.4			1.87	20	
Potassium	0.678	0.500	mg/L		0.651			4.16	20	
Sodium	4.88	0.500	mg/L		4.86			0.48	20	
Sodium	ND	50.0	mg/L		5.06			1.40	20	U
Matrix Spike (BII0615-MS1)	**Source: 20I0219-01**			Prepared: 23-Sep-2020 Analyzed: 24-Sep-2020 15:07						
Calcium	21.6	0.0500	mg/L	10.0	11.4	103	75-125			
Potassium	11.3	0.500	mg/L	10.0	0.651	106	75-125			
Sodium	15.7	0.500	mg/L	10.0	4.86	108	75-125			
Sodium	ND	50.0	mg/L	10.0	5.06	95.7	75-125			U

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

Matrix Spike Dup (BII0615-MSD1)	**Source: 20I0219-01**			Prepared: 23-Sep-2020 Analyzed: 24-Sep-2020 15:12						
Calcium	21.7	0.0500	mg/L	10.0	11.4	103	75-125	0.35	20	
Potassium	11.3	0.500	mg/L	10.0	0.651	107	75-125	0.28	20	
Sodium	15.6	0.500	mg/L	10.0	4.86	107	75-125	0.82	20	
Sodium	ND	50.0	mg/L	10.0	5.06	97.6	75-125	1.23	20	U

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BII0824 - RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BII0824-BLK1)				Prepared: 29-Sep-2020 Analyzed: 29-Sep-2020 15:38							
Arsenic, Dissolved	75a	ND	0.0400	ug/L							U
LCS (BII0824-BS1)				Prepared: 29-Sep-2020 Analyzed: 29-Sep-2020 15:42							
Arsenic, Dissolved	75a	4.76	0.0400	ug/L	5.00		95.1	80-120			

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BII0825 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BII0825-BLK1)					Prepared: 29-Sep-2020 Analyzed: 29-Sep-2020 14:31						
Iron, Dissolved	54	ND	20.0	ug/L							U
Iron, Dissolved	57	ND	20.0	ug/L							U
Zinc, Dissolved	66	ND	4.00	ug/L							U
Zinc, Dissolved	67	ND	4.00	ug/L							U
LCS (BII0825-BS1)					Prepared: 29-Sep-2020 Analyzed: 29-Sep-2020 14:35						
Iron, Dissolved	54	4710	20.0	ug/L	5000		94.3	80-120			
Iron, Dissolved	57	4650	20.0	ug/L	5000		93.0	80-120			
Zinc, Dissolved	66	78.3	4.00	ug/L	80.0		97.8	80-120			
Zinc, Dissolved	67	72.1	4.00	ug/L	80.0		90.1	80-120			
Duplicate (BII0825-DUP1)			**Source: 20I0219-07**		Prepared: 29-Sep-2020 Analyzed: 29-Sep-2020 20:36						
Iron, Dissolved	54	ND	20.0	ug/L		ND					U
Iron, Dissolved	57	ND	20.0	ug/L		17.6			5.27	20	U
Zinc, Dissolved	66	ND	4.00	ug/L		ND					L, U
Zinc, Dissolved	67	ND	4.00	ug/L		1.66			20.10	20	U
Matrix Spike (BII0825-MS1)			**Source: 20I0219-07**		Prepared: 29-Sep-2020 Analyzed: 29-Sep-2020 20:41						
Iron, Dissolved	54	4720	20.0	ug/L	5000	ND	94.4	75-125			
Iron, Dissolved	57	4630	20.0	ug/L	5000	17.6	92.2	75-125			
Zinc, Dissolved	66	79.0	4.00	ug/L	80.0	ND	97.0	75-125			
Zinc, Dissolved	67	73.7	4.00	ug/L	80.0	1.66	90.0	75-125			

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

Matrix Spike Dup (BII0825-MSD1)			**Source: 20I0219-07**		Prepared: 29-Sep-2020 Analyzed: 29-Sep-2020 20:47						
Iron, Dissolved	54	4610	20.0	ug/L	5000	ND	92.2	75-125	2.33	20	
Iron, Dissolved	57	4610	20.0	ug/L	5000	17.6	91.9	75-125	0.29	20	
Zinc, Dissolved	66	79.7	4.00	ug/L	80.0	ND	97.8	75-125	0.80	20	
Zinc, Dissolved	67	73.6	4.00	ug/L	80.0	1.66	89.9	75-125	0.15	20	

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BII0900 - WMN (No Prep)

Instrument: ICP2 Analyst: TCH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BII0900-BLK1)			Prepared: 30-Sep-2020 Analyzed: 30-Sep-2020 16:41							
Barium, Dissolved	ND	0.0030	mg/L							U
Manganese, Dissolved	ND	0.0010	mg/L							U
LCS (BII0900-BS1)			Prepared: 30-Sep-2020 Analyzed: 30-Sep-2020 14:41							
Barium, Dissolved	2.06	0.0030	mg/L	2.00		103	80-120			
Manganese, Dissolved	0.503	0.0010	mg/L	0.500		101	80-120			
Duplicate (BII0900-DUP1)	**Source: 20I0219-12**		Prepared: 30-Sep-2020 Analyzed: 30-Sep-2020 14:24							
Barium, Dissolved	0.0048	0.0030	mg/L		0.0047			2.62	20	
Manganese, Dissolved	2.13	0.0010	mg/L		2.14			0.41	20	
Matrix Spike (BII0900-MS1)	**Source: 20I0219-12**		Prepared: 30-Sep-2020 Analyzed: 30-Sep-2020 14:32							
Barium, Dissolved	2.05	0.0030	mg/L	2.00	0.0047	102	75-125			
Manganese, Dissolved	2.60	0.0010	mg/L	0.500	2.14	92.3	75-125			

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

Matrix Spike Dup (BII0900-MSD1)	**Source: 20I0219-12**		Prepared: 30-Sep-2020 Analyzed: 30-Sep-2020 14:37							
Barium, Dissolved	2.08	0.0030	mg/L	2.00	0.0047	104	75-125	1.49	20	
Manganese, Dissolved	2.61	0.0010	mg/L	0.500	2.14	93.8	75-125	0.28	20	

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Wet Chemistry - Quality Control

Batch BII0487 - No Prep Wet Chem

Instrument: Accumet AB150 Analyst: UW

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BII0487-BS1)				Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 10:35							
pH	6.97	0.01	0.01	pH Units	7.00		99.6	99.2-100.8			
Duplicate (BII0487-DUP1)		**Source: 20I0219-01**		Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 10:35							
pH	6.25	0.01	0.01	pH Units		6.26			0.16	20	H

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Wet Chemistry - Quality Control

Batch BII0498 - No Prep Wet Chem

Instrument: LACHAT2 Analyst: LRB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BII0498-BLK1)				Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 15:24							
Nitrite-N	ND	0.010	0.010	mg/L							U
LCS (BII0498-BS1)				Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 15:25							
Nitrite-N	0.503	0.010	0.010	mg/L	0.500		101	90-110			
Duplicate (BII0498-DUP1)		**Source: 20I0219-01**		Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 15:28							
Nitrite-N	ND	0.010	0.010	mg/L		ND					U
Matrix Spike (BII0498-MS1)		**Source: 20I0219-01**		Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 15:29							
Nitrite-N	0.508	0.010	0.010	mg/L	0.500	ND	102	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BII0498-MSD1)		**Source: 20I0219-01**		Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 15:30							
Nitrite-N	0.502	0.010	0.010	mg/L	0.500	ND	100	75-125	1.19	200	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Wet Chemistry - Quality Control

Batch BII0549 - No Prep Wet Chem

Instrument: LACHAT2 Analyst: WCW

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BII0549-BLK1)				Prepared: 21-Sep-2020 Analyzed: 22-Sep-2020 16:10							
Chloride	ND	1.00	1.00	mg/L							U
LCS (BII0549-BS1)				Prepared: 21-Sep-2020 Analyzed: 22-Sep-2020 16:11							
Chloride	5.03	1.00	1.00	mg/L	5.00		101	90-110			
Duplicate (BII0549-DUP1)		**Source: 20I0219-01**		Prepared: 21-Sep-2020 Analyzed: 22-Sep-2020 16:14							
Chloride	5.08	1.00	1.00	mg/L		4.91			3.40	20	
Matrix Spike (BII0549-MS1)		**Source: 20I0219-01**		Prepared: 21-Sep-2020 Analyzed: 22-Sep-2020 16:15							
Chloride	10.2	1.00	1.00	mg/L	5.00	4.91	106	75-125			E

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

Matrix Spike Dup (BII0549-MSD1)		**Source: 20I0219-01**		Prepared: 21-Sep-2020 Analyzed: 22-Sep-2020 16:16							
Chloride	10.6	1.00	1.00	mg/L	5.00	4.91	114	75-125	3.85	20	E

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Wet Chemistry - Quality Control

Batch BII0579 - No Prep Wet Chem

Instrument: Accumet AB150 Analyst: UW

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BII0579-BLK1)					Prepared: 22-Sep-2020 Analyzed: 22-Sep-2020 10:44						
Alkalinity, Total	ND	1.00	1.00	mg/L CaCO3							U
Duplicate (BII0579-DUP1)		**Source: 20I0219-01**			Prepared: 22-Sep-2020 Analyzed: 22-Sep-2020 10:44						
Alkalinity, Total	52.9	1.00	1.00	mg/L CaCO3		52.2			1.15	20	
Reference (BII0579-SRM1)					Prepared: 22-Sep-2020 Analyzed: 22-Sep-2020 10:44						
Alkalinity, Total	103	1.00	1.00	mg/L CaCO3	106		96.9	90.57-107.55			

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Wet Chemistry - Quality Control

Batch BII0636 - No Prep Wet Chem

Instrument: LACHAT1 Analyst: BF

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BII0636-BLK2)				Prepared: 23-Sep-2020 Analyzed: 24-Sep-2020 15:56							
Sulfate	ND	2.00	2.00	mg/L							U
LCS (BII0636-BS2)				Prepared: 23-Sep-2020 Analyzed: 24-Sep-2020 15:57							
Sulfate	15.1	2.00	2.00	mg/L	15.0		101	90-110			
Duplicate (BII0636-DUP1)		**Source: 20I0219-01RE1**		Prepared: 23-Sep-2020 Analyzed: 24-Sep-2020 16:07							
Sulfate	4.06	2.00	2.00	mg/L		4.04			0.49	20	
Matrix Spike (BII0636-MS1)		**Source: 20I0219-01RE1**		Prepared: 23-Sep-2020 Analyzed: 24-Sep-2020 16:08							
Sulfate	19.8	2.00	2.00	mg/L	15.0	4.04	105	75-125			

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

Matrix Spike Dup (BII0636-MSD1)		**Source: 20I0219-01RE1**		Prepared: 23-Sep-2020 Analyzed: 24-Sep-2020 16:10							
Sulfate	20.0	2.00	2.00	mg/L	15.0	4.04	106	75-125	1.01	20	

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Wet Chemistry - Quality Control

Batch BII0785 - No Prep Wet Chem

Instrument: LACHAT2 Analyst: WCW

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BII0785-BLK1)					Prepared: 28-Sep-2020 Analyzed: 29-Sep-2020 12:44						
Ammonia-N	ND	0.040	0.040	mg/L							U
LCS (BII0785-BS1)					Prepared: 28-Sep-2020 Analyzed: 29-Sep-2020 12:53						
Ammonia-N	0.498	0.040	0.040	mg/L	0.500		99.6	90-110			
Duplicate (BII0785-DUP1)		**Source: 20I0219-01**			Prepared: 28-Sep-2020 Analyzed: 29-Sep-2020 12:55						
Ammonia-N	ND	0.040	0.040	mg/L		ND					U
Matrix Spike (BII0785-MS1)		**Source: 20I0219-01**			Prepared: 28-Sep-2020 Analyzed: 29-Sep-2020 12:57						
Ammonia-N	0.488	0.040	0.040	mg/L	0.500	ND	97.6	75-125			

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

Matrix Spike Dup (BII0785-MSD1)		**Source: 20I0219-01**			Prepared: 28-Sep-2020 Analyzed: 29-Sep-2020 12:58						
Ammonia-N	0.488	0.040	0.040	mg/L	0.500	ND	97.6	75-125	0.00		

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Wet Chemistry - Quality Control

Batch BII0862 - No Prep Wet Chem

Instrument: UV1800-1 Analyst: WMT

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BII0862-BLK1)				Prepared: 29-Sep-2020 Analyzed: 30-Sep-2020 19:13							
COD	ND	10.0	10.0	mg/L							U
LCS (BII0862-BS1)				Prepared: 29-Sep-2020 Analyzed: 30-Sep-2020 19:14							
COD	100	10.0	10.0	mg/L	100		100	90-110			

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Wet Chemistry - Quality Control

Batch BII0906 - No Prep Wet Chem

Instrument: LACHAT2 Analyst: LRB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BII0906-BLK1)					Prepared: 01-Oct-2020 Analyzed: 01-Oct-2020 13:31						
Nitrate + Nitrite as N	ND	0.010	0.010	mg/L							U
LCS (BII0906-BS1)					Prepared: 01-Oct-2020 Analyzed: 01-Oct-2020 13:33						
Nitrate + Nitrite as N	0.538	0.010	0.010	mg/L	0.500		108	90-110			
Duplicate (BII0906-DUP1)		**Source: 20I0219-01**			Prepared: 01-Oct-2020 Analyzed: 01-Oct-2020 13:35						
Nitrate + Nitrite as N	0.094	0.010	0.010	mg/L		0.095			1.59	20	
Matrix Spike (BII0906-MS1)		**Source: 20I0219-01**			Prepared: 01-Oct-2020 Analyzed: 01-Oct-2020 13:36						
Nitrate + Nitrite as N	0.615	0.010	0.010	mg/L	0.500	0.095	104	75-125			

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

Matrix Spike Dup (BII0906-MSD1)		**Source: 20I0219-01**			Prepared: 01-Oct-2020 Analyzed: 01-Oct-2020 13:38						
Nitrate + Nitrite as N	0.619	0.010	0.010	mg/L	0.500	0.095	105	75-125	0.65	200	

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Wet Chemistry - Quality Control

Batch BIJ0069 - No Prep Wet Chem

Instrument: TOC-LCSH Analyst: WCW

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIJ0069-BLK1)				Prepared: 02-Oct-2020 Analyzed: 03-Oct-2020 01:47							
Total Organic Carbon	ND	0.50	0.50	mg/L							U
LCS (BIJ0069-BS1)				Prepared: 02-Oct-2020 Analyzed: 03-Oct-2020 02:06							
Total Organic Carbon	19.68	0.50	0.50	mg/L	20.00		98.4	90-110			
Duplicate (BIJ0069-DUP1)		**Source: 20I0219-02**		Prepared: 02-Oct-2020 Analyzed: 03-Oct-2020 03:49							
Total Organic Carbon	1.93	0.50	0.50	mg/L		1.95			1.34	20	
Matrix Spike (BIJ0069-MS1)		**Source: 20I0219-02**		Prepared: 02-Oct-2020 Analyzed: 03-Oct-2020 04:08							
Total Organic Carbon	21.42	0.50	0.50	mg/L	20.00	1.95	97.4	75-125			

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

Matrix Spike Dup (BIJ0069-MSD1)		**Source: 20I0219-02**		Prepared: 02-Oct-2020 Analyzed: 03-Oct-2020 04:27							
Total Organic Carbon	21.09	0.50	0.50	mg/L	20.00	1.95	95.7	75-125	1.55	20	

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Microbiology - Quality Control

Batch BII0476 - No Prep Wet Chem

Instrument: N/A

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BII0476-BLK1)				Prepared: 17-Sep-2020 Analyzed: 18-Sep-2020 16:55							
Total Coliforms	ND	1	1	CFU/100 ml							U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.8 in Water	
Iron-54	WADOE,DoD-ELAP
Iron-54	NELAP,DoD-ELAP
Iron-54	NELAP,WADOE,DoD-ELAP
Iron-54	NELAP,WADOE,DoD-ELAP
Iron-57	NELAP,WADOE,DoD-ELAP
Iron-57	WADOE,DoD-ELAP
Iron-57	NELAP,DoD-ELAP
Iron-57	NELAP,WADOE,DoD-ELAP
EPA 200.8 UCT-KED in Water	
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Arsenic-75a	NELAP,WADOE,DoD-ELAP
Arsenic-75a	NELAP,WA-DW,DoD-ELAP
Arsenic-75a	WADOE,WA-DW,DoD-ELAP
Zinc-66	NELAP,WADOE,WA-DW,DoD-ELAP
Zinc-66	WADOE,WA-DW,DoD-ELAP
Zinc-66	NELAP,WA-DW,DoD-ELAP
Zinc-66	NELAP,WADOE,DoD-ELAP
Zinc-67	NELAP,WA-DW,DoD-ELAP
Zinc-67	WADOE,WA-DW,DoD-ELAP
Zinc-67	NELAP,WADOE,DoD-ELAP
Zinc-67	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 353.2 in Water	
Nitrate + Nitrite as N	NELAP,DoD-ELAP,WADOE
Nitrate + Nitrite as N	NELAP,DoD-ELAP
Nitrate + Nitrite as N	DoD-ELAP,WADOE
Nitrate + Nitrite as N	NELAP,DoD-ELAP,WADOE
Nitrite-N	WADOE,NELAP,DoD-ELAP
Nitrite-N	WADOE,NELAP,DoD-ELAP
Nitrite-N	NELAP,DoD-ELAP
Nitrite-N	WADOE,DoD-ELAP
EPA 375.2 in Water	
Sulfate	NELAP
Sulfate	WADOE
Sulfate	WADOE,NELAP

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Sulfate	WADOE,NELAP
EPA 410.4 in Water	
COD	DoD-ELAP,NELAP,WADOE
COD	DoD-ELAP,NELAP,WADOE
COD	DoD-ELAP,NELAP
COD	DoD-ELAP,WADOE
EPA 6010C in Water	
Calcium	NELAP,DoD-ELAP
Calcium	WADOE,DoD-ELAP
Calcium	WADOE,NELAP,DoD-ELAP
Calcium	WADOE,NELAP,DoD-ELAP
Potassium	WADOE,NELAP,DoD-ELAP
Potassium	WADOE,NELAP,DoD-ELAP
Potassium	WADOE,DoD-ELAP
Potassium	NELAP,DoD-ELAP
Sodium	DoD-ELAP,WADOE,NELAP
Sodium	DoD-ELAP,NELAP
Sodium	DoD-ELAP,WADOE
Sodium	DoD-ELAP,WADOE,NELAP
Sodium-1	DoD-ELAP
Sodium-1	DoD-ELAP
Sodium-1	DoD-ELAP
Sodium-1	DoD-ELAP
Barium	NELAP,DoD-ELAP
Barium	WADOE,NELAP,DoD-ELAP
Barium	WADOE,DoD-ELAP
Barium	WADOE,NELAP,DoD-ELAP
Manganese	WADOE,NELAP,DoD-ELAP
Manganese	WADOE,DoD-ELAP
Manganese	NELAP,DoD-ELAP
Manganese	WADOE,NELAP,DoD-ELAP
EPA 8260D in Water	
Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Chloromethane	DoD-ELAP,ADEC,NELAP,CALAP
Chloromethane	DoD-ELAP,ADEC,CALAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,CALAP

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Vinyl Chloride	DoD-ELAP,ADEC,CALAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,CALAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,CALAP
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Chloroethane	DoD-ELAP,ADEC,CALAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,CALAP
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,CALAP
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,CALAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Acrolein	DoD-ELAP,CALAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,CALAP
Acrolein	DoD-ELAP,NELAP,CALAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,CALAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,CALAP
Acetone	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,CALAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE
Iodomethane	DoD-ELAP,CALAP,WADOE
Iodomethane	DoD-ELAP,NELAP,CALAP,WADOE
Iodomethane	DoD-ELAP,NELAP,CALAP
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,CALAP
Methylene Chloride	DoD-ELAP,ADEC,CALAP,WADOE
Acrylonitrile	DoD-ELAP,CALAP,WADOE

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Acrylonitrile	DoD-ELAP,NELAP,CALAP
Acrylonitrile	DoD-ELAP,NELAP,CALAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,CALAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,CALAP
Carbon Disulfide	DoD-ELAP,CALAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,CALAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,CALAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,CALAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,CALAP
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1-Dichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,CALAP,WADOE
2-Butanone	DoD-ELAP,NELAP,CALAP
2-Butanone	DoD-ELAP,NELAP,CALAP,WADOE
2-Butanone	DoD-ELAP,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,CALAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,CALAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,CALAP
Chloroform	DoD-ELAP,ADEC,CALAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP
Bromochloromethane	DoD-ELAP,ADEC,CALAP,WADOE

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP
1,1-Dichloropropene	DoD-ELAP,ADEC,CALAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,CALAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,CALAP
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP
Benzene	DoD-ELAP,ADEC,NELAP,CALAP
Benzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Benzene	DoD-ELAP,ADEC,CALAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,CALAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,CALAP
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,CALAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,CALAP
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,CALAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,CALAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,CALAP
Dibromomethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,CALAP

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,CALAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,CALAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,CALAP
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,CALAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,CALAP,WADOE
Toluene	DoD-ELAP,ADEC,CALAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,CALAP
Toluene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,CALAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
2-Hexanone	DoD-ELAP,CALAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,CALAP
2-Hexanone	DoD-ELAP,NELAP,CALAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP
1,3-Dichloropropane	DoD-ELAP,ADEC,CALAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,CALAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,CALAP
Dibromochloromethane	DoD-ELAP,ADEC,CALAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,CALAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,CALAP

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

1,2-Dibromoethane	DoD-ELAP,NELAP,CALAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
Chlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,CALAP
Ethylbenzene	DoD-ELAP,ADEC,CALAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,CALAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,CALAP
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,CALAP
o-Xylene	DoD-ELAP,ADEC,CALAP,WADOE
Styrene	DoD-ELAP,NELAP,CALAP
Styrene	DoD-ELAP,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,CALAP,WADOE
Styrene	DoD-ELAP,CALAP,WADOE
Bromoform	DoD-ELAP,NELAP,CALAP,WADOE
Bromoform	DoD-ELAP,NELAP,CALAP
Bromoform	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,CALAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,CALAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,CALAP
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,CALAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,CALAP
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,CALAP
n-Propylbenzene	DoD-ELAP,CALAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,CALAP,WADOE
Bromobenzene	DoD-ELAP,CALAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,CALAP
Isopropyl Benzene	DoD-ELAP,NELAP,CALAP
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,CALAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,CALAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP
2-Chlorotoluene	DoD-ELAP,ADEC,CALAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP
4-Chlorotoluene	DoD-ELAP,ADEC,CALAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,CALAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,CALAP
t-Butylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,CALAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,CALAP
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,CALAP
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,CALAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,CALAP
s-Butylbenzene	DoD-ELAP,CALAP,WADOE

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
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4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,CALAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,CALAP
4-Isopropyl Toluene	DoD-ELAP,CALAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,CALAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,CALAP
n-Butylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,2-Dichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,CALAP
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,CALAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,CALAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,CALAP
Naphthalene	DoD-ELAP,ADEC,CALAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,CALAP
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
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1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,CALAP
Dichlorodifluoromethane	DoD-ELAP,ADEC,CALAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,CALAP
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,CALAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
n-Hexane	WADOE
n-Hexane	WADOE
n-Hexane	WADOE
n-Hexane	
2-Pentanone	WADOE
2-Pentanone	WADOE
2-Pentanone	WADOE
2-Pentanone	

EPA 8260D-SIM in Water

Acrylonitrile	NELAP,CALAP
Acrylonitrile	CALAP,WADOE
Acrylonitrile	NELAP,WADOE
Acrylonitrile	NELAP,CALAP,WADOE
Vinyl chloride	CALAP,WADOE
Vinyl chloride	NELAP,CALAP
Vinyl chloride	NELAP,CALAP,WADOE
Vinyl chloride	NELAP,WADOE
1,1-Dichloroethene	NELAP,CALAP,WADOE
1,1-Dichloroethene	NELAP,WADOE
1,1-Dichloroethene	NELAP,CALAP
1,1-Dichloroethene	CALAP,WADOE
cis-1,2-Dichloroethene	NELAP,CALAP
cis-1,2-Dichloroethene	NELAP,CALAP,WADOE
cis-1,2-Dichloroethene	CALAP,WADOE
cis-1,2-Dichloroethene	NELAP,WADOE
trans-1,2-Dichloroethene	NELAP,CALAP,WADOE
trans-1,2-Dichloroethene	CALAP,WADOE
trans-1,2-Dichloroethene	NELAP,WADOE
trans-1,2-Dichloroethene	NELAP,CALAP
Trichloroethene	CALAP,WADOE

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
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Trichloroethene	NELAP,CALAP
Trichloroethene	NELAP,CALAP,WADOE
Trichloroethene	NELAP,WADOE
Tetrachloroethene	NELAP,WADOE
Tetrachloroethene	CALAP,WADOE
Tetrachloroethene	NELAP,CALAP
Tetrachloroethene	NELAP,CALAP,WADOE
1,1,2,2-Tetrachloroethane	NELAP,WADOE
1,1,2,2-Tetrachloroethane	CALAP,WADOE
1,1,2,2-Tetrachloroethane	NELAP,CALAP
1,1,2,2-Tetrachloroethane	NELAP,CALAP,WADOE
1,2-Dichloroethane	NELAP,CALAP,WADOE
1,2-Dichloroethane	NELAP,CALAP
1,2-Dichloroethane	CALAP,WADOE
1,2-Dichloroethane	NELAP,WADOE
Benzene	NELAP,CALAP
Benzene	CALAP,WADOE
Benzene	NELAP,CALAP,WADOE
Benzene	NELAP,WADOE
EPA 9060A in Water	
Total Organic Carbon	DoD-ELAP,WADOE,NELAP
Total Organic Carbon	DoD-ELAP,WADOE,NELAP
Total Organic Carbon	DoD-ELAP,NELAP
Total Organic Carbon	DoD-ELAP,WADOE
SM 2320 B-97 in Water	
Alkalinity, Bicarbonate	NELAP,WA-DW,DoD-ELAP
Alkalinity, Bicarbonate	NELAP,WADOE,WA-DW,DoD-ELAP
Alkalinity, Bicarbonate	WADOE,WA-DW,DoD-ELAP
Alkalinity, Bicarbonate	NELAP,WADOE,DoD-ELAP
Alkalinity, Carbonate	WADOE,DoD-ELAP,NELAP
Alkalinity, Carbonate	WADOE,WA-DW,DoD-ELAP
Alkalinity, Carbonate	WADOE,WA-DW,DoD-ELAP,NELAP
Alkalinity, Carbonate	WA-DW,DoD-ELAP,NELAP
Alkalinity, Hydroxide	WADOE,WA-DW,DoD-ELAP,NELAP
Alkalinity, Hydroxide	WADOE,WA-DW,DoD-ELAP
Alkalinity, Hydroxide	WA-DW,DoD-ELAP,NELAP
Alkalinity, Hydroxide	WADOE,DoD-ELAP,NELAP
Alkalinity, Total	DoD-ELAP,WA-DW,NELAP
Alkalinity, Total	DoD-ELAP,WADOE,NELAP

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Alkalinity, Total	DoD-ELAP,WADOE,WA-DW
Alkalinity, Total	DoD-ELAP,WADOE,WA-DW,NELAP

SM 4500-H+ B-00 in Water

pH	NELAP,WA-DW
pH	WADOE,WA-DW
pH	WADOE,NELAP,WA-DW
pH	WADOE,NELAP

SM 4500-NH3 H-97 in Water

Ammonia-N	DoD-ELAP,NELAP
Ammonia-N	WADOE,DoD-ELAP
Ammonia-N	WADOE,DoD-ELAP,NELAP
Ammonia-N	WADOE,DoD-ELAP,NELAP

SM 9222B in Water

Total Coliforms	WADOE
Total Coliforms	
Total Coliforms	WADOE
Total Coliforms	WADOE

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	01/31/2021
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	01/01/2021

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: [none]	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	05-Oct-2020 12:08

Notes and Definitions

*	Flagged value is not within established control limits.
B	This analyte was detected in the method blank.
D	The reported value is from a dilution
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
H	Hold time violation - Hold time was exceeded.
J	Estimated concentration value detected below the reporting limit.
L	Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to +/- RL instead of 20% RPD
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

14 January 2021

Doug Kunkel
Environmental Partners, Inc.
1180 NW Maple St., Suite 310
Issaquah, WA 98027

RE: Olalla Landfill

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

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

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

Associated Work Order(s)	Associated SDG ID(s)
20L0441	N/A

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

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

Analytical Resources, Inc.

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

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 20L0441	Turn-around Requested: Standard	Page: 1 of 1	
ARI Client Company: TRC	Phone: 425-395-0010	Date: 12/29/20	Ice Present? Yes
Client Contact: Doug Kunkel		No. of Coolers: 2	Cooler Temps: 10.3/7.9
Client Project Name: Olalla			
Client Project #: 382595	Samplers: Wesley Weisberg		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Vinyl Chloride	VOCs SIMS	Total Coliform	Geochem Parameters	Nitrate, Nitrite, Cl, SO4, pH	TOC/COD NH3	Total & Dissolved Metals	Dissolved metals As, Fe, Mn only	Notes/Comments
MW-1	12/29/20	0955	water	8		X	X	X	X	X	X		
MW-5A	12/29/20	1220	" "	3	X				pH only X			X	
MW-3	12/29/20	1305	" "	8		X	X	X	X	X	X		
MW-10	12/29/20	1345	" "	8		X	X	X	X	X	X		
MW-6	12/29/20	1420	" "	8		X	X	X	X	X	X		
MW-8	12/29/20	1505	" "	8		X	X	X	X	X	X		
MW-7	12/29/20	1540	" "	4	X				pH only X			X	

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: Wesley Weisberg	Printed Name: Jacob Salter	Printed Name:	Printed Name:
	Company: TRC	Company: ARI	Company:	Company:
	Date & Time: 12/29/20 1650	Date & Time: 12/29/2020 1650	Date & Time:	Date & Time:

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	20L0441-01	Water	29-Dec-2020 09:55	29-Dec-2020 16:50
MW-1	20L0441-02	Water	29-Dec-2020 09:55	29-Dec-2020 16:50
MW-5A	20L0441-03	Water	29-Dec-2020 12:20	29-Dec-2020 16:50
MW-3	20L0441-04	Water	29-Dec-2020 13:05	29-Dec-2020 16:50
MW-3	20L0441-05	Water	29-Dec-2020 13:05	29-Dec-2020 16:50
MW-10	20L0441-06	Water	29-Dec-2020 13:45	29-Dec-2020 16:50
MW-10	20L0441-07	Water	29-Dec-2020 13:45	29-Dec-2020 16:50
MW-6	20L0441-08	Water	29-Dec-2020 14:20	29-Dec-2020 16:50
MW-6	20L0441-09	Water	29-Dec-2020 14:20	29-Dec-2020 16:50
MW-8	20L0441-10	Water	29-Dec-2020 15:05	29-Dec-2020 16:50
MW-8	20L0441-11	Water	29-Dec-2020 15:05	29-Dec-2020 16:50
MW-7	20L0441-12	Water	29-Dec-2020 15:40	29-Dec-2020 16:50
Trip Blanks	20L0441-13	Water	29-Dec-2020 09:55	29-Dec-2020 16:50

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

Work Order Case Narrative

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements with the exception of all associated "Q" flagged analytes which are out of control low in the CCAL and chloroethane is out of control high . All associated samples that contain analyte have been flagged with a "Q" qualifer.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits with the exception of analytes flagged on the associated forms.

Volatiles - EPA Method 8260D-SIM (Selected Ion Monitoring)

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Total and Dissolved Metals - EPA Method 200.8 and 6010C

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

The blank spike (BS/LCS) percent recoveries were within control limits.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times with the exception of total coliforms and pH samples that have been flagged with an "H" qualifer and were sent to the lab outside of the holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The reference material (SRM) percent recoveries were within control limits.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

WORK ORDER

20L0441

Client: Environmental Partners, Inc. **Project Manager:** Kelly Bottem

Project: Olalla Landfill **Project Number:** 382595

Preservation Confirmation

Container ID	Container Type	pH	
20L0441-01 A	Small OJ, 500 mL	>2	Fail (F)
20L0441-01 B	Small OJ, 500 mL		
20L0441-01 C	Corning Plastic, 125 mL, Na2S2O3		
20L0441-01 D	Glass NM, Amber, 250 mL, 9N H2SO4	<2	Pass (P)
20L0441-01 E	Glass NM, Amber, 250 mL, 9N H2SO4	<2	P
20L0441-01 F	HDPE NM, 500 mL, 1:1 HNO3	<2	P
20L0441-01 G	VOA Vial, Clear, 40 mL, HCL	Bubble	
20L0441-01 H	VOA Vial, Clear, 40 mL, HCL		
20L0441-02 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2	P
20L0441-03 A	Small OJ, 500 mL		
20L0441-03 B	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2	P
20L0441-03 C	VOA Vial, Clear, 40 mL, HCL		
20L0441-04 A	Small OJ, 500 mL	>2	F
20L0441-04 C	Corning Plastic, 125 mL, Na2S2O3		
20L0441-04 D	Glass NM, Amber, 250 mL, 9N H2SO4	<2	P
20L0441-04 E	Glass NM, Amber, 250 mL, 9N H2SO4	<2	P
20L0441-04 F	HDPE NM, 500 mL, 1:1 HNO3	<2	P
20L0441-04 G	VOA Vial, Clear, 40 mL, HCL		
20L0441-04 H	VOA Vial, Clear, 40 mL, HCL		
20L0441-05 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2	P
20L0441-06 A	Small OJ, 500 mL	>2	F
20L0441-06 C	Corning Plastic, 125 mL, Na2S2O3		
20L0441-06 D	Glass NM, Amber, 250 mL, 9N H2SO4	<2	P
20L0441-06 E	Glass NM, Amber, 250 mL, 9N H2SO4	<2	P
20L0441-06 F	HDPE NM, 500 mL, 1:1 HNO3	<2	P
20L0441-06 G	VOA Vial, Clear, 40 mL, HCL	Bubble	
20L0441-06 H	VOA Vial, Clear, 40 mL, HCL		
20L0441-07 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2	P
20L0441-08 A	Small OJ, 500 mL	>2	F
20L0441-08 C	Corning Plastic, 125 mL, Na2S2O3		
20L0441-08 D	Glass NM, Amber, 250 mL, 9N H2SO4	<2	P
20L0441-08 E	Glass NM, Amber, 250 mL, 9N H2SO4	<2	P
20L0441-08 F	HDPE NM, 500 mL, 1:1 HNO3	<2	P
20L0441-08 G	VOA Vial, Clear, 40 mL, HCL		
20L0441-08 H	VOA Vial, Clear, 40 mL, HCL		

Reviewed By Date

WORK ORDER

20L0441

Client: Environmental Partners, Inc. **Project Manager:** Kelly Bottem

Project: Olalla Landfill **Project Number:** 382595

20L0441-09 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2	Pass (P)
20L0441-10 A	Small OJ, 500 mL	>2	Fail (F)
20L0441-10 C	Corning Plastic, 125 mL, Na2S2O3		
20L0441-10 D	Glass NM, Amber, 250 mL, 9N H2SO4	<2	P
20L0441-10 E	Glass NM, Amber, 250 mL, 9N H2SO4	<2	P
20L0441-10 F	HDPE NM, 500 mL, 1:1 HNO3	<2	P
20L0441-10 G	VOA Vial, Clear, 40 mL, HCL	Bubble	
20L0441-10 H	VOA Vial, Clear, 40 mL, HCL		
20L0441-11 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2	P
20L0441-12 A	Small OJ, 500 mL		
20L0441-12 B	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2	P
20L0441-12 C	VOA Vial, Clear, 40 mL, HCL		
20L0441-12 D	VOA Vial, Clear, 40 mL, HCL		
20L0441-13 A	VOA Vial, Clear, 40 mL, HCL		
20L0441-13 B	VOA Vial, Clear, 40 mL, HCL		

JG — Preservation Confirmed By

12/29/2020 — Date

Reviewed By

Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: TRC Project Name: Olalla Landfill

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

Assigned ARI Job No: 20L0441 Tracking No: ~~NA~~

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the 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 1650 10.3 7.9 ___ ___ ___ ___

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: D00 ~~D06~~

Cooler Accepted by: JSm Date: 12/29/2020 Time: 1650

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
How were bottles sealed in plastic bags?	Individually	Grouped	Not
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 JSm
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	12/21/2020	

Were the sample(s) split by ARI? ~~NA~~ YES Date/Time: ___ Equipment: ___ Split by: ___

Samples Logged by: JSm Date: 12/29/2020 Time: 1704 Labels checked by: JSm

*** 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:

vials w/air bubbles marked on preservation sheet, lab to determine sizes. Trip blanks are not annotated on CoC, logged as final sample.

By: JSm Date: 12/29/2020

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Temperature Compliance Form

ARI Work Order: 20L0441

Cooler#: 1 **Temperature(°C):** 10.3

Sample ID	Bottle Count	Bottle Type
MW-1		All containers
MW-5A		"
MW-3	6	All containers, minus 2-250mL AG
MW-10	6	"
MW-6	6	"
MW-8	6	"
MW-7	4	All containers

Cooler#: 2 **Temperature(°C):** 7.9

Sample ID	Bottle Count	Bottle Type
MW-3	2	2-250mL AG bottles
MW-10	2	"
MW-6	2	"
MW-8	2	"

Cooler#: _____ **Temperature(°C):** _____

Sample ID	Bottle Count	Bottle Type

Cooler#: _____ **Temperature(°C):** _____

Sample ID	Bottle Count	Bottle Type

Completed by: JBm Date: 12/29/2020 Time: 1650

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-1

20L0441-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 12/29/2020 09:55
Instrument: NT2 Analyst: LH — Analyzed: 12/30/2020 12:41

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20L0441-01 H
Preparation Batch: BIL0766 — Sample Size: 10 mL
Prepared: 12/30/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-1

20L0441-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 12/29/2020 09:55
Instrument: NT2 Analyst: LH — Analyzed: 12/30/2020 12:41

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U

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MW-1

20L0441-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 12/29/2020 09:55
Instrument: NT2 Analyst: LH — Analyzed: 12/30/2020 12:41

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*111*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*95.3*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*87.8*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*104*	*%*	

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Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-1

20L0441-01 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM — Sampled: 12/29/2020 09:55
Instrument: NT16 Analyst: PB — Analyzed: 01/11/2021 19:47

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20L0441-01 G
Preparation Batch: BJA0243 — Sample Size: 10 mL
Prepared: 01/11/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*105*	*%*	

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Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-1

20L0441-01 (Water)

Metals and Metallic Compounds

Method: EPA 6010C — Sampled: 12/29/2020 09:55
Instrument: ICP2 Analyst: TCH — Analyzed: 01/07/2021 17:13

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 20L0441-01 F 01
Preparation Batch: BJA0047 — Sample Size: 25 mL
Prepared: 01/05/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	11.1	mg/L	
Potassium	7440-09-7	1	0.500	0.636	mg/L	
Sodium	7440-23-5	1	0.500	4.19	mg/L	

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MW-1

20L0441-01 (Water)

Wet Chemistry

Method: EPA 325.2 — Sampled: 12/29/2020 09:55
Instrument: LACHAT2 Analyst: LRB — Analyzed: 01/08/2021 11:23

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-01 B
Preparation Batch: BJA0177 — Sample Size: 10 mL
Prepared: 01/08/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	4.32	mg/L	

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1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
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MW-1

20L0441-01 (Water)

Wet Chemistry

Method: EPA 353.2 — Sampled: 12/29/2020 09:55
Instrument: [CALC] Analyst: LRB — Analyzed: 01/07/2021 11:34

Sample Preparation: Preparation Method: [CALC]; Preparation Batch: [CALC]; Prepared: 01/06/2021; Final Volume: 1 — Extract ID: 20L0441-01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	0.297	mg/L	

Instrument: Accumet AB150 Analyst: LRB — Analyzed: 12/30/2020 17:42

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BIL0789; Prepared: 12/30/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20L0441-01 B

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	ND	mg/L	U

Instrument: LACHAT2 Analyst: LRB — Analyzed: 01/07/2021 11:34

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BJA0106; Prepared: 01/06/2021; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20L0441-01 D

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	0.297	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
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MW-1

20L0441-01 (Water)

Wet Chemistry

Method: EPA 375.2 — Sampled: 12/29/2020 09:55
Instrument: LACHAT1 Analyst: LRB — Analyzed: 01/06/2021 13:03

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-01 B
Preparation Batch: BJA0095 — Sample Size: 10 mL
Prepared: 01/06/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	2.00	2.00	3.89	mg/L	

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MW-1

20L0441-01 (Water)

Wet Chemistry

Method: EPA 410.4 — Sampled: 12/29/2020 09:55
Instrument: UV1800-1 Analyst: WCW — Analyzed: 01/04/2021 14:18

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-01 E
Preparation Batch: BJA0019 — Sample Size: 2 mL
Prepared: 01/04/2021 — Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	ND	mg/L	U

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MW-1

20L0441-01 (Water)

Wet Chemistry

Method: EPA 9060A — Sampled: 12/29/2020 09:55
Instrument: TOC-LCSH Analyst: BF — Analyzed: 12/30/2020 21:34

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-01 D
Preparation Batch: BIL0779 — Sample Size: 20 mL
Prepared: 12/30/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	ND	mg/L	U

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MW-1

20L0441-01 (Water)

Wet Chemistry

Method: SM 2320 B-97 — Sampled: 12/29/2020 09:55
Instrument: Accumet AB150 Analyst: UW — Analyzed: 12/30/2020 11:32

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-01 B
Preparation Batch: BIL0773 — Sample Size: 50 mL
Prepared: 12/30/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	49.8	mg/L CaCO3	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	49.8	mg/L CaCO3	

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MW-1

20L0441-01 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00 — Sampled: 12/29/2020 09:55
Instrument: Accumet AB150 Analyst: BF — Analyzed: 12/29/2020 18:28

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-01 A
Preparation Batch: BIL0755 — Sample Size: 50 mL
Prepared: 12/29/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	5.91	pH Units	H

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MW-1

20L0441-01 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 12/29/2020 09:55
Instrument: LACHAT1 Analyst: LRB — Analyzed: 01/05/2021 13:44

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-01 E
Preparation Batch: BJA0062 — Sample Size: 10 mL
Prepared: 01/05/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	ND	mg/L	U

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MW-1

20L0441-01 (Water)

Microbiology

Method: SM 9222B — Sampled: 12/29/2020 09:55
Instrument: N/A Analyst: BF — Analyzed: 12/30/2020 17:02

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-01
Preparation Batch: BIL0754 — Sample Size: 100 mL
Prepared: 12/29/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	H, U

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MW-1

20L0441-02 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 — Sampled: 12/29/2020 09:55
Instrument: ICPMS1 Analyst: MCB — Analyzed: 01/08/2021 18:37

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20L0441-02 A 01
Preparation Batch: BJA0179 — Sample Size: 25 mL
Prepared: 01/08/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	1	20.0	ND	ug/L	U

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MW-1

20L0441-02 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 12/29/2020 09:55
Instrument: ICPMS1 Analyst: MCB — Analyzed: 01/08/2021 18:37

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20L0441-02 A 01
Preparation Batch: BJA0179 — Sample Size: 25 mL
Prepared: 01/08/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	4.00	ND	ug/L	U

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x — Extract ID: 20L0441-02 A 03
Preparation Batch: BJA0212 — Sample Size: 100 mL
Prepared: 01/11/2021 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0400	0.0938	ug/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
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MW-1

20L0441-02 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010C — Sampled: 12/29/2020 09:55
Instrument: ICP2 Analyst: TCH — Analyzed: 01/12/2021 15:12

Sample Preparation: Preparation Method: WMN (No Prep) — Extract ID: 20L0441-02 A 02
Preparation Batch: BJA0213 — Sample Size: 25 mL
Prepared: 01/11/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0060	ND	mg/L	U
Manganese, Dissolved	7439-96-5	1	0.0040	ND	mg/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-5A

20L0441-03 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM — Sampled: 12/29/2020 12:20
Instrument: NT16 Analyst: PB — Analyzed: 01/11/2021 20:08

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20L0441-03 C
Preparation Batch: BJA0243 — Sample Size: 10 mL
Prepared: 01/11/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*105*	*%*	

Environmental Partners, Inc.	Project: Olalla Landfill	
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MW-5A

20L0441-03 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 — Sampled: 12/29/2020 12:20
Instrument: ICPMS1 Analyst: MCB — Analyzed: 01/08/2021 18:42

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20L0441-03 B 01
Preparation Batch: BJA0179 — Sample Size: 25 mL
Prepared: 01/08/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	1	20.0	22.8	ug/L	

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MW-5A

20L0441-03 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 12/29/2020 12:20
Instrument: ICPMS1 Analyst: MCB — Analyzed: 01/12/2021 16:20

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x — Extract ID: 20L0441-03 B 03
Preparation Batch: BJA0212 — Sample Size: 100 mL
Prepared: 01/11/2021 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0400	0.206	ug/L	

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MW-5A

20L0441-03 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010C — Sampled: 12/29/2020 12:20
Instrument: ICP2 Analyst: TCH — Analyzed: 01/12/2021 14:23

Sample Preparation: Preparation Method: WMN (No Prep) — Extract ID: 20L0441-03 B 02
Preparation Batch: BJA0213 — Sample Size: 25 mL
Prepared: 01/11/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Manganese, Dissolved	7439-96-5	1	0.0040	ND	mg/L	U

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MW-5A

20L0441-03 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00 — Sampled: 12/29/2020 12:20
Instrument: Accumet AB150 Analyst: BF — Analyzed: 12/29/2020 18:28

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-03 A
Preparation Batch: BIL0755 — Sample Size: 50 mL
Prepared: 12/29/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	6.33	pH Units	H

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MW-3

20L0441-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 12/29/2020 13:05
Instrument: NT2 Analyst: LH — Analyzed: 12/30/2020 13:01

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20L0441-04 H
Preparation Batch: BIL0766 — Sample Size: 10 mL
Prepared: 12/30/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

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MW-3

20L0441-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 12/29/2020 13:05
Instrument: NT2 Analyst: LH — Analyzed: 12/30/2020 13:01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U

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1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-3

20L0441-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 12/29/2020 13:05
Instrument: NT2 Analyst: LH — Analyzed: 12/30/2020 13:01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*117*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*96.2*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*84.2*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*104*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-3

20L0441-04 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM — Sampled: 12/29/2020 13:05
Instrument: NT16 Analyst: PB — Analyzed: 01/11/2021 20:28

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20L0441-04 G
Preparation Batch: BJA0243 — Sample Size: 10 mL
Prepared: 01/11/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*106*	*%*	

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1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-3

20L0441-04 (Water)

Metals and Metallic Compounds

Method: EPA 6010C — Sampled: 12/29/2020 13:05
Instrument: ICP2 Analyst: TCH — Analyzed: 01/07/2021 17:16

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 20L0441-04 F 01
Preparation Batch: BJA0047 — Sample Size: 25 mL
Prepared: 01/05/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	32.2	mg/L	
Potassium	7440-09-7	1	0.500	0.677	mg/L	
Sodium	7440-23-5	1	0.500	6.91	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
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MW-3

20L0441-04 (Water)

Wet Chemistry

Method: EPA 325.2 — Sampled: 12/29/2020 13:05
Instrument: LACHAT2 Analyst: LRB — Analyzed: 01/08/2021 11:27

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-04 A
Preparation Batch: BJA0177 — Sample Size: 10 mL
Prepared: 01/08/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	3.18	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
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MW-3

20L0441-04 (Water)

Wet Chemistry

Method: EPA 353.2 — Sampled: 12/29/2020 13:05
Instrument: [CALC] Analyst: LRB — Analyzed: 01/07/2021 11:37

Sample Preparation: Preparation Method: [CALC]; Preparation Batch: [CALC]; Prepared: 01/06/2021; Final Volume: 1 — Extract ID: 20L0441-04

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	0.0699	mg/L	

Instrument: Accumet AB150 Analyst: LRB — Analyzed: 12/30/2020 17:46

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BIL0789; Prepared: 12/30/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20L0441-04 A

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	ND	mg/L	U

Instrument: LACHAT2 Analyst: LRB — Analyzed: 01/07/2021 11:37

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BJA0106; Prepared: 01/06/2021; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20L0441-04 E

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	0.070	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
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Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-3

20L0441-04 (Water)

Wet Chemistry

Method: EPA 375.2 — Sampled: 12/29/2020 13:05
Instrument: LACHAT1 Analyst: LRB — Analyzed: 01/06/2021 13:04

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-04 A
Preparation Batch: BJA0095 — Sample Size: 10 mL
Prepared: 01/06/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	2.00	2.00	12.3	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
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MW-3

20L0441-04 (Water)

Wet Chemistry

Method: EPA 410.4 — Sampled: 12/29/2020 13:05
Instrument: UV1800-1 Analyst: WCW — Analyzed: 01/04/2021 14:18

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-04 D
Preparation Batch: BJA0019 — Sample Size: 2 mL
Prepared: 01/04/2021 — Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	ND	mg/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
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MW-3

20L0441-04 (Water)

Wet Chemistry

Method: EPA 9060A — Sampled: 12/29/2020 13:05
Instrument: TOC-LCSH Analyst: BF — Analyzed: 12/30/2020 22:00

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-04 E
Preparation Batch: BIL0779 — Sample Size: 20 mL
Prepared: 12/30/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	1.85	mg/L	

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MW-3

20L0441-04 (Water)

Wet Chemistry

Method: SM 2320 B-97 — Sampled: 12/29/2020 13:05
Instrument: Accumet AB150 Analyst: UW — Analyzed: 12/30/2020 11:32

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-04 A
Preparation Batch: BIL0773 — Sample Size: 50 mL
Prepared: 12/30/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	140	mg/L CaCO3	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	140	mg/L CaCO3	

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MW-3

20L0441-04 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00 — Sampled: 12/29/2020 13:05
Instrument: Accumet AB150 Analyst: BF — Analyzed: 12/29/2020 18:28

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-04 A
Preparation Batch: BIL0755 — Sample Size: 50 mL
Prepared: 12/29/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	6.15	pH Units	H

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MW-3

20L0441-04 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 12/29/2020 13:05
Instrument: LACHAT1 Analyst: LRB — Analyzed: 01/05/2021 13:45

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-04 D
Preparation Batch: BJA0062 — Sample Size: 10 mL
Prepared: 01/05/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	ND	mg/L	U

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MW-3

20L0441-04 (Water)

Microbiology

Method: SM 9222B — Sampled: 12/29/2020 13:05
Instrument: N/A Analyst: BF — Analyzed: 12/30/2020 17:02

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-04
Preparation Batch: BIL0754 — Sample Size: 100 mL
Prepared: 12/29/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	U

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MW-3

20L0441-05 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 — Sampled: 12/29/2020 13:05
Instrument: ICPMS1 Analyst: MCB — Analyzed: 01/08/2021 18:46

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20L0441-05 A 01
Preparation Batch: BJA0179 — Sample Size: 25 mL
Prepared: 01/08/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	1	20.0	ND	ug/L	U

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1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-3

20L0441-05 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 12/29/2020 13:05
Instrument: ICPMS1 Analyst: MCB — Analyzed: 01/08/2021 18:46

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20L0441-05 A 01
Preparation Batch: BJA0179 — Sample Size: 25 mL
Prepared: 01/08/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	4.00	ND	ug/L	U

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x — Extract ID: 20L0441-05 A 03
Preparation Batch: BJA0212 — Sample Size: 100 mL
Prepared: 01/11/2021 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	2	0.0800	0.109	ug/L	D

Environmental Partners, Inc.	Project: Olalla Landfill	
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MW-3

20L0441-05 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010C — Sampled: 12/29/2020 13:05
Instrument: ICP2 Analyst: TCH — Analyzed: 01/12/2021 14:26

Sample Preparation: Preparation Method: WMN (No Prep) — Extract ID: 20L0441-05 A 02
Preparation Batch: BJA0213 — Sample Size: 25 mL
Prepared: 01/11/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0060	0.0143	mg/L	
Manganese, Dissolved	7439-96-5	1	0.0040	4.09	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
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MW-10

20L0441-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 12/29/2020 13:45
Instrument: NT2 Analyst: LH — Analyzed: 12/30/2020 13:22

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20L0441-06 H
Preparation Batch: BIL0766 — Sample Size: 10 mL
Prepared: 12/30/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-10

20L0441-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 12/29/2020 13:45
Instrument: NT2 Analyst: LH — Analyzed: 12/30/2020 13:22

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-10

20L0441-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 12/29/2020 13:45
Instrument: NT2 Analyst: LH — Analyzed: 12/30/2020 13:22

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*119*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*95.4*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*84.0*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*108*	*%*	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-10

20L0441-06 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM — Sampled: 12/29/2020 13:45
Instrument: NT16 Analyst: PB — Analyzed: 01/11/2021 20:49

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20L0441-06 G
Preparation Batch: BJA0243 — Sample Size: 10 mL
Prepared: 01/11/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*108*	*%*	

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Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-10

20L0441-06 (Water)

Metals and Metallic Compounds

Method: EPA 6010C — Sampled: 12/29/2020 13:45
Instrument: ICP2 Analyst: TCH — Analyzed: 01/07/2021 17:19

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 20L0441-06 F 01
Preparation Batch: BJA0047 — Sample Size: 25 mL
Prepared: 01/05/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	34.9	mg/L	
Potassium	7440-09-7	1	0.500	1.31	mg/L	
Sodium	7440-23-5	1	0.500	15.5	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
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MW-10

20L0441-06 (Water)

Wet Chemistry

Method: EPA 325.2 — Sampled: 12/29/2020 13:45

Instrument: LACHAT2 Analyst: LRB — Analyzed: 01/08/2021 11:28

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-06 A

Preparation Batch: BJA0177 — Sample Size: 10 mL

Prepared: 01/08/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	6.16	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
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MW-10

20L0441-06 (Water)

Wet Chemistry

Method: EPA 353.2 — Sampled: 12/29/2020 13:45
Instrument: [CALC] Analyst: LRB — Analyzed: 01/07/2021 11:38

Sample Preparation: Preparation Method: [CALC]; Preparation Batch: [CALC]; Prepared: 01/06/2021; Final Volume: 1 — Extract ID: 20L0441-06

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	ND	mg/L	U

Instrument: Accumet AB150 Analyst: LRB — Analyzed: 12/30/2020 17:47

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BIL0789; Prepared: 12/30/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20L0441-06 A

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	ND	mg/L	U

Instrument: LACHAT2 Analyst: LRB — Analyzed: 01/07/2021 11:38

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BJA0106; Prepared: 01/06/2021; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20L0441-06 E

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	0.012	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-10

20L0441-06 (Water)

Wet Chemistry

Method: EPA 375.2 — Sampled: 12/29/2020 13:45

Instrument: LACHAT1 Analyst: LRB — Analyzed: 01/06/2021 13:12

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-06 A

Preparation Batch: BJA0095 — Sample Size: 10 mL

Prepared: 01/06/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	2.00	2.00	7.92	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-10

20L0441-06 (Water)

Wet Chemistry

Method: EPA 410.4 — Sampled: 12/29/2020 13:45

Instrument: UV1800-1 Analyst: WCW — Analyzed: 01/04/2021 14:18

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-06 E

Preparation Batch: BJA0019 — Sample Size: 2 mL

Prepared: 01/04/2021 — Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	ND	mg/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
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MW-10

20L0441-06 (Water)

Wet Chemistry

Method: EPA 9060A — Sampled: 12/29/2020 13:45
Instrument: TOC-LCSH Analyst: BF — Analyzed: 12/30/2020 23:04

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-06 D
Preparation Batch: BIL0779 — Sample Size: 20 mL
Prepared: 12/30/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	2.64	mg/L	

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MW-10

20L0441-06 (Water)

Wet Chemistry

Method: SM 2320 B-97 — Sampled: 12/29/2020 13:45
Instrument: Accumet AB150 Analyst: UW — Analyzed: 12/30/2020 11:32

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-06 A
Preparation Batch: BIL0773 — Sample Size: 50 mL
Prepared: 12/30/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	192	mg/L CaCO3	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	192	mg/L CaCO3	

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20L0441-06 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00 — Sampled: 12/29/2020 13:45
Instrument: Accumet AB150 Analyst: BF — Analyzed: 12/29/2020 18:28

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-06 A
Preparation Batch: BIL0755 — Sample Size: 50 mL
Prepared: 12/29/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	6.48	pH Units	H

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MW-10

20L0441-06 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 12/29/2020 13:45
Instrument: LACHAT1 Analyst: LRB — Analyzed: 01/05/2021 13:54

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-06 E
Preparation Batch: BJA0062 — Sample Size: 10 mL
Prepared: 01/05/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	0.085	mg/L	

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MW-10

20L0441-06 (Water)

Microbiology

Method: SM 9222B — Sampled: 12/29/2020 13:45
Instrument: N/A Analyst: BF — Analyzed: 12/30/2020 17:02

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-06
Preparation Batch: BIL0754 — Sample Size: 100 mL
Prepared: 12/29/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	U

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MW-10

20L0441-07 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 — Sampled: 12/29/2020 13:45
Instrument: ICPMS1 Analyst: MCB — Analyzed: 01/08/2021 18:50

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20L0441-07 A 01
Preparation Batch: BJA0179 — Sample Size: 25 mL
Prepared: 01/08/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	1	20.0	ND	ug/L	U

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MW-10

20L0441-07 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 12/29/2020 13:45
Instrument: ICPMS1 Analyst: MCB — Analyzed: 01/08/2021 18:50

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20L0441-07 A 01
Preparation Batch: BJA0179 — Sample Size: 25 mL
Prepared: 01/08/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	4.00	ND	ug/L	U

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x — Extract ID: 20L0441-07 A 03
Preparation Batch: BJA0212 — Sample Size: 100 mL
Prepared: 01/11/2021 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	10	0.400	2.52	ug/L	D

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MW-10

20L0441-07 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010C — Sampled: 12/29/2020 13:45
Instrument: ICP2 Analyst: TCH — Analyzed: 01/12/2021 14:29

Sample Preparation: Preparation Method: WMN (No Prep) — Extract ID: 20L0441-07 A 02
Preparation Batch: BJA0213 — Sample Size: 25 mL
Prepared: 01/11/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0060	0.0176	mg/L	
Manganese, Dissolved	7439-96-5	1	0.0040	3.74	mg/L	

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20L0441-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 12/29/2020 14:20
Instrument: NT2 Analyst: LH — Analyzed: 12/30/2020 13:43

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20L0441-08 G
Preparation Batch: BIL0766 — Sample Size: 10 mL
Prepared: 12/30/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

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20L0441-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 12/29/2020 14:20
Instrument: NT2 Analyst: LH — Analyzed: 12/30/2020 13:43

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	2.05	ug/L	
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U

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20L0441-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 12/29/2020 14:20
Instrument: NT2 Analyst: LH — Analyzed: 12/30/2020 13:43

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*121*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*93.4*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*83.1*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*106*	*%*	

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20L0441-08 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM — Sampled: 12/29/2020 14:20
Instrument: NT16 Analyst: PB — Analyzed: 01/11/2021 21:09

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20L0441-08 H
Preparation Batch: BJA0243 — Sample Size: 10 mL
Prepared: 01/11/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*106*	*%*	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-6

20L0441-08 (Water)

Metals and Metallic Compounds

Method: EPA 6010C — Sampled: 12/29/2020 14:20
Instrument: ICP2 Analyst: TCH — Analyzed: 01/07/2021 17:21

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 20L0441-08 F 01
Preparation Batch: BJA0047 — Sample Size: 25 mL
Prepared: 01/05/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	34.7	mg/L	
Potassium	7440-09-7	1	0.500	1.61	mg/L	
Sodium	7440-23-5	1	0.500	11.9	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-6

20L0441-08 (Water)

Wet Chemistry

Method: EPA 325.2 — Sampled: 12/29/2020 14:20
Instrument: LACHAT2 Analyst: LRB — Analyzed: 01/08/2021 11:29

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-08 A
Preparation Batch: BJA0177 — Sample Size: 10 mL
Prepared: 01/08/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	3.11	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-6

20L0441-08 (Water)

Wet Chemistry

Method: EPA 353.2 — Sampled: 12/29/2020 14:20
Instrument: [CALC] Analyst: LRB — Analyzed: 01/07/2021 11:40

Sample Preparation: Preparation Method: [CALC]; Preparation Batch: [CALC]; Prepared: 01/06/2021; Final Volume: 1 — Extract ID: 20L0441-08

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	0.0326	mg/L	

Instrument: Accumet AB150 Analyst: LRB — Analyzed: 12/30/2020 17:48

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BIL0789; Prepared: 12/30/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20L0441-08 A

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	ND	mg/L	U

Instrument: LACHAT2 Analyst: LRB — Analyzed: 01/07/2021 11:40

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BJA0106; Prepared: 01/06/2021; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20L0441-08 D

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	0.033	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
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MW-6

20L0441-08 (Water)

Wet Chemistry

Method: EPA 375.2 — Sampled: 12/29/2020 14:20
Instrument: LACHAT1 Analyst: LRB — Analyzed: 01/06/2021 13:13

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-08 A
Preparation Batch: BJA0095 — Sample Size: 10 mL
Prepared: 01/06/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	2.00	2.00	5.81	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-6

20L0441-08 (Water)

Wet Chemistry

Method: EPA 410.4 — Sampled: 12/29/2020 14:20
Instrument: UV1800-1 Analyst: WCW — Analyzed: 01/04/2021 14:19

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-08 E
Preparation Batch: BJA0019 — Sample Size: 2 mL
Prepared: 01/04/2021 — Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	ND	mg/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-6

20L0441-08 (Water)

Wet Chemistry

Method: EPA 9060A — Sampled: 12/29/2020 14:20
Instrument: TOC-LCSH Analyst: BF — Analyzed: 12/30/2020 23:22

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-08 E
Preparation Batch: BIL0779 — Sample Size: 20 mL
Prepared: 12/30/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	1.89	mg/L	

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Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-6

20L0441-08 (Water)

Wet Chemistry

Method: SM 2320 B-97 — Sampled: 12/29/2020 14:20
Instrument: Accumet AB150 Analyst: UW — Analyzed: 12/30/2020 11:32

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-08 A
Preparation Batch: BIL0773 — Sample Size: 50 mL
Prepared: 12/30/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	182	mg/L CaCO3	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	182	mg/L CaCO3	

Environmental Partners, Inc.	Project: Olalla Landfill	
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20L0441-08 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00 — Sampled: 12/29/2020 14:20
Instrument: Accumet AB150 Analyst: BF — Analyzed: 12/29/2020 18:28

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-08 A
Preparation Batch: BIL0755 — Sample Size: 50 mL
Prepared: 12/29/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	6.56	pH Units	H

Environmental Partners, Inc.	Project: Olalla Landfill	
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20L0441-08 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 12/29/2020 14:20
Instrument: LACHAT1 Analyst: LRB — Analyzed: 01/05/2021 13:56

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-08 E
Preparation Batch: BJA0062 — Sample Size: 10 mL
Prepared: 01/05/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	ND	mg/L	U

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20L0441-08 (Water)

Microbiology

Method: SM 9222B — Sampled: 12/29/2020 14:20
Instrument: N/A Analyst: BF — Analyzed: 12/30/2020 17:02

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-08
Preparation Batch: BIL0754 — Sample Size: 100 mL
Prepared: 12/29/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	U

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MW-6

20L0441-09 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 — Sampled: 12/29/2020 14:20
Instrument: ICPMS1 Analyst: MCB — Analyzed: 01/08/2021 18:55

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20L0441-09 A 01
Preparation Batch: BJA0179 — Sample Size: 25 mL
Prepared: 01/08/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	1	20.0	223	ug/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
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MW-6

20L0441-09 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 12/29/2020 14:20
Instrument: ICPMS1 Analyst: MCB — Analyzed: 01/08/2021 18:55

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20L0441-09 A 01
Preparation Batch: BJA0179 — Sample Size: 25 mL
Prepared: 01/08/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	4.00	ND	ug/L	U

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x — Extract ID: 20L0441-09 A 03
Preparation Batch: BJA0212 — Sample Size: 100 mL
Prepared: 01/11/2021 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	2	0.0800	0.310	ug/L	D

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MW-6

20L0441-09 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010C — Sampled: 12/29/2020 14:20
Instrument: ICP2 Analyst: TCH — Analyzed: 01/12/2021 14:32

Sample Preparation: Preparation Method: WMN (No Prep) — Extract ID: 20L0441-09 A 02
Preparation Batch: BJA0213 — Sample Size: 25 mL
Prepared: 01/11/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0060	0.0200	mg/L	
Manganese, Dissolved	7439-96-5	1	0.0040	0.324	mg/L	

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MW-8

20L0441-10 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 12/29/2020 15:05
Instrument: NT2 Analyst: LH — Analyzed: 12/30/2020 14:04

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20L0441-10 H
Preparation Batch: BIL0766 — Sample Size: 10 mL
Prepared: 12/30/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
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20L0441-10 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 12/29/2020 15:05
Instrument: NT2 Analyst: LH — Analyzed: 12/30/2020 14:04

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U

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MW-8

20L0441-10 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 12/29/2020 15:05
Instrument: NT2 Analyst: LH — Analyzed: 12/30/2020 14:04

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*126*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*94.0*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*84.5*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*108*	*%*	

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MW-8

20L0441-10 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM — Sampled: 12/29/2020 15:05
Instrument: NT16 Analyst: PB — Analyzed: 01/11/2021 21:30

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20L0441-10 G
Preparation Batch: BJA0243 — Sample Size: 10 mL
Prepared: 01/11/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*107*	*%*	

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-8

20L0441-10 (Water)

Metals and Metallic Compounds

Method: EPA 6010C — Sampled: 12/29/2020 15:05
Instrument: ICP2 Analyst: TCH — Analyzed: 01/07/2021 17:24

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 20L0441-10 F 01
Preparation Batch: BJA0047 — Sample Size: 25 mL
Prepared: 01/05/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Calcium	7440-70-2	1	0.0500	30.4	mg/L	
Potassium	7440-09-7	1	0.500	1.17	mg/L	
Sodium	7440-23-5	1	0.500	8.95	mg/L	

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Environmental Partners, Inc.	Project: Olalla Landfill	
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Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-8

20L0441-10 (Water)

Wet Chemistry

Method: EPA 325.2 — Sampled: 12/29/2020 15:05
Instrument: LACHAT2 Analyst: LRB — Analyzed: 01/08/2021 11:31

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-10 A
Preparation Batch: BJA0177 — Sample Size: 10 mL
Prepared: 01/08/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloride	16887-00-6	1	1.00	1.00	2.30	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
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MW-8

20L0441-10 (Water)

Wet Chemistry

Method: EPA 353.2 — Sampled: 12/29/2020 15:05
Instrument: [CALC] Analyst: LRB — Analyzed: 01/07/2021 11:46

Sample Preparation: Preparation Method: [CALC]; Preparation Batch: [CALC]; Prepared: 01/06/2021; Final Volume: 1 — Extract ID: 20L0441-10

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	0.175	mg/L	

Instrument: Accumet AB150 Analyst: LRB — Analyzed: 12/30/2020 17:49

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BIL0789; Prepared: 12/30/2020; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20L0441-10 A

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	ND	mg/L	U

Instrument: LACHAT2 Analyst: LRB — Analyzed: 01/07/2021 11:46

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BJA0106; Prepared: 01/06/2021; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 20L0441-10 E

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	0.175	mg/L	

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1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-8

20L0441-10 (Water)

Wet Chemistry

Method: EPA 375.2 — Sampled: 12/29/2020 15:05
Instrument: LACHAT1 Analyst: LRB — Analyzed: 01/06/2021 13:14

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-10 A
Preparation Batch: BJA0095 — Sample Size: 10 mL
Prepared: 01/06/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	2.00	2.00	5.69	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-8

20L0441-10 (Water)

Wet Chemistry

Method: EPA 410.4 — Sampled: 12/29/2020 15:05
Instrument: UV1800-1 Analyst: WCW — Analyzed: 01/04/2021 14:19

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-10 D
Preparation Batch: BJA0019 — Sample Size: 2 mL
Prepared: 01/04/2021 — Final Volume: 2 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
COD		1	10.0	10.0	ND	mg/L	U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
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MW-8

20L0441-10 (Water)

Wet Chemistry

Method: EPA 9060A — Sampled: 12/29/2020 15:05
Instrument: TOC-LCSH Analyst: BF — Analyzed: 12/30/2020 23:40

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-10 E
Preparation Batch: BIL0779 — Sample Size: 20 mL
Prepared: 12/30/2020 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	0.91	mg/L	

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1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
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MW-8

20L0441-10 (Water)

Wet Chemistry

Method: SM 2320 B-97 — Sampled: 12/29/2020 15:05
Instrument: Accumet AB150 Analyst: UW — Analyzed: 12/30/2020 11:32

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-10 A
Preparation Batch: BIL0773 — Sample Size: 50 mL
Prepared: 12/30/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Bicarbonate		1	1.00	1.00	151	mg/L CaCO3	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Carbonate		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Hydroxide		1	1.00	1.00	ND	mg/L CaCO3	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Alkalinity, Total		1	1.00	1.00	151	mg/L CaCO3	

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MW-8

20L0441-10 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00 — Sampled: 12/29/2020 15:05
Instrument: Accumet AB150 Analyst: BF — Analyzed: 12/29/2020 18:28

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-10 A
Preparation Batch: BIL0755 — Sample Size: 50 mL
Prepared: 12/29/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	5.53	pH Units	H

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MW-8

20L0441-10 (Water)

Wet Chemistry

Method: SM 4500-NH3 H-97 — Sampled: 12/29/2020 15:05
Instrument: LACHAT1 Analyst: LRB — Analyzed: 01/05/2021 13:57

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-10 D
Preparation Batch: BJA0062 — Sample Size: 10 mL
Prepared: 01/05/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Ammonia-N	7664-41-7	1	0.040	0.040	ND	mg/L	U

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MW-8

20L0441-10 (Water)

Microbiology

Method: SM 9222B — Sampled: 12/29/2020 15:05
Instrument: N/A Analyst: BF — Analyzed: 12/30/2020 17:02

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-10
Preparation Batch: BIL0754 — Sample Size: 100 mL
Prepared: 12/29/2020 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Coliforms		1	1	1	ND	CFU/100 ml	U

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MW-8

20L0441-11 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 — Sampled: 12/29/2020 15:05
Instrument: ICPMS1 Analyst: MCB — Analyzed: 01/08/2021 18:59

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20L0441-11 A 01
Preparation Batch: BJA0179 — Sample Size: 25 mL
Prepared: 01/08/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	1	20.0	706	ug/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-8

20L0441-11 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 12/29/2020 15:05
Instrument: ICPMS1 Analyst: MCB — Analyzed: 01/08/2021 18:59

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20L0441-11 A 01
Preparation Batch: BJA0179 — Sample Size: 25 mL
Prepared: 01/08/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	1	4.00	ND	ug/L	U

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x — Extract ID: 20L0441-11 A 03
Preparation Batch: BJA0212 — Sample Size: 100 mL
Prepared: 01/11/2021 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	5	0.200	1.60	ug/L	D

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-8

20L0441-11 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010C — Sampled: 12/29/2020 15:05
Instrument: ICP2 Analyst: TCH — Analyzed: 01/12/2021 14:34

Sample Preparation: Preparation Method: WMN (No Prep) — Extract ID: 20L0441-11 A 02
Preparation Batch: BJA0213 — Sample Size: 25 mL
Prepared: 01/11/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Barium, Dissolved	7440-39-3	1	0.0060	0.0080	mg/L	
Manganese, Dissolved	7439-96-5	1	0.0040	2.43	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
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Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

MW-7

20L0441-12 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM — Sampled: 12/29/2020 15:40
Instrument: NT16 Analyst: PB — Analyzed: 01/11/2021 21:51

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20L0441-12 C
Preparation Batch: BJA0243 — Sample Size: 10 mL
Prepared: 01/11/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*106*	*%*	

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MW-7

20L0441-12 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 — Sampled: 12/29/2020 15:40
Instrument: ICPMS1 Analyst: MCB — Analyzed: 01/08/2021 19:04

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 20L0441-12 B 01
Preparation Batch: BJA0179 — Sample Size: 25 mL
Prepared: 01/08/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron, Dissolved	7439-89-6	1	20.0	ND	ug/L	U

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MW-7

20L0441-12 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 12/29/2020 15:40
Instrument: ICPMS1 Analyst: MCB — Analyzed: 01/12/2021 16:45

Sample Preparation: Preparation Method: RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x — Extract ID: 20L0441-12 B 03
Preparation Batch: BJA0212 — Sample Size: 100 mL
Prepared: 01/11/2021 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0400	0.284	ug/L	

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MW-7

20L0441-12 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010C — Sampled: 12/29/2020 15:40
Instrument: ICP2 Analyst: TCH — Analyzed: 01/12/2021 14:37

Sample Preparation: Preparation Method: WMN (No Prep) — Extract ID: 20L0441-12 B 02
Preparation Batch: BJA0213 — Sample Size: 25 mL
Prepared: 01/11/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Manganese, Dissolved	7439-96-5	1	0.0040	ND	mg/L	U

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MW-7

20L0441-12 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00 — Sampled: 12/29/2020 15:40
Instrument: Accumet AB150 Analyst: BF — Analyzed: 12/29/2020 18:28

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 20L0441-12 A
Preparation Batch: BIL0755 — Sample Size: 50 mL
Prepared: 12/29/2020 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	6.70	pH Units	H

Environmental Partners, Inc.	Project: Olalla Landfill	
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Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

Trip Blanks

20L0441-13 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 12/29/2020 09:55
Instrument: NT2 Analyst: LH — Analyzed: 12/30/2020 14:25

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20L0441-13 A
Preparation Batch: BIL0766 — Sample Size: 10 mL
Prepared: 12/30/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

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20L0441-13 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 12/29/2020 09:55
Instrument: NT2 Analyst: LH — Analyzed: 12/30/2020 14:25

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.50	ND	ug/L	U

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Trip Blanks

20L0441-13 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 12/29/2020 09:55
Instrument: NT2 Analyst: LH — Analyzed: 12/30/2020 14:25

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*126*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*96.3*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*83.6*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*106*	*%*	

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Trip Blanks

20L0441-13 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM — Sampled: 12/29/2020 09:55
Instrument: NT16 Analyst: PB — Analyzed: 01/11/2021 18:46

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20L0441-13 B
Preparation Batch: BJA0243 — Sample Size: 10 mL
Prepared: 01/11/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	20.0	ND	ng/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*98.5*	*%*	

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Volatile Organic Compounds - Quality Control

Batch BIL0766 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIL0766-BLK2)			Prepared: 30-Dec-2020 Analyzed: 30-Dec-2020 09:35							
Chloromethane	ND	0.50	ug/L							U
Vinyl Chloride	ND	0.20	ug/L							U
Bromomethane	ND	1.00	ug/L							U
Chloroethane	ND	0.20	ug/L							U
Trichlorofluoromethane	ND	0.20	ug/L							U
Acrolein	ND	5.00	ug/L							U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.20	ug/L							U
Acetone	ND	5.00	ug/L							U
1,1-Dichloroethene	ND	0.20	ug/L							U
Iodomethane	ND	1.00	ug/L							U
Methylene Chloride	ND	1.00	ug/L							U
Acrylonitrile	ND	1.00	ug/L							U
Carbon Disulfide	ND	0.20	ug/L							U
trans-1,2-Dichloroethene	ND	0.20	ug/L							U
Vinyl Acetate	ND	0.20	ug/L							U
1,1-Dichloroethane	ND	0.20	ug/L							U
2-Butanone	ND	5.00	ug/L							U
2,2-Dichloropropane	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Chloroform	ND	0.20	ug/L							U
Bromochloromethane	ND	0.20	ug/L							U
1,1,1-Trichloroethane	ND	0.20	ug/L							U
1,1-Dichloropropene	ND	0.20	ug/L							U
Carbon tetrachloride	ND	0.20	ug/L							U
1,2-Dichloroethane	ND	0.20	ug/L							U
Benzene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
1,2-Dichloropropane	ND	0.20	ug/L							U
Bromodichloromethane	ND	0.20	ug/L							U
Dibromomethane	ND	0.20	ug/L							U
2-Chloroethyl vinyl ether	ND	1.00	ug/L							U
4-Methyl-2-Pentanone	ND	5.00	ug/L							U
cis-1,3-Dichloropropene	ND	0.20	ug/L							U
Toluene	ND	0.20	ug/L							U
trans-1,3-Dichloropropene	ND	0.20	ug/L							U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

Volatile Organic Compounds - Quality Control

Batch BIL0766 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIL0766-BLK2)				Prepared: 30-Dec-2020 Analyzed: 30-Dec-2020 09:35						
2-Hexanone	ND	5.00	ug/L							U
1,1,2-Trichloroethane	ND	0.20	ug/L							U
1,3-Dichloropropane	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Dibromochloromethane	ND	0.20	ug/L							U
1,2-Dibromoethane	ND	0.20	ug/L							U
Chlorobenzene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
1,1,1,2-Tetrachloroethane	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Xylenes, total	ND	0.60	ug/L							U
Styrene	ND	0.20	ug/L							U
Bromoform	ND	0.20	ug/L							U
1,1,2,2-Tetrachloroethane	ND	0.20	ug/L							U
1,2,3-Trichloropropane	ND	0.50	ug/L							U
trans-1,4-Dichloro 2-Butene	ND	1.00	ug/L							U
n-Propylbenzene	ND	0.20	ug/L							U
Bromobenzene	ND	0.20	ug/L							U
Isopropyl Benzene	ND	0.20	ug/L							U
2-Chlorotoluene	ND	0.20	ug/L							U
4-Chlorotoluene	ND	0.20	ug/L							U
t-Butylbenzene	ND	0.20	ug/L							U
1,3,5-Trimethylbenzene	ND	0.20	ug/L							U
1,2,4-Trimethylbenzene	ND	0.20	ug/L							U
s-Butylbenzene	ND	0.20	ug/L							U
4-Isopropyl Toluene	ND	0.20	ug/L							U
1,3-Dichlorobenzene	ND	0.20	ug/L							U
1,4-Dichlorobenzene	ND	0.20	ug/L							U
n-Butylbenzene	ND	0.20	ug/L							U
1,2-Dichlorobenzene	ND	0.20	ug/L							U
1,2-Dibromo-3-chloropropane	ND	0.50	ug/L							U
1,2,4-Trichlorobenzene	ND	0.50	ug/L							U
Hexachloro-1,3-Butadiene	ND	0.50	ug/L							U
Naphthalene	ND	0.50	ug/L							U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

Volatile Organic Compounds - Quality Control

Batch BIL0766 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIL0766-BLK2)				Prepared: 30-Dec-2020 Analyzed: 30-Dec-2020 09:35						
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U
Dichlorodifluoromethane	ND	0.20	ug/L							U
Methyl tert-butyl Ether	ND	0.50	ug/L							U
2-Pentanone	ND	5.00	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5.20		ug/L	*5.00*		*104*	*80-129*			
Surrogate: Toluene-d8	4.84		ug/L	*5.00*		*96.7*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.62		ug/L	*5.00*		*92.5*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.26		ug/L	*5.00*		*105*	*80-120*			
LCS (BIL0766-BS2)				Prepared: 30-Dec-2020 Analyzed: 30-Dec-2020 08:13						
Chloromethane	8.93	0.50	ug/L	10.0		89.3	60-138			
Vinyl Chloride	10.3	0.20	ug/L	10.0		103	66-133			
Bromomethane	11.1	1.00	ug/L	10.0		111	72-131			
Chloroethane	15.5	0.20	ug/L	10.0		155	60-155			Q
Trichlorofluoromethane	8.26	0.20	ug/L	10.0		82.6	62-141			
Acrolein	48.4	5.00	ug/L	50.0		96.8	52-190			
1,1,2-Trichloro-1,2,2-Trifluoroethane	10.4	0.20	ug/L	10.0		104	76-129			
Acetone	45.9	5.00	ug/L	50.0		91.7	58-142			
1,1-Dichloroethene	10.2	0.20	ug/L	10.0		102	69-135			
Iodomethane	9.83	1.00	ug/L	10.0		98.3	56-147			
Methylene Chloride	9.76	1.00	ug/L	10.0		97.6	65-135			
Acrylonitrile	9.44	1.00	ug/L	10.0		94.4	64-134			
Carbon Disulfide	10.4	0.20	ug/L	10.0		104	78-125			
trans-1,2-Dichloroethene	9.73	0.20	ug/L	10.0		97.3	78-128			
Vinyl Acetate	10.6	0.20	ug/L	10.0		106	55-138			
1,1-Dichloroethane	10.1	0.20	ug/L	10.0		101	76-124			
2-Butanone	49.9	5.00	ug/L	50.0		99.8	61-140			
2,2-Dichloropropane	10.3	0.20	ug/L	10.0		103	66-147			
cis-1,2-Dichloroethene	10.5	0.20	ug/L	10.0		105	80-121			
Chloroform	9.78	0.20	ug/L	10.0		97.8	80-122			
Bromochloromethane	10.4	0.20	ug/L	10.0		104	80-121			
1,1,1-Trichloroethane	9.68	0.20	ug/L	10.0		96.8	79-123			
1,1-Dichloropropene	10.7	0.20	ug/L	10.0		107	80-127			
Carbon tetrachloride	9.48	0.20	ug/L	10.0		94.8	53-137			
1,2-Dichloroethane	9.51	0.20	ug/L	10.0		95.1	75-123			

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

Volatile Organic Compounds - Quality Control

Batch BIL0766 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BIL0766-BS2)				Prepared: 30-Dec-2020 Analyzed: 30-Dec-2020 08:13						
Benzene	10.6	0.20	ug/L	10.0		106	80-120			
Trichloroethene	9.79	0.20	ug/L	10.0		97.9	80-120			
1,2-Dichloropropane	10.4	0.20	ug/L	10.0		104	80-120			
Bromodichloromethane	10.0	0.20	ug/L	10.0		100	80-121			
Dibromomethane	10.2	0.20	ug/L	10.0		102	80-120			
2-Chloroethyl vinyl ether	8.46	1.00	ug/L	10.0		84.6	64-116			
4-Methyl-2-Pentanone	54.9	5.00	ug/L	50.0		110	67-133			
cis-1,3-Dichloropropene	10.1	0.20	ug/L	10.0		101	80-124			
Toluene	10.5	0.20	ug/L	10.0		105	80-120			
trans-1,3-Dichloropropene	9.86	0.20	ug/L	10.0		98.6	71-127			
2-Hexanone	51.8	5.00	ug/L	50.0		104	69-133			
1,1,2-Trichloroethane	10.1	0.20	ug/L	10.0		101	80-121			
1,3-Dichloropropane	10.2	0.20	ug/L	10.0		102	80-120			
Tetrachloroethene	10.0	0.20	ug/L	10.0		100	80-120			
Dibromochloromethane	10.0	0.20	ug/L	10.0		100	65-135			
1,2-Dibromoethane	10.7	0.20	ug/L	10.0		107	80-121			
Chlorobenzene	9.68	0.20	ug/L	10.0		96.8	80-120			
Ethylbenzene	9.97	0.20	ug/L	10.0		99.7	80-120			
1,1,1,2-Tetrachloroethane	9.63	0.20	ug/L	10.0		96.3	80-120			
m,p-Xylene	22.2	0.40	ug/L	20.0		111	80-121			
o-Xylene	9.65	0.20	ug/L	10.0		96.5	80-121			
Xylenes, total	31.9	0.60	ug/L	30.0		106	76-127			
Styrene	9.49	0.20	ug/L	10.0		94.9	80-124			
Bromoform	8.11	0.20	ug/L	10.0		81.1	51-134			
1,1,2,2-Tetrachloroethane	9.42	0.20	ug/L	10.0		94.2	77-123			
1,2,3-Trichloropropane	9.61	0.50	ug/L	10.0		96.1	76-125			
trans-1,4-Dichloro 2-Butene	9.82	1.00	ug/L	10.0		98.2	55-129			
n-Propylbenzene	10.5	0.20	ug/L	10.0		105	78-130			
Bromobenzene	9.45	0.20	ug/L	10.0		94.5	80-120			
Isopropyl Benzene	10.6	0.20	ug/L	10.0		106	80-128			
2-Chlorotoluene	10.4	0.20	ug/L	10.0		104	78-122			
4-Chlorotoluene	10.2	0.20	ug/L	10.0		102	80-121			
t-Butylbenzene	9.44	0.20	ug/L	10.0		94.4	78-125			
1,3,5-Trimethylbenzene	11.2	0.20	ug/L	10.0		112	80-129			
1,2,4-Trimethylbenzene	10.6	0.20	ug/L	10.0		106	80-127			

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

Volatile Organic Compounds - Quality Control

Batch BIL0766 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BIL0766-BS2)				Prepared: 30-Dec-2020 Analyzed: 30-Dec-2020 08:13						
s-Butylbenzene	9.85	0.20	ug/L	10.0		98.5	78-129			
4-Isopropyl Toluene	9.53	0.20	ug/L	10.0		95.3	79-130			
1,3-Dichlorobenzene	9.99	0.20	ug/L	10.0		99.9	80-120			
1,4-Dichlorobenzene	9.29	0.20	ug/L	10.0		92.9	80-120			
n-Butylbenzene	9.95	0.20	ug/L	10.0		99.5	74-129			
1,2-Dichlorobenzene	9.49	0.20	ug/L	10.0		94.9	80-120			
1,2-Dibromo-3-chloropropane	9.06	0.50	ug/L	10.0		90.6	62-123			
1,2,4-Trichlorobenzene	8.13	0.50	ug/L	10.0		81.3	64-124			
Hexachloro-1,3-Butadiene	6.74	0.50	ug/L	10.0		67.4	58-123			Q
Naphthalene	8.18	0.50	ug/L	10.0		81.8	50-134			
1,2,3-Trichlorobenzene	8.21	0.50	ug/L	10.0		82.1	49-133			
Dichlorodifluoromethane	9.15	0.20	ug/L	10.0		91.5	48-147			
Methyl tert-butyl Ether	9.55	0.50	ug/L	10.0		95.5	71-132			
2-Pentanone	44.6	5.00	ug/L	50.0		89.2	69-134			
Surrogate: 1,2-Dichloroethane-d4	4.84		ug/L	*5.00*		*96.7*	*80-129*			
Surrogate: Toluene-d8	5.11		ug/L	*5.00*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.01		ug/L	*5.00*		*100*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.04		ug/L	*5.00*		*101*	*80-120*			
LCS Dup (BIL0766-BSD2)				Prepared: 30-Dec-2020 Analyzed: 30-Dec-2020 08:54						
Chloromethane	9.22	0.50	ug/L	10.0		92.2	60-138	3.19	30	
Vinyl Chloride	10.3	0.20	ug/L	10.0		103	66-133	0.11	30	
Bromomethane	10.8	1.00	ug/L	10.0		108	72-131	3.32	30	
Chloroethane	15.7	0.20	ug/L	10.0		157	60-155	1.02	30	*, Q
Trichlorofluoromethane	8.37	0.20	ug/L	10.0		83.7	62-141	1.29	30	
Acrolein	45.0	5.00	ug/L	50.0		89.9	52-190	7.42	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	10.4	0.20	ug/L	10.0		104	76-129	0.36	30	
Acetone	46.6	5.00	ug/L	50.0		93.1	58-142	1.55	30	
1,1-Dichloroethene	9.91	0.20	ug/L	10.0		99.1	69-135	2.79	30	
Iodomethane	9.42	1.00	ug/L	10.0		94.2	56-147	4.21	30	
Methylene Chloride	9.29	1.00	ug/L	10.0		92.9	65-135	4.89	30	
Acrylonitrile	9.72	1.00	ug/L	10.0		97.2	64-134	2.94	30	
Carbon Disulfide	10.2	0.20	ug/L	10.0		102	78-125	2.20	30	
trans-1,2-Dichloroethene	9.23	0.20	ug/L	10.0		92.3	78-128	5.30	30	
Vinyl Acetate	10.7	0.20	ug/L	10.0		107	55-138	0.93	30	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

Volatile Organic Compounds - Quality Control

Batch BIL0766 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BIL0766-BSD2)				Prepared: 30-Dec-2020 Analyzed: 30-Dec-2020 08:54						
1,1-Dichloroethane	9.88	0.20	ug/L	10.0		98.8	76-124	2.32	30	
2-Butanone	50.6	5.00	ug/L	50.0		101	61-140	1.30	30	
2,2-Dichloropropane	10.1	0.20	ug/L	10.0		101	66-147	1.92	30	
cis-1,2-Dichloroethene	10.5	0.20	ug/L	10.0		105	80-121	0.47	30	
Chloroform	9.53	0.20	ug/L	10.0		95.3	80-122	2.63	30	
Bromochloromethane	10.2	0.20	ug/L	10.0		102	80-121	1.26	30	
1,1,1-Trichloroethane	9.34	0.20	ug/L	10.0		93.4	79-123	3.55	30	
1,1-Dichloropropene	10.5	0.20	ug/L	10.0		105	80-127	1.48	30	
Carbon tetrachloride	9.17	0.20	ug/L	10.0		91.7	53-137	3.36	30	
1,2-Dichloroethane	9.31	0.20	ug/L	10.0		93.1	75-123	2.12	30	
Benzene	10.4	0.20	ug/L	10.0		104	80-120	1.87	30	
Trichloroethene	9.67	0.20	ug/L	10.0		96.7	80-120	1.16	30	
1,2-Dichloropropane	9.95	0.20	ug/L	10.0		99.5	80-120	3.94	30	
Bromodichloromethane	9.66	0.20	ug/L	10.0		96.6	80-121	3.65	30	
Dibromomethane	10.1	0.20	ug/L	10.0		101	80-120	0.85	30	
2-Chloroethyl vinyl ether	8.32	1.00	ug/L	10.0		83.2	64-116	1.64	30	
4-Methyl-2-Pentanone	55.1	5.00	ug/L	50.0		110	67-133	0.31	30	
cis-1,3-Dichloropropene	9.80	0.20	ug/L	10.0		98.0	80-124	3.03	30	
Toluene	10.3	0.20	ug/L	10.0		103	80-120	1.46	30	
trans-1,3-Dichloropropene	9.61	0.20	ug/L	10.0		96.1	71-127	2.65	30	
2-Hexanone	52.1	5.00	ug/L	50.0		104	69-133	0.70	30	
1,1,2-Trichloroethane	9.85	0.20	ug/L	10.0		98.5	80-121	2.63	30	
1,3-Dichloropropane	10.1	0.20	ug/L	10.0		101	80-120	1.64	30	
Tetrachloroethene	9.63	0.20	ug/L	10.0		96.3	80-120	4.07	30	
Dibromochloromethane	9.92	0.20	ug/L	10.0		99.2	65-135	0.73	30	
1,2-Dibromoethane	10.3	0.20	ug/L	10.0		103	80-121	3.67	30	
Chlorobenzene	9.52	0.20	ug/L	10.0		95.2	80-120	1.67	30	
Ethylbenzene	9.95	0.20	ug/L	10.0		99.5	80-120	0.13	30	
1,1,1,2-Tetrachloroethane	9.39	0.20	ug/L	10.0		93.9	80-120	2.50	30	
m,p-Xylene	21.8	0.40	ug/L	20.0		109	80-121	1.81	30	
o-Xylene	9.71	0.20	ug/L	10.0		97.1	80-121	0.60	30	
Xylenes, total	31.5	0.60	ug/L	30.0		105	76-127	1.08	30	
Styrene	9.50	0.20	ug/L	10.0		95.0	80-124	0.12	30	
Bromoform	7.94	0.20	ug/L	10.0		79.4	51-134	2.22	30	
1,1,2,2-Tetrachloroethane	9.52	0.20	ug/L	10.0		95.2	77-123	1.14	30	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

Volatile Organic Compounds - Quality Control

Batch BIL0766 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BIL0766-BSD2)				Prepared: 30-Dec-2020 Analyzed: 30-Dec-2020 08:54						
1,2,3-Trichloropropane	9.39	0.50	ug/L	10.0		93.9	76-125	2.28	30	
trans-1,4-Dichloro 2-Butene	8.71	1.00	ug/L	10.0		87.1	55-129	11.90	30	
n-Propylbenzene	10.5	0.20	ug/L	10.0		105	78-130	0.45	30	
Bromobenzene	9.50	0.20	ug/L	10.0		95.0	80-120	0.59	30	
Isopropyl Benzene	10.6	0.20	ug/L	10.0		106	80-128	0.72	30	
2-Chlorotoluene	10.5	0.20	ug/L	10.0		105	78-122	0.36	30	
4-Chlorotoluene	10.4	0.20	ug/L	10.0		104	80-121	2.33	30	
t-Butylbenzene	9.87	0.20	ug/L	10.0		98.7	78-125	4.48	30	
1,3,5-Trimethylbenzene	11.2	0.20	ug/L	10.0		112	80-129	0.22	30	
1,2,4-Trimethylbenzene	10.7	0.20	ug/L	10.0		107	80-127	0.54	30	
s-Butylbenzene	10.6	0.20	ug/L	10.0		106	78-129	7.65	30	
4-Isopropyl Toluene	10.2	0.20	ug/L	10.0		102	79-130	6.26	30	
1,3-Dichlorobenzene	10.1	0.20	ug/L	10.0		101	80-120	0.67	30	
1,4-Dichlorobenzene	9.25	0.20	ug/L	10.0		92.5	80-120	0.42	30	
n-Butylbenzene	11.2	0.20	ug/L	10.0		112	74-129	11.70	30	
1,2-Dichlorobenzene	9.57	0.20	ug/L	10.0		95.7	80-120	0.85	30	
1,2-Dibromo-3-chloropropane	9.70	0.50	ug/L	10.0		97.0	62-123	6.84	30	
1,2,4-Trichlorobenzene	8.58	0.50	ug/L	10.0		85.8	64-124	5.40	30	
Hexachloro-1,3-Butadiene	9.99	0.50	ug/L	10.0		99.9	58-123	38.90	30	*, Q
Naphthalene	8.52	0.50	ug/L	10.0		85.2	50-134	4.05	30	
1,2,3-Trichlorobenzene	8.62	0.50	ug/L	10.0		86.2	49-133	4.93	30	
Dichlorodifluoromethane	9.63	0.20	ug/L	10.0		96.3	48-147	5.12	30	
Methyl tert-butyl Ether	9.34	0.50	ug/L	10.0		93.4	71-132	2.19	30	
2-Pentanone	46.5	5.00	ug/L	50.0		93.0	69-134	4.17	30	
Surrogate: 1,2-Dichloroethane-d4	4.76		ug/L	*5.00*		*95.3*	*80-129*			
Surrogate: Toluene-d8	5.05		ug/L	*5.00*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.17		ug/L	*5.00*		*103*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.10		ug/L	*5.00*		*102*	*80-120*			

Environmental Partners, Inc.	Project: Olalla Landfill	
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Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

Volatile Organic Compounds - SIM - Quality Control

Batch BJA0243 - EPA 5030C (Purge and Trap)

Instrument: NT16 Analyst: PB

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJA0243-BLK1)				Prepared: 11-Jan-2021 Analyzed: 11-Jan-2021 18:25						
Vinyl chloride	ND	20.0	ng/L							U
Surrogate: 1,2-Dichloroethane-d4	5210		ng/L	*5000*		*104*	*80-129*			
LCS (BJA0243-BS1)				Prepared: 11-Jan-2021 Analyzed: 11-Jan-2021 17:23						
Vinyl chloride	3980	20.0	ng/L	4000		99.6	62-141			
Surrogate: 1,2-Dichloroethane-d4	5050		ng/L	*5000*		*101*	*80-129*			
LCS Dup (BJA0243-BSD1)				Prepared: 11-Jan-2021 Analyzed: 11-Jan-2021 17:44						
Vinyl chloride	3710	20.0	ng/L	4000		92.7	62-141	7.20	30	
Surrogate: 1,2-Dichloroethane-d4	5360		ng/L	*5000*		*107*	*80-129*			

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

Metals and Metallic Compounds - Quality Control

Batch BJA0047 - TWC EPA 3010A

Instrument: ICP2 Analyst: TCH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJA0047-BLK1)				Prepared: 05-Jan-2021 Analyzed: 07-Jan-2021 13:12						
Calcium	ND	0.0500	mg/L							U
Potassium	ND	0.500	mg/L							U
Sodium	ND	0.500	mg/L							U
LCS (BJA0047-BS1)				Prepared: 05-Jan-2021 Analyzed: 07-Jan-2021 13:29						
Calcium	10.5	0.0500	mg/L	10.0		105	80-120			
Potassium	9.61	0.500	mg/L	10.0		96.1	80-120			
Sodium	9.78	0.500	mg/L	10.0		97.8	80-120			

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BJA0179 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJA0179-BLK1)				Prepared: 08-Jan-2021 Analyzed: 08-Jan-2021 15:19							
Iron, Dissolved	54	ND	20.0	ug/L							U
Iron, Dissolved	57	ND	20.0	ug/L							U
Zinc, Dissolved	66	ND	4.00	ug/L							U
Zinc, Dissolved	67	ND	4.00	ug/L							U
LCS (BJA0179-BS1)				Prepared: 08-Jan-2021 Analyzed: 08-Jan-2021 15:03							
Iron, Dissolved	54	4880	20.0	ug/L	5000		97.5	80-120			
Iron, Dissolved	57	4810	20.0	ug/L	5000		96.1	80-120			
Zinc, Dissolved	66	81.1	4.00	ug/L	80.0		101	80-120			
Zinc, Dissolved	67	77.1	4.00	ug/L	80.0		96.4	80-120			

Environmental Partners, Inc.	Project: Olalla Landfill	
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Metals and Metallic Compounds (dissolved) - Quality Control

Batch BJA0212 - RHN EPA 600/4-79-020 4.1.4 HNO3 matrix 5x

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJA0212-BLK1)				Prepared: 11-Jan-2021 Analyzed: 12-Jan-2021 16:07							
Arsenic, Dissolved	75a	ND	0.0400	ug/L							U
LCS (BJA0212-BS1)				Prepared: 11-Jan-2021 Analyzed: 12-Jan-2021 16:12							
Arsenic, Dissolved	75a	4.62	0.0400	ug/L	5.00		92.3	80-120			

Environmental Partners, Inc.	Project: Olalla Landfill	
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Metals and Metallic Compounds (dissolved) - Quality Control

Batch BJA0213 - WMN (No Prep)

Instrument: ICP2 Analyst: TCH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJA0213-BLK1)			Prepared: 11-Jan-2021 Analyzed: 12-Jan-2021 14:55							
Barium, Dissolved	ND	0.0060	mg/L							U
Manganese, Dissolved	ND	0.0040	mg/L							U
LCS (BJA0213-BS1)			Prepared: 11-Jan-2021 Analyzed: 12-Jan-2021 15:18							
Barium, Dissolved	2.13	0.0060	mg/L	2.00		107	80-120			
Manganese, Dissolved	0.505	0.0040	mg/L	0.500		101	80-120			
Duplicate (BJA0213-DUP1)	**Source: 20L0441-02**		Prepared: 11-Jan-2021 Analyzed: 12-Jan-2021 15:09							
Barium, Dissolved	ND	0.0060	mg/L		ND					L, U
Manganese, Dissolved	ND	0.0040	mg/L		ND					U
Matrix Spike (BJA0213-MS1)	**Source: 20L0441-02**		Prepared: 11-Jan-2021 Analyzed: 12-Jan-2021 15:15							
Barium, Dissolved	2.17	0.0061	mg/L	2.00	ND	108	75-125			
Manganese, Dissolved	0.510	0.0040	mg/L	0.500	ND	102	75-125			

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

Environmental Partners, Inc.	Project: Olalla Landfill	
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Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

Wet Chemistry - Quality Control

Batch BIL0755 - No Prep Wet Chem

Instrument: Accumet AB150 Analyst: BF

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BIL0755-BS1)				Prepared: 29-Dec-2020 Analyzed: 29-Dec-2020 18:28							
pH	6.98	0.01	0.01	pH Units	7.00		99.7	99.2-100.8			
Duplicate (BIL0755-DUP1)		**Source: 20L0441-01**		Prepared: 29-Dec-2020 Analyzed: 29-Dec-2020 18:28							
pH	5.99	0.01	0.01	pH Units		5.91			1.34	20	H

Environmental Partners, Inc.	Project: Olalla Landfill	
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Wet Chemistry - Quality Control

Batch BIL0773 - No Prep Wet Chem

Instrument: Accumet AB150 Analyst: UW

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIL0773-BLK1)					Prepared: 30-Dec-2020 Analyzed: 30-Dec-2020 11:32						
Alkalinity, Total	ND	1.00	1.00	mg/L CaCO3							U
Duplicate (BIL0773-DUP1)			**Source: 20L0441-01**		Prepared: 30-Dec-2020 Analyzed: 30-Dec-2020 11:32						
Alkalinity, Total	50.4	1.00	1.00	mg/L CaCO3		49.8			1.18	20	
Reference (BIL0773-SRM1)					Prepared: 30-Dec-2020 Analyzed: 30-Dec-2020 11:32						
Alkalinity, Total	102	1.00	1.00	mg/L CaCO3	106		96.6	90.57-107.55			

Environmental Partners, Inc.	Project: Olalla Landfill	
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Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

Wet Chemistry - Quality Control

Batch BIL0779 - No Prep Wet Chem

Instrument: TOC-LCSH Analyst: BF

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIL0779-BLK1)				Prepared: 30-Dec-2020 Analyzed: 30-Dec-2020 19:10							
Total Organic Carbon	ND	0.50	0.50	mg/L							U
LCS (BIL0779-BS1)				Prepared: 30-Dec-2020 Analyzed: 30-Dec-2020 19:35							
Total Organic Carbon	19.85	0.50	0.50	mg/L	20.00		99.3	90-110			

Environmental Partners, Inc.	Project: Olalla Landfill	
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Wet Chemistry - Quality Control

Batch BIL0789 - No Prep Wet Chem

Instrument: Accumet AB150 Analyst: LRB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIL0789-BLK1)				Prepared: 30-Dec-2020 Analyzed: 30-Dec-2020 17:40							
Nitrite-N	ND	0.010	0.010	mg/L							U
LCS (BIL0789-BS1)				Prepared: 30-Dec-2020 Analyzed: 30-Dec-2020 17:41							
Nitrite-N	0.515	0.010	0.010	mg/L	0.500		103	90-110			
Duplicate (BIL0789-DUP1)		**Source: 20L0441-01**		Prepared: 30-Dec-2020 Analyzed: 30-Dec-2020 17:43							
Nitrite-N	ND	0.010	0.010	mg/L		ND					U
Matrix Spike (BIL0789-MS1)		**Source: 20L0441-01**		Prepared: 30-Dec-2020 Analyzed: 30-Dec-2020 17:45							
Nitrite-N	0.497	0.010	0.010	mg/L	0.500	ND	99.4	75-125			

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

Wet Chemistry - Quality Control

Batch BJA0019 - No Prep Wet Chem

Instrument: UV1800-1 Analyst: WCW

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJA0019-BLK1)				Prepared: 04-Jan-2021 Analyzed: 04-Jan-2021 14:15							
COD	ND	10.0	10.0	mg/L							U
LCS (BJA0019-BS1)				Prepared: 04-Jan-2021 Analyzed: 04-Jan-2021 14:15							
COD	104	10.0	10.0	mg/L	100		104	90-110			

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Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

Wet Chemistry - Quality Control

Batch BJA0062 - No Prep Wet Chem

Instrument: LACHAT1 Analyst: LRB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJA0062-BLK1)				Prepared: 05-Jan-2021 Analyzed: 05-Jan-2021 13:35							
Ammonia-N	ND	0.040	0.040	mg/L							U
LCS (BJA0062-BS1)				Prepared: 05-Jan-2021 Analyzed: 05-Jan-2021 13:37							
Ammonia-N	0.482	0.040	0.040	mg/L	0.500		96.4	90-110			

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

Wet Chemistry - Quality Control

Batch BJA0095 - No Prep Wet Chem

Instrument: LACHAT1 Analyst: LRB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJA0095-BLK1)				Prepared: 06-Jan-2021 Analyzed: 06-Jan-2021 12:37							
Sulfate	ND	2.00	2.00	mg/L							U
LCS (BJA0095-BS1)				Prepared: 06-Jan-2021 Analyzed: 06-Jan-2021 12:38							
Sulfate	14.8	2.00	2.00	mg/L	15.0		98.7	90-110			

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
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Wet Chemistry - Quality Control

Batch BJA0106 - No Prep Wet Chem

Instrument: LACHAT2 Analyst: LRB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJA0106-BLK1)				Prepared: 06-Jan-2021 Analyzed: 07-Jan-2021 11:31							
Nitrate + Nitrite as N	ND	0.010	0.010	mg/L							U
LCS (BJA0106-BS1)				Prepared: 06-Jan-2021 Analyzed: 07-Jan-2021 11:32							
Nitrate + Nitrite as N	0.515	0.010	0.010	mg/L	0.500		103	90-110			
Duplicate (BJA0106-DUP1)		**Source: 20L0441-01**		Prepared: 06-Jan-2021 Analyzed: 07-Jan-2021 11:35							
Nitrate + Nitrite as N	0.299	0.010	0.010	mg/L		0.297			0.67	20	
Matrix Spike (BJA0106-MS1)		**Source: 20L0441-01**		Prepared: 06-Jan-2021 Analyzed: 07-Jan-2021 11:36							
Nitrate + Nitrite as N	0.788	0.010	0.010	mg/L	0.500	0.297	98.2	75-125			

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

Wet Chemistry - Quality Control

Batch BJA0177 - No Prep Wet Chem

Instrument: LACHAT2 Analyst: LRB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJA0177-BLK1)				Prepared: 08-Jan-2021 Analyzed: 08-Jan-2021 11:21							
Chloride	ND	1.00	1.00	mg/L							U
LCS (BJA0177-BS1)				Prepared: 08-Jan-2021 Analyzed: 08-Jan-2021 11:22							
Chloride	5.02	1.00	1.00	mg/L	5.00		100	90-110			
Duplicate (BJA0177-DUP1)		**Source: 20L0441-01**		Prepared: 08-Jan-2021 Analyzed: 08-Jan-2021 11:25							
Chloride	4.32	1.00	1.00	mg/L		4.32			0.00		
Matrix Spike (BJA0177-MS1)		**Source: 20L0441-01**		Prepared: 08-Jan-2021 Analyzed: 08-Jan-2021 11:26							
Chloride	9.28	1.00	1.00	mg/L	5.00	4.32	99.2	75-125			

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

Environmental Partners, Inc.	Project: Olalla Landfill	
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Microbiology - Quality Control

Batch BIL0754 - No Prep Wet Chem

Instrument: N/A

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIL0754-BLK1)				Prepared: 29-Dec-2020 Analyzed: 30-Dec-2020 17:02							
Total Coliforms	ND	1	1	CFU/100 ml							U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.8 in Water	
Iron-54	WADOE,DoD-ELAP
Iron-54	NELAP,DoD-ELAP
Iron-54	NELAP,WADOE,DoD-ELAP
Iron-54	NELAP,WADOE,DoD-ELAP
Iron-57	NELAP,WADOE,DoD-ELAP
Iron-57	WADOE,DoD-ELAP
Iron-57	NELAP,DoD-ELAP
Iron-57	NELAP,WADOE,DoD-ELAP
EPA 200.8 UCT-KED in Water	
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Arsenic-75a	NELAP,WADOE,DoD-ELAP
Arsenic-75a	NELAP,WA-DW,DoD-ELAP
Arsenic-75a	WADOE,WA-DW,DoD-ELAP
Zinc-66	NELAP,WADOE,WA-DW,DoD-ELAP
Zinc-66	WADOE,WA-DW,DoD-ELAP
Zinc-66	NELAP,WA-DW,DoD-ELAP
Zinc-66	NELAP,WADOE,DoD-ELAP
Zinc-67	NELAP,WA-DW,DoD-ELAP
Zinc-67	WADOE,WA-DW,DoD-ELAP
Zinc-67	NELAP,WADOE,DoD-ELAP
Zinc-67	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 353.2 in Water	
Nitrate + Nitrite as N	NELAP,DoD-ELAP,WADOE
Nitrate + Nitrite as N	NELAP,DoD-ELAP
Nitrate + Nitrite as N	DoD-ELAP,WADOE
Nitrate + Nitrite as N	NELAP,DoD-ELAP,WADOE
Nitrite-N	WADOE,NELAP,DoD-ELAP
Nitrite-N	WADOE,NELAP,DoD-ELAP
Nitrite-N	NELAP,DoD-ELAP
Nitrite-N	WADOE,DoD-ELAP
EPA 375.2 in Water	
Sulfate	NELAP
Sulfate	WADOE
Sulfate	WADOE,NELAP

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Sulfate	WADOE,NELAP
EPA 410.4 in Water	
COD	DoD-ELAP,NELAP,WADOE
COD	DoD-ELAP,NELAP,WADOE
COD	DoD-ELAP,NELAP
COD	DoD-ELAP,WADOE
EPA 6010C in Water	
Calcium	NELAP,DoD-ELAP
Calcium	WADOE,DoD-ELAP
Calcium	WADOE,NELAP,DoD-ELAP
Calcium	WADOE,NELAP,DoD-ELAP
Potassium	WADOE,NELAP,DoD-ELAP
Potassium	WADOE,NELAP,DoD-ELAP
Potassium	WADOE,DoD-ELAP
Potassium	NELAP,DoD-ELAP
Sodium	DoD-ELAP,WADOE,NELAP
Sodium	DoD-ELAP,NELAP
Sodium	DoD-ELAP,WADOE
Sodium	DoD-ELAP,WADOE,NELAP
Sodium-1	DoD-ELAP
Sodium-1	DoD-ELAP
Sodium-1	DoD-ELAP
Sodium-1	DoD-ELAP
Barium	NELAP,DoD-ELAP
Barium	WADOE,NELAP,DoD-ELAP
Barium	WADOE,DoD-ELAP
Barium	WADOE,NELAP,DoD-ELAP
Manganese	WADOE,NELAP,DoD-ELAP
Manganese	WADOE,DoD-ELAP
Manganese	NELAP,DoD-ELAP
Manganese	WADOE,NELAP,DoD-ELAP
EPA 8260D in Water	
Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Chloromethane	DoD-ELAP,ADEC,NELAP,CALAP
Chloromethane	DoD-ELAP,ADEC,CALAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,CALAP

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Vinyl Chloride	DoD-ELAP,ADEC,CALAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,CALAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,CALAP
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Chloroethane	DoD-ELAP,ADEC,CALAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,CALAP
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,CALAP
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,CALAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Acrolein	DoD-ELAP,CALAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,CALAP
Acrolein	DoD-ELAP,NELAP,CALAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,CALAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,CALAP
Acetone	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,CALAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE
Iodomethane	DoD-ELAP,CALAP,WADOE
Iodomethane	DoD-ELAP,NELAP,CALAP,WADOE
Iodomethane	DoD-ELAP,NELAP,CALAP
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,CALAP
Methylene Chloride	DoD-ELAP,ADEC,CALAP,WADOE
Acrylonitrile	DoD-ELAP,CALAP,WADOE

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Acrylonitrile	DoD-ELAP,NELAP,CALAP
Acrylonitrile	DoD-ELAP,NELAP,CALAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,CALAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,CALAP
Carbon Disulfide	DoD-ELAP,CALAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,CALAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,CALAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,CALAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,CALAP
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1-Dichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,CALAP,WADOE
2-Butanone	DoD-ELAP,NELAP,CALAP
2-Butanone	DoD-ELAP,NELAP,CALAP,WADOE
2-Butanone	DoD-ELAP,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,CALAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,CALAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,CALAP
Chloroform	DoD-ELAP,ADEC,CALAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP
Bromochloromethane	DoD-ELAP,ADEC,CALAP,WADOE

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1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP
1,1-Dichloropropene	DoD-ELAP,ADEC,CALAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,CALAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,CALAP
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP
Benzene	DoD-ELAP,ADEC,NELAP,CALAP
Benzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Benzene	DoD-ELAP,ADEC,CALAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,CALAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,CALAP
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,CALAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,CALAP
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,CALAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,CALAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,CALAP
Dibromomethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,CALAP

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2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,CALAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,CALAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,CALAP
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,CALAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,CALAP,WADOE
Toluene	DoD-ELAP,ADEC,CALAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,CALAP
Toluene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,CALAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
2-Hexanone	DoD-ELAP,CALAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,CALAP
2-Hexanone	DoD-ELAP,NELAP,CALAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP
1,3-Dichloropropane	DoD-ELAP,ADEC,CALAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,CALAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,CALAP
Dibromochloromethane	DoD-ELAP,ADEC,CALAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,CALAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,CALAP

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1,2-Dibromoethane	DoD-ELAP,NELAP,CALAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
Chlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,CALAP
Ethylbenzene	DoD-ELAP,ADEC,CALAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,CALAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,CALAP
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,CALAP
o-Xylene	DoD-ELAP,ADEC,CALAP,WADOE
Styrene	DoD-ELAP,NELAP,CALAP
Styrene	DoD-ELAP,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,CALAP,WADOE
Styrene	DoD-ELAP,CALAP,WADOE
Bromoform	DoD-ELAP,NELAP,CALAP,WADOE
Bromoform	DoD-ELAP,NELAP,CALAP
Bromoform	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,CALAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,CALAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,CALAP
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE

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trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,CALAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,CALAP
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,CALAP
n-Propylbenzene	DoD-ELAP,CALAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,CALAP,WADOE
Bromobenzene	DoD-ELAP,CALAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,CALAP
Isopropyl Benzene	DoD-ELAP,NELAP,CALAP
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,CALAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,CALAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP
2-Chlorotoluene	DoD-ELAP,ADEC,CALAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP
4-Chlorotoluene	DoD-ELAP,ADEC,CALAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,CALAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,CALAP
t-Butylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,CALAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,CALAP
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,CALAP
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,CALAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,CALAP
s-Butylbenzene	DoD-ELAP,CALAP,WADOE

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4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,CALAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,CALAP
4-Isopropyl Toluene	DoD-ELAP,CALAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,CALAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,CALAP
n-Butylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,2-Dichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,CALAP
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,CALAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,CALAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,CALAP
Naphthalene	DoD-ELAP,ADEC,CALAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,CALAP
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE

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1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,CALAP
Dichlorodifluoromethane	DoD-ELAP,ADEC,CALAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,CALAP
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,CALAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
n-Hexane	WADOE
n-Hexane	WADOE
n-Hexane	WADOE
n-Hexane	
2-Pentanone	WADOE
2-Pentanone	WADOE
2-Pentanone	WADOE
2-Pentanone	

EPA 8260D-SIM in Water

Acrylonitrile	NELAP,CALAP
Acrylonitrile	CALAP,WADOE
Acrylonitrile	NELAP,WADOE
Acrylonitrile	NELAP,CALAP,WADOE
Vinyl chloride	CALAP,WADOE
Vinyl chloride	NELAP,CALAP
Vinyl chloride	NELAP,CALAP,WADOE
Vinyl chloride	NELAP,WADOE
1,1-Dichloroethene	NELAP,CALAP,WADOE
1,1-Dichloroethene	NELAP,WADOE
1,1-Dichloroethene	NELAP,CALAP
1,1-Dichloroethene	CALAP,WADOE
cis-1,2-Dichloroethene	NELAP,CALAP
cis-1,2-Dichloroethene	NELAP,CALAP,WADOE
cis-1,2-Dichloroethene	CALAP,WADOE
cis-1,2-Dichloroethene	NELAP,WADOE
trans-1,2-Dichloroethene	NELAP,CALAP,WADOE
trans-1,2-Dichloroethene	CALAP,WADOE
trans-1,2-Dichloroethene	NELAP,WADOE
trans-1,2-Dichloroethene	NELAP,CALAP
Trichloroethene	CALAP,WADOE

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Trichloroethene	NELAP,CALAP
Trichloroethene	NELAP,CALAP,WADOE
Trichloroethene	NELAP,WADOE
Tetrachloroethene	NELAP,WADOE
Tetrachloroethene	CALAP,WADOE
Tetrachloroethene	NELAP,CALAP
Tetrachloroethene	NELAP,CALAP,WADOE
1,1,2,2-Tetrachloroethane	NELAP,WADOE
1,1,2,2-Tetrachloroethane	CALAP,WADOE
1,1,2,2-Tetrachloroethane	NELAP,CALAP
1,1,2,2-Tetrachloroethane	NELAP,CALAP,WADOE
1,2-Dichloroethane	NELAP,CALAP,WADOE
1,2-Dichloroethane	NELAP,CALAP
1,2-Dichloroethane	CALAP,WADOE
1,2-Dichloroethane	NELAP,WADOE
Benzene	NELAP,CALAP
Benzene	CALAP,WADOE
Benzene	NELAP,CALAP,WADOE
Benzene	NELAP,WADOE
EPA 9060A in Water	
Total Organic Carbon	DoD-ELAP,WADOE,NELAP
Total Organic Carbon	DoD-ELAP,WADOE,NELAP
Total Organic Carbon	DoD-ELAP,NELAP
Total Organic Carbon	DoD-ELAP,WADOE
SM 2320 B-97 in Water	
Alkalinity, Bicarbonate	NELAP,WA-DW,DoD-ELAP
Alkalinity, Bicarbonate	NELAP,WADOE,WA-DW,DoD-ELAP
Alkalinity, Bicarbonate	WADOE,WA-DW,DoD-ELAP
Alkalinity, Bicarbonate	NELAP,WADOE,DoD-ELAP
Alkalinity, Carbonate	WADOE,DoD-ELAP,NELAP
Alkalinity, Carbonate	WADOE,WA-DW,DoD-ELAP
Alkalinity, Carbonate	WADOE,WA-DW,DoD-ELAP,NELAP
Alkalinity, Carbonate	WA-DW,DoD-ELAP,NELAP
Alkalinity, Hydroxide	WADOE,WA-DW,DoD-ELAP,NELAP
Alkalinity, Hydroxide	WADOE,WA-DW,DoD-ELAP
Alkalinity, Hydroxide	WA-DW,DoD-ELAP,NELAP
Alkalinity, Hydroxide	WADOE,DoD-ELAP,NELAP
Alkalinity, Total	DoD-ELAP,WA-DW,NELAP
Alkalinity, Total	DoD-ELAP,WADOE,NELAP

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

Alkalinity, Total	DoD-ELAP,WADOE,WA-DW
Alkalinity, Total	DoD-ELAP,WADOE,WA-DW,NELAP

SM 4500-H+ B-00 in Water

pH	NELAP,WA-DW
pH	WADOE,WA-DW
pH	WADOE,NELAP,WA-DW
pH	WADOE,NELAP

SM 4500-NH3 H-97 in Water

Ammonia-N	DoD-ELAP,NELAP
Ammonia-N	WADOE,DoD-ELAP
Ammonia-N	WADOE,DoD-ELAP,NELAP
Ammonia-N	WADOE,DoD-ELAP,NELAP

SM 9222B in Water

Total Coliforms	WADOE
Total Coliforms	
Total Coliforms	WADOE
Total Coliforms	WADOE

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	01/31/2021
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	01/01/2021

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	14-Jan-2021 14:26

Notes and Definitions

*	Flagged value is not within established control limits.
B	This analyte was detected in the method blank.
D	The reported value is from a dilution
H	Hold time violation - Hold time was exceeded.
J	Estimated concentration value detected below the reporting limit.
L	Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to +/- RL instead of 20% RPD
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

15 February 2021

Doug Kunkel
Environmental Partners, Inc.
1180 NW Maple St., Suite 310
Issaquah, WA 98027

RE: Olalla Landfill

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

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

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

Associated Work Order(s)	Associated SDG ID(s)
21B0008	N/A

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

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

Analytical Resources, Inc.

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

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21B0008	Turn-around Requested: Standard	Page: 1 of 1	
ARI Client Company: TRC	Phone: (425) 395-0010	Date: 2/1/21	Ice Present? Yes
Client Contact: Doug Kunkel DKunkel@trccompanies.com		No. of Coolers: 1	Cooler Temps: 5.7
Client Project Name: Olalla Landfill			
Client Project #: 382595	Samplers: Nate Dorfner		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: pH	Nitrate - Nitrogen	Fecal Coliform						Notes/Comments
SW-2	2/1/21	1015	H_2O	3	X	X	X						

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: NATE DORFNER	Printed Name: Jacob Lalter	Printed Name:	Printed Name:
	Company: TRC	Company: ARI	Company:	Company:
	Date & Time: 2/1/21 1200	Date & Time: 02/01/2021 1200	Date & Time:	Date & Time:

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: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	15-Feb-2021 16:38

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SW-2	21B0008-01	Water	01-Feb-2021 10:15	01-Feb-2021 12:00

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Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	15-Feb-2021 16:38

Work Order Case Narrative

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times except pH. The pH holding time was exceeded upon sample receipt.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Sample specific QC was performed in association with sample 21B0008-01 in pH batch BJB0032, Nitrite batch BJB0080 and Nitrate+Nitrite batch BJB0116. The duplicate (DUP) relative percent difference (RPD) were within advisory control limits. The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and RPD were within advisory control limits.

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WORK ORDER

21B0008

Client: Environmental Partners, Inc. | **Project Manager:** Kelly Bottem

Project: Olalla Landfill | **Project Number:** 382595

Report To:
Environmental Partners, Inc.
Doug Kunkel
1180 NW Maple St., Suite 310
Issaquah, WA 98027
Phone: 425-395-0010
Fax: -

Invoice To:
Environmental Partners, Inc.
Doug Kunkel
1180 NW Maple St., Suite 310
Issaquah, WA 98027
Phone :425-395-0010
Fax: -

Date Due: 15-Feb-2021 18:00 (10 day TAT)

Received By: Jacob Walter | Date Received: 01-Feb-2021 12:00

Logged In By: Jacob Walter | Date Logged In: 01-Feb-2021 12:37

Samples Received at: **5.7°C**

Intact, properly signed and dated custody seals attached to outside of cooler(s)	No	Custody papers included with the cooler	Yes
Custody papers properly filled out (in, signed, analyses requested, etc)	Yes	Was a temperature blank included in the cooler	No
Was sufficient ice used (if appropriate)	Yes	All bottles sealed in individual plastic bags	No
All bottles arrived in good condition (unbroken)	Yes	All bottle labels complete and legible	Yes
Number of containers listed on COC match number received	Yes	Bottle labels and tags agree with COC	Yes
Correct bottles used for the requested analyses	Yes	All VOC vials free of air bubbles	No
Analyses/bottles require preservation (attach preservation sheet excluding VOC)	Yes	Sufficient amount of sample sent in each bottle	Yes
Sample split at ARI	No		

21B0008-01 SW-2 [Water] Sampled 01-Feb-2021 10:15

Coliform, Fecal (MF) SM 9222D	02/15/2021	10	02/01/2021
Nitrate + Nitrite-N, EPA 353.2	02/15/2021	10	03/01/2021
Nitrate-N Calc EPA 353.2	02/15/2021	10	02/03/2021
pH, SM 4500-H	02/15/2021	10	02/01/2021
Nitrite-N, EPA 353.2	02/15/2021	10	02/03/2021

Analysis groups included in this work order

Nitrate-N Calc EPA 353.2

Nitrite-N, EPA 353.2 Nitrate + Nitrite-N, EPA 353.2

Preservation Confirmation

Container ID	Container Type	pH	
21B0008-01 A	Small OJ, 500 mL	72	Fail
21B0008-01 B	Small OJ, 500 mL		
21B0008-01 C	Corning Plastic, 125 mL, Na2S2O3		

JG
Preservation Confirmed By

02/01/2021
Date

Reviewed By

Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: TRC

Project Name: Olalla Landfill

COC No(s): _____ NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 21B0008

Tracking No: _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the 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 1200 — 5.7 _____ _____ _____ _____ _____

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: DOO 006

Cooler Accepted by: JS Date: 02/01/2021 Time: 1200

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
How were bottles sealed in plastic bags?	Individually	Grouped	Not
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	_____	

Were the sample(s) split by ARI? NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: JS Date: 02/01/2021 Time: 1236 Labels checked by: JS

*** 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:

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	15-Feb-2021 16:38

SW-2

21B0008-01 (Water)

Wet Chemistry

Method: EPA 353.2 — Sampled: 02/01/2021 10:15
Instrument: [CALC] Analyst: LRB — Analyzed: 02/04/2021 10:42

Sample Preparation: Preparation Method: [CALC]; Preparation Batch: [CALC]; Prepared: 02/03/2021; Final Volume: 1 — Extract ID: 21B0008-01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.0200	ND	mg/L	U

Instrument: LACHAT2 Analyst: LRB — Analyzed: 02/02/2021 16:53

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BJB0080; Prepared: 02/02/2021; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 21B0008-01 B

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.010	0.010	ND	mg/L	U

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BJB0116; Prepared: 02/03/2021; Sample Size: 10 mL; Final Volume: 10 mL — Extract ID: 21B0008-01 A

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate + Nitrite as N		1	0.010	0.010	0.012	mg/L	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	15-Feb-2021 16:38

SW-2

21B0008-01 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00 — Sampled: 02/01/2021 10:15
Instrument: Accumet AB150 Analyst: BF — Analyzed: 02/01/2021 15:56

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21B0008-01 B
Preparation Batch: BJB0032 — Sample Size: 50 mL
Prepared: 02/01/2021 — Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	6.35	pH Units	H

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	15-Feb-2021 16:38

SW-2

21B0008-01 (Water)

Microbiology

Method: SM 9222D — Sampled: 02/01/2021 10:15

Instrument: N/A Analyst: UW — Analyzed: 02/02/2021 14:40

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21B0008-01

Preparation Batch: BJB0040 — Sample Size: 75 mL

Prepared: 02/01/2021 — Final Volume: 100 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Fecal Coliforms		1	1	1	31	CFU/100 ml	

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	15-Feb-2021 16:38

Wet Chemistry - Quality Control

Batch BJB0032 - No Prep Wet Chem

Instrument: Accumet AB150 Analyst: BF

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJB0032-BS1)				Prepared: 01-Feb-2021 Analyzed: 01-Feb-2021 15:56							
pH	6.98	0.01	0.01	pH Units	7.00		99.7	99.2-100.8			
Duplicate (BJB0032-DUP1)		**Source: 21B0008-01**		Prepared: 01-Feb-2021 Analyzed: 01-Feb-2021 15:56							
pH	6.42	0.01	0.01	pH Units		6.35			1.10	20	H

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	15-Feb-2021 16:38

Wet Chemistry - Quality Control

Batch BJB0080 - No Prep Wet Chem

Instrument: LACHAT2 Analyst: LRB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0080-BLK1)					Prepared: 02-Feb-2021 Analyzed: 02-Feb-2021 16:51						
Nitrite-N	ND	0.010	0.010	mg/L							U
LCS (BJB0080-BS1)					Prepared: 02-Feb-2021 Analyzed: 02-Feb-2021 16:52						
Nitrite-N	0.488	0.010	0.010	mg/L	0.500		97.6	90-110			
Duplicate (BJB0080-DUP1)		**Source: 21B0008-01**			Prepared: 02-Feb-2021 Analyzed: 02-Feb-2021 16:54						
Nitrite-N	ND	0.010	0.010	mg/L		ND					U
Matrix Spike (BJB0080-MS1)		**Source: 21B0008-01**			Prepared: 02-Feb-2021 Analyzed: 02-Feb-2021 16:55						
Nitrite-N	0.502	0.010	0.010	mg/L	0.500	ND	100	75-125			

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

Matrix Spike Dup (BJB0080-MSD1)		**Source: 21B0008-01**			Prepared: 02-Feb-2021 Analyzed: 02-Feb-2021 16:57						
Nitrite-N	0.500	0.010	0.010	mg/L	0.500	ND	100	75-125	0.40	20	

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

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	15-Feb-2021 16:38

Wet Chemistry - Quality Control

Batch BJB0116 - No Prep Wet Chem

Instrument: LACHAT2 Analyst: LRB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0116-BLK1)					Prepared: 03-Feb-2021 Analyzed: 04-Feb-2021 10:40						
Nitrate + Nitrite as N	ND	0.010	0.010	mg/L							U
LCS (BJB0116-BS1)					Prepared: 03-Feb-2021 Analyzed: 04-Feb-2021 10:41						
Nitrate + Nitrite as N	0.515	0.010	0.010	mg/L	0.500		103	90-110			
Duplicate (BJB0116-DUP1)		**Source: 21B0008-01**			Prepared: 03-Feb-2021 Analyzed: 04-Feb-2021 10:43						
Nitrate + Nitrite as N	0.010	0.010	0.010	mg/L		0.012			15.10	20	
Matrix Spike (BJB0116-MS1)		**Source: 21B0008-01**			Prepared: 03-Feb-2021 Analyzed: 04-Feb-2021 10:45						
Nitrate + Nitrite as N	0.480	0.010	0.010	mg/L	0.500	0.012	93.6	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BJB0116-MSD1)		**Source: 21B0008-01**			Prepared: 03-Feb-2021 Analyzed: 04-Feb-2021 10:46						
Nitrate + Nitrite as N	0.482	0.010	0.010	mg/L	0.500	0.012	94.0	75-125	0.42	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	15-Feb-2021 16:38

Microbiology - Quality Control

Batch BJB0040 - No Prep Wet Chem

Instrument: N/A

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0040-BLK1)				Prepared: 01-Feb-2021 Analyzed: 02-Feb-2021 14:40							
Fecal Coliforms	ND	1	1	CFU/100 ml							U

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	15-Feb-2021 16:38

Certified Analyses included in this Report

Analyte	Certifications
EPA 353.2 in Water	
Nitrate + Nitrite as N	NELAP,DoD-ELAP,WADOE
Nitrate + Nitrite as N	NELAP,DoD-ELAP,WADOE
Nitrate + Nitrite as N	NELAP,DoD-ELAP,WADOE
Nitrate + Nitrite as N	DoD-ELAP,WADOE
Nitrate + Nitrite as N	NELAP,DoD-ELAP
Nitrite-N	WADOE,NELAP,DoD-ELAP
Nitrite-N	NELAP,DoD-ELAP
Nitrite-N	WADOE,DoD-ELAP
Nitrite-N	WADOE,NELAP,DoD-ELAP
Nitrite-N	WADOE,NELAP,DoD-ELAP
SM 4500-H+ B-00 in Water	
pH	WADOE,NELAP
pH	WADOE,NELAP,WA-DW
pH	WADOE,NELAP,WA-DW
pH	WADOE,WA-DW
pH	NELAP,WA-DW
SM 9222D in Water	
Fecal Coliforms	WADOE
Fecal Coliforms	WADOE
Fecal Coliforms	
Fecal Coliforms	WADOE
Fecal Coliforms	WADOE

Code	Description	Number	Expires
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/28/2022

Environmental Partners, Inc.	Project: Olalla Landfill	
1180 NW Maple St., Suite 310	Project Number: 382595	**Reported:**
Issaquah WA, 98027	Project Manager: Doug Kunkel	15-Feb-2021 16:38

Notes and Definitions

H	Hold time violation - Hold time was exceeded.
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.