

August 27, 2021  
File No. 04221002.03

Andrew Smith, PE, LHG  
Washington Department of Ecology  
Toxics Cleanup Program  
PO Box 47775  
Olympia, WA 98504-7775

Subject: **Semi-Annual Monitoring Report – January through June 2021  
Hidden Valley Landfill, Pierce County, Washington**

Dear Andrew:

The following report provides a summary of monitoring activities performed at the closed Hidden Valley Landfill (HVL) during the semi-annual monitoring period of January through June of 2021. Site activities conducted during this period included groundwater monitoring, landfill gas monitoring, site inspections and maintenance, and recording of leachate volumes.

## Groundwater Monitoring

Semi-Annual Groundwater Monitoring Event No. 1 was conducted on January 19 through 21, 2021. Field activities performed for the monitoring event were consistent with the procedures described in the HVL Groundwater Monitoring Plan (GWMP) dated October 18, 2018. As stated in the GWMP, Appendix I total metals are to be analyzed at all monitoring locations every 5 years beginning in 2021. Therefore, additional samples were collected for Appendix I total metals during this event.

Groundwater elevation measurements were collected on January 20, 2021. Groundwater potentiometric surface maps for the shallow perched aquifer, upper regional aquifer, and the lower regional aquifer are shown on Figure 1 through Figure 3, respectively.

Low-flow sampling techniques using dedicated pumps were employed to purge and collect samples from each monitoring well, except MW-12S, which was sampled with a disposable bailer. Field quality control samples consisted of one duplicate sample, one field blank, and two trip blanks. Water supply well samples were collected at Corliss Resources, Inc. (WS-Corliss) and the Paul Bunyan Rifle & Sportsman Club (WS-Paul Bunyan). Leachate and leak detection samples were collected from the east liner area leachate sump (Cell 1), side-slope liner leachate sump (Cell 2), side-slope liner leak detection system, and the east liner area hydraulic gradient control system. Samples were shipped to TestAmerica Laboratories, Inc. in Denver, Colorado via FedEx at the end of each field day.

Groundwater results were reviewed and validated (see enclosed Data Validation Report). Field measurements and analytical data were uploaded into the Washington State Department of Ecology (Ecology) Environmental Information Management (EIM) System. Laboratory reports were provided to Ecology and the Tacoma-Pierce County Health Department (TPCHD) under separate cover.

Field measurements and laboratory analytical results for this semi-annual monitoring event are summarized on the following tables: Table 1 – Main Sump and Side Slope Liner Area Performance

Data, Table 2 – Water Level Elevations, Table 3 – Field Parameters, Table 4 – Inorganic Parameters, Table 5 – Dissolved Metals, Table 6 – Appendix I Total Metals, Table 7 – Volatile Organic Compounds (VOC's), Table 8 – Duplicate Sample Evaluation, Table 9 – Water Supply Wells, Table 10 – Cation-Anion Balance, and Table 11 – Leachate.

The majority of the monitoring well samples displayed pH values less than the WAC 173-200 lower-level criteria of 6.5 pH units. Since the pH values at both background wells (MW-10S and MW-10D) were also less than 6.5, these values are interpreted to be the result of natural background water quality.

Nitrate concentrations were below the site cleanup level of 10 mg/L, except at wells MW-12S (15 mg/L), MW-17S (24 mg/L) and FMMW-2 (11 mg/L). Due to a Fedex shipping delay, several samples were analyzed outside of the recommended 48-hour holding time for nitrate using Method 300.0. These results are denoted with an “H” on the summary data tables. The reported concentrations of nitrate at MW-12S, MW-17S and FMMW-2 are typical of previous results during the wet season.

Dissolved manganese concentrations exceeded the site cleanup level of 0.05 mg/L at six monitoring wells (MW-15S, MW-17S, MW-29S, MW-14D, MW-14R, and MW-26R). Dissolved iron concentrations exceeded the site cleanup level of 0.3 mg/L at two monitoring wells (MW-14D and MW-26R). The reported concentrations of dissolved manganese and iron are typical of previous water quality results.

A low-level detection of tetrachloroethene (PCE) was reported in the sample collected from monitoring well MW-11D(2) at a concentration of 1.2 µg/L. This result slightly exceeded the WAC 173-200 criteria of 0.80 µg/L. However, low-level detections of PCE are typical for this well.

All results from the Appendix I total metals analysis were below their respective WAC 173-200 criterion with the exception of total arsenic (0.0085 mg/L) at MW-29S. A complete list of the 5-year Appendix I total metals results can be found on Table 6 in the attachments.

A cation-anion balance was prepared based in milliequivalents per liter (meq/L) for each water sample to determine if it was electro-neutral (balanced cation and anion charges). A threshold of ten percent difference was used if the total sum of cations and anions were less than or equal to 5.0 meq/L, and a threshold of five percent difference was used if the total cation-anion sums was greater than 5.0 meq/L. The cation-anion balance was greater than the associated threshold at monitoring wells MW-11S, MW-12S, MW-15S, MW-17S and FMMW-2 (see Table 10).

Trilinear (or Piper) diagrams were prepared for groundwater sample results from each of the three water-bearing zones at the landfill (Shallow Perched Aquifer, Upper Regional Aquifer, and Lower Regional Aquifer). As shown on the enclosed Trilinear Diagrams, the groundwater sample results from all three aquifers plot within a consistent area of the graph, while the leachate results plot in a second area. These plots demonstrate the inherent water quality differences between leachate and groundwater collected from the monitoring wells.

### **Leachate Collection System**

Leachate volumes pumped from the east liner area sump (Cell 1) and side-slope liner sump (Cell 2), as well as rainfall totals from an on-site rain gauge, are recorded on a daily basis by on-site

personnel. Volumes pumped from the side-slope liner leak detection system and the east liner area hydraulic gradient control system are recorded by site personnel when pumping occurs. A summary of the monthly volume data is provided in Table 1, and copies of the monthly reports are included with the Leachate Treatment System Data.

Leachate samples were collected from the East Liner Area and Side Slope Liner System, and a leak-detection sample was collected from the Side Slope Liner System on January 21, 2021. In addition, although the east liner area hydraulic gradient control system did not accumulate enough fluid to require pumping during this monitoring period, a sample was also collected from hydraulic gradient control system on January 21, 2021.

Nitrate samples collected from the east liner area sump, the side-slope liner sump, and the side slope liner leak detection system required dilution due to elevated concentrations. The diluted samples were analyzed past the 48-hour holding time for nitrate using Method 300.0. These results are denoted with an "H" on Table 11, the summary data table.

No significant changes in leachate quality were noted during this event. Consistent with previous monitoring events, water quality results from the side slope liner leak detection system are similar to the leachate results. Water quality results from the hydraulic gradient control system are dissimilar to the leachate results.

### **Landfill Gas Monitoring**

Monthly landfill gas monitoring was performed on January 28, February 20, March 6, April 10, May 8, and June 11, 2021. All gas probe measurements were observed to be less than 5 percent methane by volume with the exception of GP-2A (6.5%) on May 8, 2021. After obtaining a reading greater than five percent methane by volume, the vacuum on the adjacent well field was adjusted to recapture the landfill gas.

On-site buildings were monitored for the presence of landfill gas on March 4 and May 7, 2021, using a flame ionization detector (FID). No detectable methane was recorded in the monitored buildings. It should be noted that on May 7, 2021, the main office was closed and SCS was unable to access the building to perform the monitoring. A summary of monitoring data for the landfill gas probes, barometric pressure trends, and on-site buildings is enclosed with the report under Landfill Gas Monitoring Results.

### **Site Inspections and Maintenance**

The landfill cover system and the condensate recirculation system were inspected on March 4, March 19 and April 10, 2021. Conditions observed during the inspections were typical for the site. The condensate sumps were working as designed. Sumps 5 and 10 do not collect significant volumes of condensate, and therefore, the pumps have been removed.

The gas collection and control system (GCCS) was inspected and maintenance was performed on a monthly basis during the first six months of 2021. Additional documentation can be found in the enclosed GCCS Maintenance Reports.

Mr. Andrew Smith  
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If you have any questions regarding the monitoring results, please call at (425) 681-2189.

Sincerely,



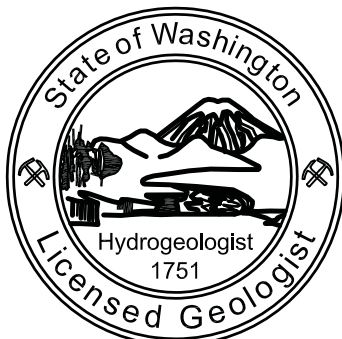
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Jody Snyder, LRI (email)  
Maria Finley, LRI (email and CD)

Enclosure: Summary Data Tables (Tables 1 through 11)  
Groundwater Potentiometric Surface Maps (Figures 1 through 3)  
Trilinear Diagrams (Figures 4 through 7)  
Field Sampling Data Sheets  
Data Validation Report  
Landfill Gas Monitoring Results  
Site Inspection Reports  
GCCS Maintenance Reports  
Leachate Treatment System Data



Kevin G. Lakey

## Summary Data Tables

**Table 1. 2021 Main Sump and Side-Slope Liner Area Performance Data  
Semi - Annual Monitoring Event No. 1 - January 2021  
Hidden Valley Landfill, Pierce County, Washington**

Month	Main Sump Monthly Leachate Volume - Cell 1 (gallons)	Side-Slope Sump Monthly Leachate Volume - Cell 2 (gallons)	Side-Slope Sump Monthly Leakage Flow <sup>a</sup> - Cell 2 (gallons/month)	Monthly Rainfall (inches)
January	8,001	1,201	0	10.10
February	16,223	0	0	7.35
March	3,994	0	0	3.65
April	43,388	0	0	2.25
May	17,368	0	0	3.85
June	0	0	0	3.90
Year to date:	88,974	1,201	0	31.10

Notes:

a = Leakage is fluid pumped from the leak detection sump as recorded by LRI staff.

**Table 2. Water Level Elevations - January 20, 2021  
Semi - Annual Monitoring Event No. 1 - January 2021  
Hidden Valley Landfill, Pierce County, Washington**

Location	Well Casing Elevation	Depth to Water (FT)	Water Level Elevation
<b>Shallow Perched Aquifer</b>			
MW-10S	463.65	23.84	439.81
MW-11S	520.03	89.05	430.98
MW-12S	493.41	61.46	431.95
MW-13S	452.26	20.87	431.39
MW-14S	481.30	55.20	426.10
MW-15S	506.78	71.13	435.65
MW-17S	555.97	126.05	429.92
MW-18S	541.43	126.51	414.92
MW-19S	489.23	51.73	437.50
MW-29S	450.65	13.70	436.95
FMMW-1	546.03	139.90	406.13
FMMW-2	539.96	132.56	407.40
BC-4S	530.25	121.55	408.70
<b>Upper Regional Aquifer</b>			
MW-10D	464.09	25.95	438.14
MW-11D	520.10	89.22	430.88
MW-11D(2)	519.53	88.37	431.16
MW-12D	493.49	62.99	430.50
MW-13D	450.19	20.90	429.29
MW-14D	481.39	47.00	434.39
MW-15D	509.09	75.47	433.62
MW-18D	541.79	127.30	414.49
MW-19D	489.35	60.47	428.88
MW-22U	549.17	131.86	417.31
<b>Lower Regional Aquifer</b>			
MW-14R	480.26	114.98	365.28
MW-20R	472.90	102.95	369.95
MW-22L	548.95	137.91	411.04
MW-26R	485.40	64.06	421.34
BC-4R	530.31	155.79	374.52

Updated well casing elevation with survey data from 5/23/2018

**Table 3. Field Parameters**  
**Semi - Annual Monitoring Event No. 1 - January 2021**  
**Hidden Valley Landfill, Pierce County, Washington**

Location	Sample Number	Date	Method	pH	Specific Conductivity	Temperature
Units				(SU)	( $\mu$ S/cm)	( $^{\circ}$ C)
HVL Cleanup Level				—	700	—
WAC 173-200				6.5-8.5	700 <sup>b</sup>	—
<b>Shallow Perched Aquifer</b>						
(BG) MW-10S	HVL-012021-22	1/20/21	DP	<b>6.32</b>	332	13.1
MW-11S	HVL-011921-09	1/19/21	DP	<b>5.86</b>	333	12.8
MW-12S	HVL-012021-17	1/20/21	DB	<b>5.87</b>	332	14.2
MW-13S	HVL-012021-23	1/20/21	DP	<b>6.18</b>	198	10.9
MW-14S	HVL-011921-10	1/19/21	DP	<b>6.00</b>	98	11.1
MW-15S	HVL-011921-02	1/19/21	DP	<b>5.98</b>	313	14.3
MW-17S	HVL-012021-16	1/20/21	DP	<b>5.90</b>	571	18.1
MW-18S	HVL-011921-07	1/19/21	DP	<b>6.32</b>	472	14.2
MW-29S	HVL-012021-19	1/20/21	DP	<b>6.38</b>	293	11.9
FMMW-1	HVL-011921-01	1/19/21	DP	<b>6.42</b>	271	13.8
FMMW-2	HVL-011921-03	1/19/21	DP	<b>6.16</b>	481	14.8
<b>Upper Regional Aquifer</b>						
(BG) MW-10D	HVL-012021-20	1/20/21	DP	<b>6.43</b>	194	12.7
MW-11D(2)	HVL-012021-13	1/20/21	DP	6.78	197	12.3
MW-12D	HVL-012021-15	1/20/21	DP	6.86	286	14.9
MW-13D	HVL-012021-21	1/20/21	DP	6.56	287	12.2
MW-14D	HVL-011921-08	1/19/21	DP	<b>6.29</b>	219	11.7
MW-15D	HVL-011921-04	1/19/21	DP	6.66	280	13.5
MW-18D	HVL-011921-05	1/19/21	DP	6.77	254	13.6
<b>Lower Regional Aquifer</b>						
MW-14R	HVL-011921-06	1/19/21	DP	7.54	104	10.9
MW-20R	HVL-012121-29	1/21/21	DP	6.90	99	10.5
MW-26R	HVL-012021-18	1/20/21	DP	7.22	215	11.1

**Notes:**

Parameter concentrations that are greater than cleanup levels are shown in **bold**

b = Secondary Drinking Water Standard

BG = Background

$^{\circ}$ C = degrees Celsius

DP = dedicated bladder-pump

DB = disposable bailer

$\mu$ S/cm = microsiemens per centimeter

— = not analyzed or not applicable



**Table 4. Inorganic Parameters**  
**Semi - Annual Monitoring Event No. 1 - January 2021**  
**Hidden Valley Landfill, Pierce County, Washington**

Location	Alkalinity, Total	Ammonia	Chloride	Nitrate	Sulfate	Total Dissolved Solids	Total Organic Carbon	Total Suspended Solids
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MRL	10.0	0.1	0.2-1.2	0.2	0.2-1.0	10	1.0	4.0
HVL Cleanup Level	—	—	250	10	250	500	—	—
WAC 173-200 Criteria	—	—	250 <sup>b</sup>	10 <sup>a</sup>	250 <sup>b</sup>	500 <sup>b</sup>	—	—
<b>Shallow Perched Aquifer</b>								
(BG) MW-10S	150	*	8.9	1.9	15	180	1.3	*
MW-11S	90	*	16	7.8 <sup>H</sup>	15	210	1.1	*
MW-12S	49	*	18	15 <sup>H</sup>	8.0	230	1.5	5.6
MW-13S	75	*	5.0	2.0 <sup>H</sup>	5.6	140	*	*
MW-14S	39	*	2.4	0.58 <sup>H</sup>	3.4	56	1.8	*
MW-15S	120	3.2	15	2.7 <sup>H</sup>	8.6	170	2.0	*
MW-17S	160	5.3	16	24	5.3	320	1.7	*
MW-18S	190	*	16	4.7 <sup>H</sup>	13	260	1.3	*
MW-29S	120	*	8.7	0.26 <sup>H</sup>	12	190	1.2	6.8
FMMW-1	99	*	12	1.8 <sup>H</sup>	13	170	1.0	*
FMMW-2	150	*	18	11 <sup>H</sup>	21	300	1.2	*
<b>Upper Regional Aquifer</b>								
(BG) MW-10D	82	*	5.4	2.3	8.6	110	*	*
MW-11D(2)	86	*	5.1	1.9 <sup>H</sup>	7.0	150	*	*
MW-12D	140	*	8.1	1.2 <sup>H</sup>	5.8	190	*	*
MW-13D	130	*	8.9	1.0	11	160	*	*
MW-14D	89	3.1	7.0	* <sup>H</sup>	7.6	120	1.9	*
MW-15D	120	*	9.3	0.67 <sup>H</sup>	11	160	*	16
MW-18D	110	*	7.2	1.6 <sup>H</sup>	8.1	150	*	*
<b>Lower Regional Aquifer</b>								
MW-14R	48	*	1.6	* <sup>H</sup>	3.7	80	*	*
MW-20R	45	*	1.4	*	2.5	110	*	*
MW-26R	100	*	4.8	*	11	130	*	*

**Notes:**

Parameter concentrations that are greater than cleanup levels are shown in **bold**

Analyses performed by Eurofins TestAmerica in Denver, Colorado

H = Parameter analyzed outside specified holding time

— = not analyzed or not applicable

\* = not reported at or above the MRL (Method Reporting Limit)

a = Primary Drinking Water Standard

b = Secondary Drinking Water Standard

BG = Background/upgradient wells

mg/L = milligrams per liter

**Table 5. Dissolved Metals**  
**Semi - Annual Monitoring Event No. 1 - January 2021**  
**Hidden Valley Landfill, Pierce County, Washington**

Location	Iron	Manganese	Calcium	Magnesium	Potassium	Sodium
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MRL	0.01	0.001	0.2	0.1	2.0	1.0
HVL Cleanup Level	0.30	0.05	—	—	—	—
WAC 173-200 Criteria	0.30 <sup>b</sup>	0.05 <sup>b</sup>	—	—	—	—
<b>Shallow Perched Aquifer</b>						
(BG) MW-10S	*	*	41 <sup>B</sup>	13	2.1	9.5
MW-11S	*	*	28	8.3	6.3	19
MW-12S	*	0.0034	24 <sup>B</sup>	6.8	11	20
MW-13S	*	*	19 <sup>B</sup>	5.4	3.4	13
MW-14S	*	0.04	8.9	2.7	2.4	5.0
MW-15S	*	<b>1.1</b>	23	7.0	9.4	17
MW-17S	*	<b>1.9</b>	41 <sup>B</sup>	14	19	30
MW-18S	*	*	46	14	10	23
MW-29S	0.175	<b>0.73</b>	26 <sup>B</sup>	7.4	3.0	23
FMMW-1	*	*	22	5.9	3.9	22
FMMW-2	*	*	42	13	12	25
<b>Upper Regional Aquifer</b>						
(BG) MW-10D	0.006	*	21 <sup>B</sup>	7.3	*	6.9
MW-11D(2)	*	*	21 <sup>B</sup>	8.7	2.2	7.7
MW-12D	*	*	29 <sup>B</sup>	11	3.3	19
MW-13D	*	*	29 <sup>B</sup>	11	3.4	16
MW-14D	<b>3.04</b>	<b>1.0</b>	16	4.8	6.5	11
MW-15D	*	0.031	23	9.7	2.8	19
MW-18D	*	*	23	9.2	3.2	12
<b>Lower Regional Aquifer</b>						
MW-14R	0.054	<b>0.20</b>	7.8	4.5	2.1	5.3
MW-20R	*	*	8.5 <sup>B</sup>	4.3	2.1	5.8
MW-26R	<b>0.753</b>	<b>0.43</b>	22 <sup>B</sup>	9.9	2.5	6.6

**Notes:**

Parameter concentrations that are greater than site cleanup levels or WAC 173-200 criteria are shown in **bold**

Analyses performed by Eurofins TestAmerica in Denver, Colorado

B= Compound was found in the blank and sample.

BG = Background

mg/L = milligrams per liter

\* = not reported at or above the MRL (Method Reporting Limit)

— = not analyzed or not applicable

**Table 6. Appendix I Total Metals  
Semi - Annual Monitoring Event No. 1 - January 2021  
Hidden Valley Landfill, Pierce County, Washington**

Location	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MRL	0.002	0.005	0.005	0.005	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WAC 173-200 Criteria	—	0.00005	1.0	—	0.01	0.05	—	1.0	0.05	—	0.01	0.05	—	—	5.0
<b>Shallow Perched Aquifer</b>															
(BG) MW-10S	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW-11S	*	*	0.010	*	*	*	*	*	*	*	*	*	*	*	*
MW-12S	*	*	0.018	*	*	*	*	*	*	*	*	*	*	*	0.78
MW-13S	*	*	0.0053	*	*	*	*	*	*	*	*	*	*	*	*
MW-14S	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW-15S	*	*	0.013	*	*	*	*	*	*	*	*	*	*	*	*
MW-17S	*	*	0.028	*	*	*	*	*	*	*	*	*	*	*	*
MW-18S	*	*	0.015	*	*	*	*	*	*	*	*	*	*	*	*
MW-29S	*	<b>0.0085</b>	0.0087	*	*	*	*	*	*	*	*	*	*	*	*
FMMW-1	*	*	0.0059	*	*	*	*	*	*	*	*	*	*	*	*
FMMW-2	*	*	0.019	*	*	*	*	*	*	*	*	*	*	*	*
<b>Upper Regional Aquifer</b>															
(BG) MW-10D	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW-11D(2)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW-12D	*	*	0.0057	*	*	*	*	*	*	*	*	*	*	*	*
MW-13D	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW-14D	*	*	0.010	*	*	*	*	*	*	*	*	*	*	*	*
MW-15D	*	*	0.019	*	*	*	*	*	*	*	*	*	*	*	*
MW-18D	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
<b>Lower Regional Aquifer</b>															
MW-14R	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW-20R	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW-26R	*	*	0.0079	*	*	*	*	*	*	*	*	*	*	*	*

**Notes:**

Parameter concentrations that are greater than site cleanup levels or WAC 173-200 criteria are shown in **bold**

Analyses performed by Eurofins TestAmerica in Denver, Colorado

BG = Background

mg/L = milligrams per liter

\* = not reported at or above the MRL (Method Reporting Limit)

— = not analyzed or not applicable

**Table 7. Volatile Organic Compounds  
Semi - Annual Monitoring Event No. 1 - January 2021  
Hidden Valley Landfill, Pierce County, Washington**

Location	Tetrachloroethene
Units	µg/L
MRL	0.5
HVL Cleanup Level	—
WAC 173-200 Criteria	0.80
<b>Shallow Perched Aquifer</b>	
(BG) MW-10S	*
MW-11S	*
MW-12S	*
MW-13S	*
MW-14S	*
MW-15S	*
MW-17S	*
MW-18S	*
MW-29S	*
FMMW-1	*
FMMW-2	*
<b>Upper Regional Aquifer</b>	
(BG) MW-10D	*
MW-11D(2)	<b>1.2</b>
MW-12D	*
MW-13D	*
MW-14D	*
MW-15D	*
MW-18D	*
<b>Lower Regional Aquifer</b>	
MW-14R	*
MW-20R	*
MW-26R	*
<b>Quality Control Samples</b>	
Field Blank	*
Trip Blank	*

Notes:

Parameter concentrations that are greater than cleanup levels are shown in **bold**

Analyses performed by Eurofins TestAmerica in Denver, Colorado

Volatile organic compounds not listed were not present at concentrations exceeding the MRL

BG = Background

µg/L = micrograms per liter

\* = not reported at or above the MRL (Method Reporting Limit)

— = not analyzed or not applicable

**Table 8. Duplicate Sample Evaluation**  
**Semi - Annual Monitoring Event No. 1 - January 2021**  
**Hidden Valley Landfill, Pierce County, Washington**

Parameter	MRL	MW-11S	MW-11S (Duplicate)	RPD (%)
<b>Dissolved Metals (mg/L)</b>				
Calcium	0.2	28	27	3.6
Magnesium	0.1	8.3	8.1	2.4
Potassium	2.0	6.3	6.1	3.2
Sodium	1.0	19	19	0.0
<b>Total Metals (mg/L)</b>				
Barium	0.005	0.01	0.01	0.0
<b>Inorganic Parameters (mg/L)</b>				
Alkalinity	10.0	90	90	0.0
Chloride	0.6	16	16	0.0
Nitrate	0.2	7.8 <sup>H</sup>	7.9 <sup>H</sup>	1.3
Sulfate	0.5	15	15	0.0
Total Dissolved Solids	10	210	190	10.0
Total Organic Carbon	1.0	1.1	1.2	8.7

**Notes:**

Analysis performed by Eurofins TestAmerica in Denver, Colorado

Analytes not listed were not present at concentrations exceeding the MRL

H = Parameter analyzed outside specified holding time

RPD = relative percent difference

µg/L = micrograms per liter

mg/L = milligrams per liter

**Table 9. Water Supply Wells**  
**Semi - Annual Monitoring Event No. 1 - January 2021**  
**Hidden Valley Landfill, Pierce County, Washington**

Parameter	Units	MRL	Corliss	Paul Bunyan
<b>Field Parameters</b>				
pH	SU	—	6.36	6.83
Specific Conductivity	µS/cm	—	243	289
Temperature	°C	—	8.1	10.4
<b>Volatile Organic Compounds</b>				
No Detections	µg/L	0.5	*	*
<b>Metals (total)</b>				
Arsenic	mg/L	0.005	*	*
Iron	mg/L	0.01	0.011	0.021
Manganese	mg/L	0.001	0.0029	0.0022
Zinc	mg/L	0.01	*	0.06
<b>Inorganic Parameters</b>				
Ammonia	mg/L	0.1	*	*
Chemical Oxygen Demand	mg/L	10	*	*
Chloride	mg/L	1.2	5.2	6.7
Nitrate	mg/L	0.2	1.3	2.0
Nitrite	mg/L	0.5	*	*
Sulfate	mg/L	0.2	9.6	9.9
Total Organic Carbon	mg/L	1.0	*	*
<b>Other</b>				
Color	PCU	5.0	5.0	5.0

Notes:

- Analyses performed by Eurofins TestAmerica in Denver, Colorado.
- Analytes not listed are VOCs that were not detected above the reporting limit.
- Color reported in color units
- °C = degrees Celsius
- mg/L = milligrams per liter
- PCU = platinum-cobalt units
- SU = Standard Units
- µS/cm = microsiemens per centimeter
- µg/L = micrograms per liter
- \* = not reported at or above the MRL (Method Reporting Limit)
- = Not Applicable

**Table 10. Cation-Anion Balance**  
**Semi - Annual Monitoring Event No. 1 - January 2021**  
**Hidden Valley Landfill, Pierce County, Washington**

Cations	mg/L					meq/L					% of Total		
	Ca	Mg	K	Na	Total	Ca	Mg	K	Na	Total	Na+K	Ca	Mg
MW-10S	41	13	2.1	9.5	65.60	2.05	1.07	0.05	0.41	3.58	13	57	30
MW-11S	28	8.3	6.3	19	61.60	1.40	0.68	0.16	0.83	3.07	32	46	22
MW-12S	24	6.8	11	20	61.80	1.20	0.56	0.28	0.87	2.91	40	41	19
MW-13S	19	5.4	3.4	13	40.80	0.95	0.44	0.09	0.57	2.05	32	46	22
MW-14S	8.9	2.7	2.4	5.0	19.00	0.44	0.22	0.06	0.22	0.95	30	47	24
MW-15S	23	7.0	9.4	17	56.40	1.15	0.58	0.24	0.74	2.70	36	42	21
MW-17S	41	14	19	30	104.00	2.05	1.15	0.49	1.31	4.99	36	41	23
MW-18S	46	14	10	23	93.00	2.30	1.15	0.26	1.00	4.70	27	49	24
MW-29S	26	7.4	3.0	23	59.40	1.30	0.61	0.08	1.00	2.98	36	43	20
FMMW-1	22	5.9	3.9	22	53.80	1.10	0.49	0.10	0.96	2.64	40	42	18
FMMW-2	42	13	12	25	92.00	2.10	1.07	0.31	1.09	4.56	31	46	23
MW-10D	21	7.3	2.0	6.9	37.20	1.05	0.60	0.05	0.30	2.00	18	52	30
MW-11D(2)	21	8.7	2.2	7.7	39.60	1.05	0.72	0.06	0.33	2.16	18	49	33
MW-12D	29	11	3.3	19	62.30	1.45	0.91	0.08	0.83	3.26	28	44	28
MW-13D	29	11	3.4	16	59.40	1.45	0.91	0.09	0.70	3.14	25	46	29
MW-14D	16	4.8	6.5	11	38.30	0.80	0.40	0.17	0.48	1.84	35	43	21
MW-15D	23	9.7	2.8	19	54.50	1.15	0.80	0.07	0.83	2.84	32	40	28
MW-18D	23	9.2	3.2	12	47.40	1.15	0.76	0.08	0.52	2.51	24	46	30
MW-14R	7.8	4.5	2.1	5.3	19.70	0.39	0.37	0.05	0.23	1.04	27	37	35
MW-20R	8.5	4.3	2.1	5.8	20.70	0.42	0.35	0.05	0.25	1.08	28	39	33
MW-26R	22	9.9	2.5	6.6	41.00	1.10	0.81	0.06	0.29	2.26	16	48	36

Anions	mg/L					meq/L					% of Total			Total Ions (meq/L)	Cation - Anion Balance	Applicable Ratio (%)	Ratio Exceedance
	Alk	Cl	NO <sub>3</sub>	SO <sub>4</sub>	Total	Alk	Cl	NO <sub>3</sub>	SO <sub>4</sub>	Total	Cl	Alk	SO <sub>4</sub>				
MW-10S	180	8.9	1.9	15	205.80	2.95	0.25	0.03	0.31	3.55	7	83	9	7.13	0.52	5	-
MW-11S	108	16	7.8	15	146.80	1.77	0.45	0.13	0.31	2.66	17	67	12	5.73	7.12	5	Exceeds
MW-12S	58.8	18	15	8.0	99.80	0.96	0.51	0.24	0.17	1.88	27	51	9	4.79	21.49	10	Exceeds
MW-13S	90	5.0	2.0	5.6	102.60	1.48	0.14	0.03	0.12	1.77	8	84	7	3.81	7.33	10	-
MW-14S	46.8	2.4	0.58	3.4	53.18	0.77	0.07	0.01	0.07	0.92	7	84	8	1.86	1.61	10	-
MW-15S	144	15	2.7	8.6	170.30	2.36	0.42	0.04	0.18	3.01	14	79	6	5.71	5.31	5	Exceeds
MW-17S	192	16	24	5.3	237.30	3.15	0.45	0.39	0.11	4.10	11	77	3	9.09	9.83	5	Exceeds
MW-18S	228	16	4.7	13	261.70	3.74	0.45	0.08	0.27	4.54	10	82	6	9.24	1.81	5	-
MW-29S	144	8.7	0.26	12	164.96	2.36	0.25	0.00	0.25	2.86	9	83	9	5.84	2.10	5	-
FMMW-1	118.8	12	1.8	13	145.60	1.95	0.34	0.03	0.27	2.59	13	75	10	5.23	1.04	5	-
FMMW-2	180	18	11	21	230.00	2.95	0.51	0.18	0.44	4.07	12	72	11	8.63	5.64	5	Exceeds
MW-10D	98.4	5.4	2.3	8.6	114.70	1.61	0.15	0.04	0.18	1.98	8	81	9	3.98	0.45	10	-
MW-11D(2)	103.2	5.1	1.9	7.0	117.20	1.69	0.14	0.03	0.15	2.01	7	84	7	4.17	3.42	10	-
MW-12D	168	8.1	1.2	5.8	183.10	2.76	0.23	0.02	0.12	3.12	7	88	4	6.39	2.19	5	-
MW-13D	156	8.9	1.0	11	176.90	2.56	0.25	0.02	0.23	3.05	8	84	7	6.19	1.31	5	-
MW-14D	106.8	7.0	0.20	7.6	121.60	1.75	0.20	0.00	0.16	2.11	9	83	7	3.95	6.89	10	-
MW-15D	144	9.3	0.67	11	164.97	2.36	0.26	0.01	0.23	2.86	9	82	8	5.71	0.34	5	-
MW-18D	132	7.2	1.6	8.1	148.90	2.16	0.20	0.03	0.17	2.56	8	84	7	5.07	1.05	5	-
MW-14R	57.6	1.6	0.20	3.7	63.10	0.94	0.05	0.00	0.08	1.07	4	88	7	2.11	1.23	10	-
MW-20R	54	1.4	0.20	2.5	58.10	0.89	0.04	0.00	0.05	0.98	4	90	5	2.06	5.03	10	-
MW-26R	120	4.8	0.20	11	136.00	1.97	0.14	0.00	0.23	2.34	6	84	10	4.60	1.56	10	-

Notes:  
mg/L = milligrams per liter  
meq/L = milliequivalents per liter  
Total alkalinity concentration, reported as calcium carbonate (CaCO<sub>3</sub>), is converted to the bicarbonate (HCO<sub>3</sub><sup>-</sup>) ion by multiplying by a factor of 1.2.  
Cation / anion balance equation is the equivalent percent difference in cations minus anions divided by the sum of cations and anions [(cations-anions)/(anions+cations)\*100].  
The MRL was used for analytes that were non-detect  
A 10% difference threshold is used if the total cation-anion sums are < 5.0 meq/liter.  
A 5% difference threshold is used if the total cation-anion sums are > or = to 5.0 meq/liter.  
— = Not Applicable

**Table 11. Leachate Monitoring Results  
Semi - Annual Monitoring Event No. 1 - January 2021  
Hidden Valley Landfill, Pierce County, Washington**

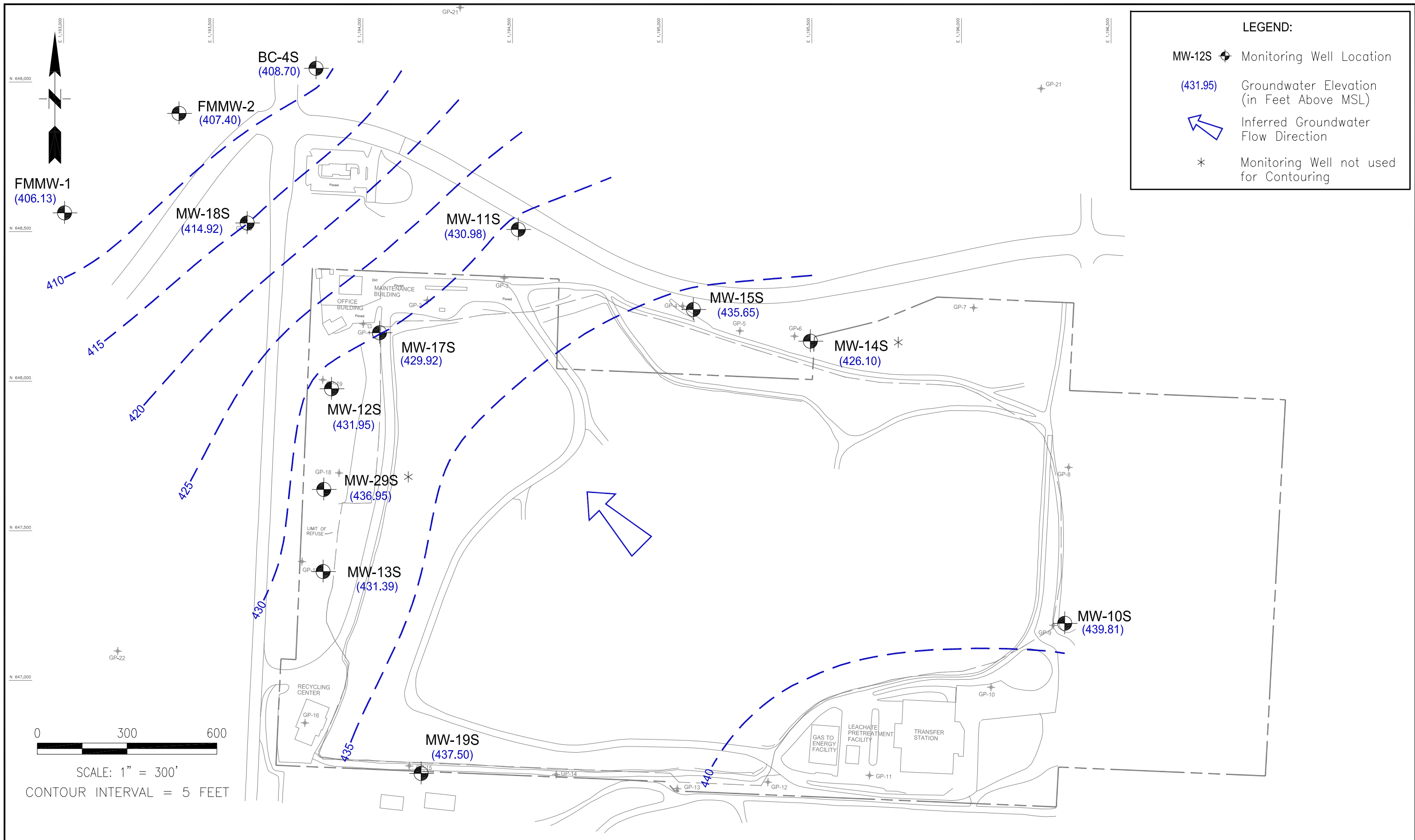
Parameters	MRL	Leachate-East Area	Leachate-Side Slope	Leak Detection-Side Slope	Hydraulic Gradient Control System
<b>Volatile Organics (µg/L)</b>					
1,4-Dichlorobenzene	0.5-0.8	2.3	0.58	*	*
Acetone	10.0	17	16	14	*
Benzene	0.5-0.8	1.3	3.5	1.6	*
Carbon disulfide	0.5-0.84	0.93	1.6	*	*
cis-1,2-Dichloroethene	0.5-0.75	*	1.2	3.1	*
Ethylbenzene	1.0	1.6	2.2	*	*
m-Xylene & p-Xylene	0.5-0.77	4.0	2.0	0.62	*
o-Xylene	0.5-0.95	1.9	1.5	*	*
Toluene	0.5-0.85	2.3	4.2	1.5	*
<b>Total Metals (mg/L)</b>					
Antimony	0.002	0.0033	0.016	*	*
Arsenic	0.005	0.03	0.19	*	*
Barium	0.005	0.43	0.39	0.033	0.029
Calcium	0.2-0.78	71	12	31	100
Chromium	0.005	0.099	0.035	*	*
Cobalt	0.010	0.01	*	0.064	*
Copper	0.010	*	0.11	*	0.6
Iron	0.01-0.02	3.58	1.16	1.96	5.67
Lead	0.002	0.0026	0.0081	*	0.11
Magnesium	0.1-0.26	44	23	25	27
Manganese	0.005	1.7	0.077	1.9	3.9
Nickel	0.02	0.28	0.51	*	*
Potassium	2-2.4	240	460	470	3.7
Selenium	0.005	*	0.0078	0.0075	*
Sodium	1-3.7	2,500	6,100	4,400	18
Vanadium	0.01	0.080	0.084	0.094	*
Zinc	0.01	0.028	0.064	*	0.49
<b>Inorganic Parameters (mg/L)</b>					
Alkalinity	10	3,700	7,500	5,400	410
Ammonia	0.1-2.2	270	440	310	*
Chloride	0.2-60	2,000	7,600	4,900	0.94
Nitrate as N	0.5-0.9	* H	22 H	0.52 H	*
Sulfate	0.2-5.0	31	500	390	3.8
Total Dissolved Solids	10-470	8,900	21,000	19,000	430
Total Organic Carbon - Quad	1-35	430	930	690	1.8
Total Suspended Solids	4.0	18	*	*	*
<b>Field Parameters</b>					
Dissolved Oxygen (mg/L)	—	0.84	0.17	0.80	2.53
Oxidation Reduction Potential (mV)	—	-84.3	-178.0	5.8	-22.8
pH (SU)	—	7.36	7.88	7.60	6.67
Specific Conductivity (µS/cm)	—	11,968	28,786	24,256	736
Temperature (°C)	—	13.7	22.1	25.9	10.8
Turbidity (NTU)	—	34.9	11.2	13.8	1.3

**Notes:**

Analyses performed by TestAmerica, Arvada, Colorado  
Volatile organic compounds not listed were not present at concentrations exceeding the MRL  
°C = degrees celcius  
H = Sample was prepped or analyzed beyond specified holding time  
mg/L = milligrams per liter  
mV = millivolts  
NTU = Nephelometric Turbidity Units  
SU = standard units  
µg/L = micrograms per liter  
µS/cm = microsiemens per centimeter  
— = not applicable or not analyzed  
\* = not reported at or above the MRL (Method Reporting Limit)



## Groundwater Potentiometric Surface Maps



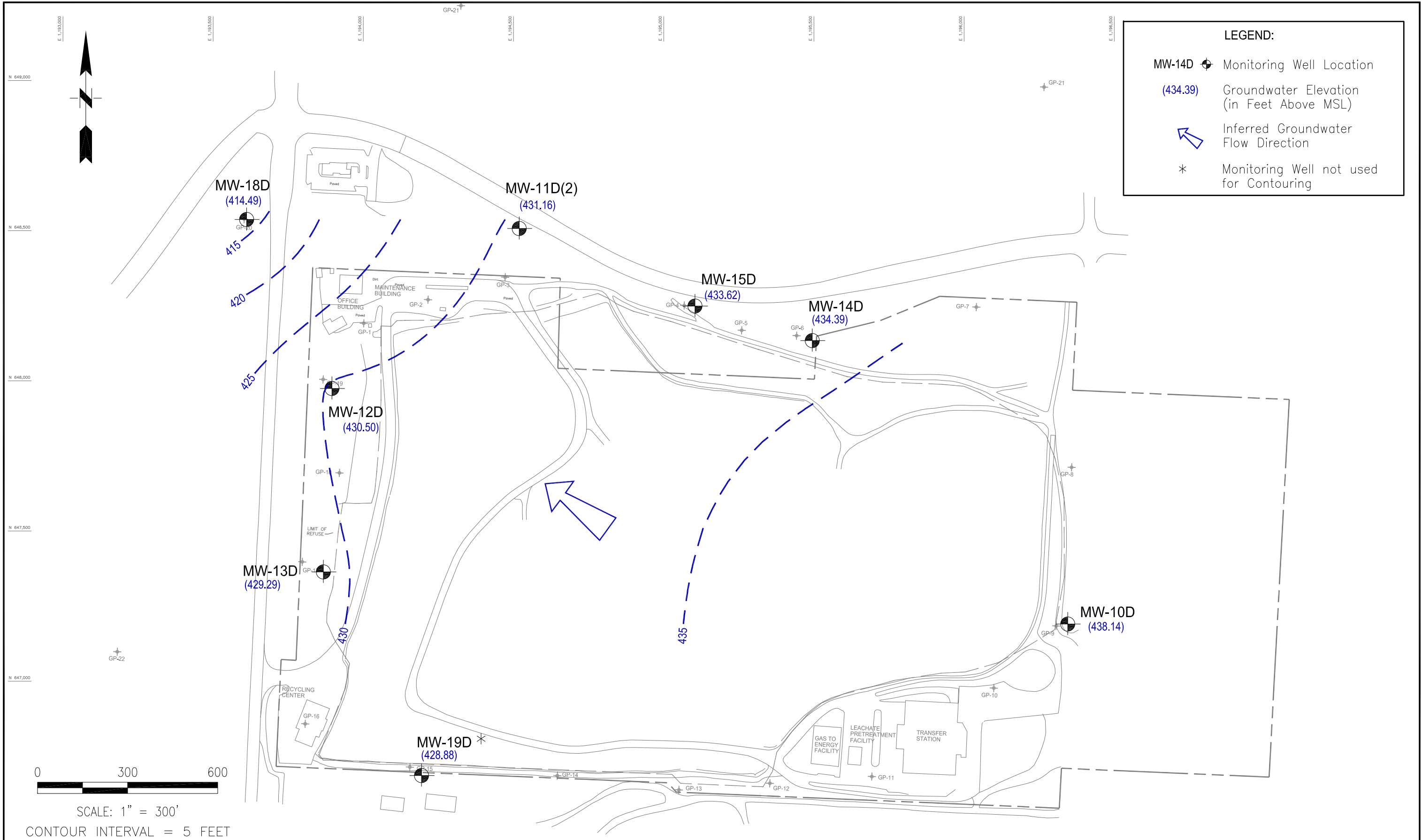
**SCS ENGINEERS**  
 Environmental Consultants and Contractors  
 2405 140th Avenue NE, Suite 107  
 Bellevue, Washington 98005  
 (425) 746-4600 FAX: (425) 746-6747

PROJECT NO. 04221002.03  
 SCALE AS SHOWN  
 CAD FILE FIGURE 1

DES BY SG  
 CHK BY KGL  
 APP BY KGL

SHALLOW PERCHED AQUIFER  
 WATER LEVEL MAP  
 JANUARY 20, 2021  
 HIDDEN VALLEY LANDFILL  
 PIERCE COUNTY, WASHINGTON

DATE AUGUST 2021  
 FIGURE 1



**LEGEND:**

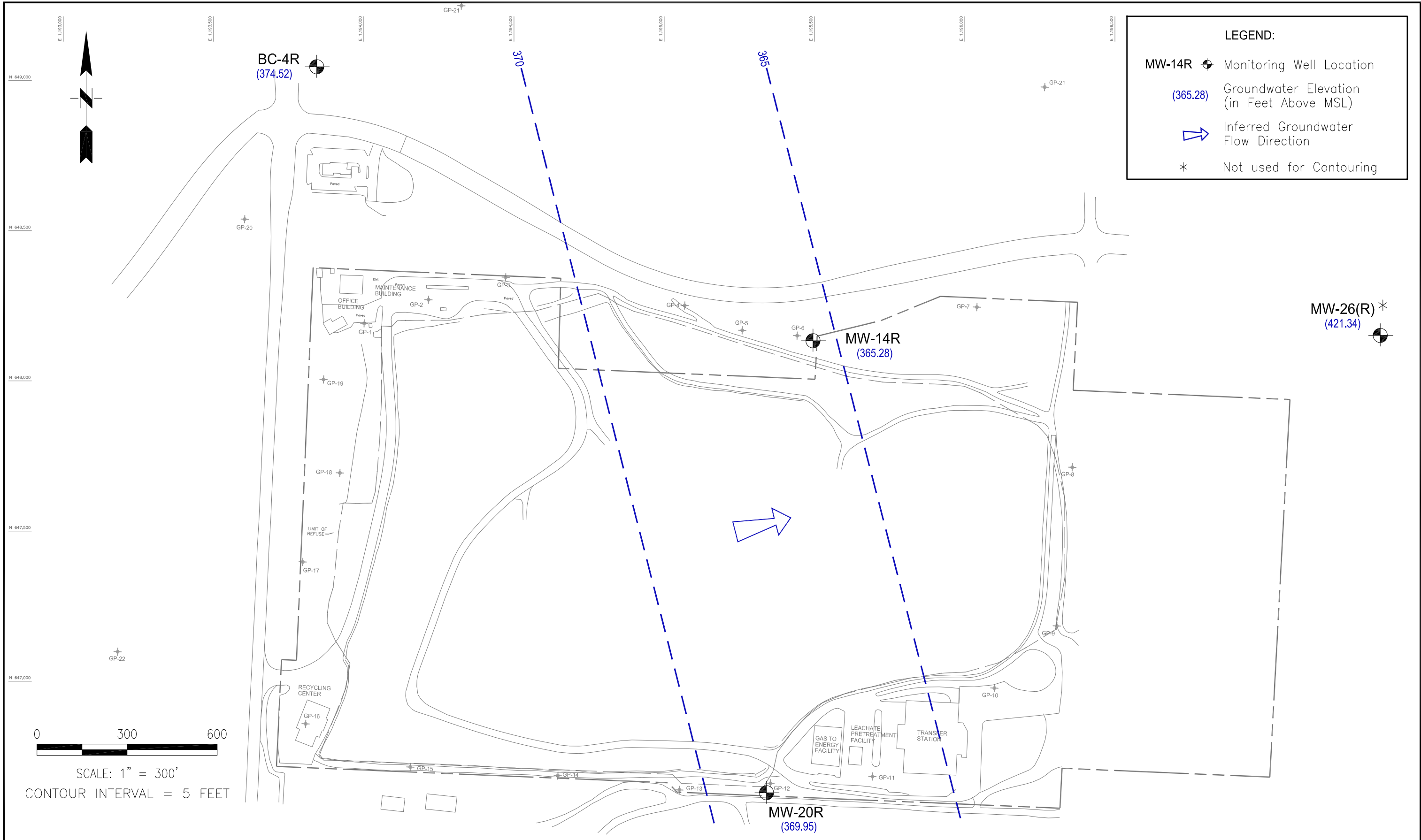
- MW-14D Monitoring Well Location
- (434.39) Groundwater Elevation (in Feet Above MSL)
- Inferred Groundwater Flow Direction
- \* Monitoring Well not used for Contouring

**SCS ENGINEERS**  
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PROJECT NO.	04221002.03	DES BY	SG
SCALE	AS SHOWN	CHK BY	KGL
CAD FILE	FIGURE 2	APP BY	KGL

UPPER REGIONAL AQUIFER  
 WATER LEVEL MAP  
 JANUARY 20, 2021  
 HIDDEN VALLEY LANDFILL  
 PIERCE COUNTY, WASHINGTON

DATE  
 AUGUST 2021  
 FIGURE  
**2**



**SCS ENGINEERS**  
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 Bellevue, Washington 98005  
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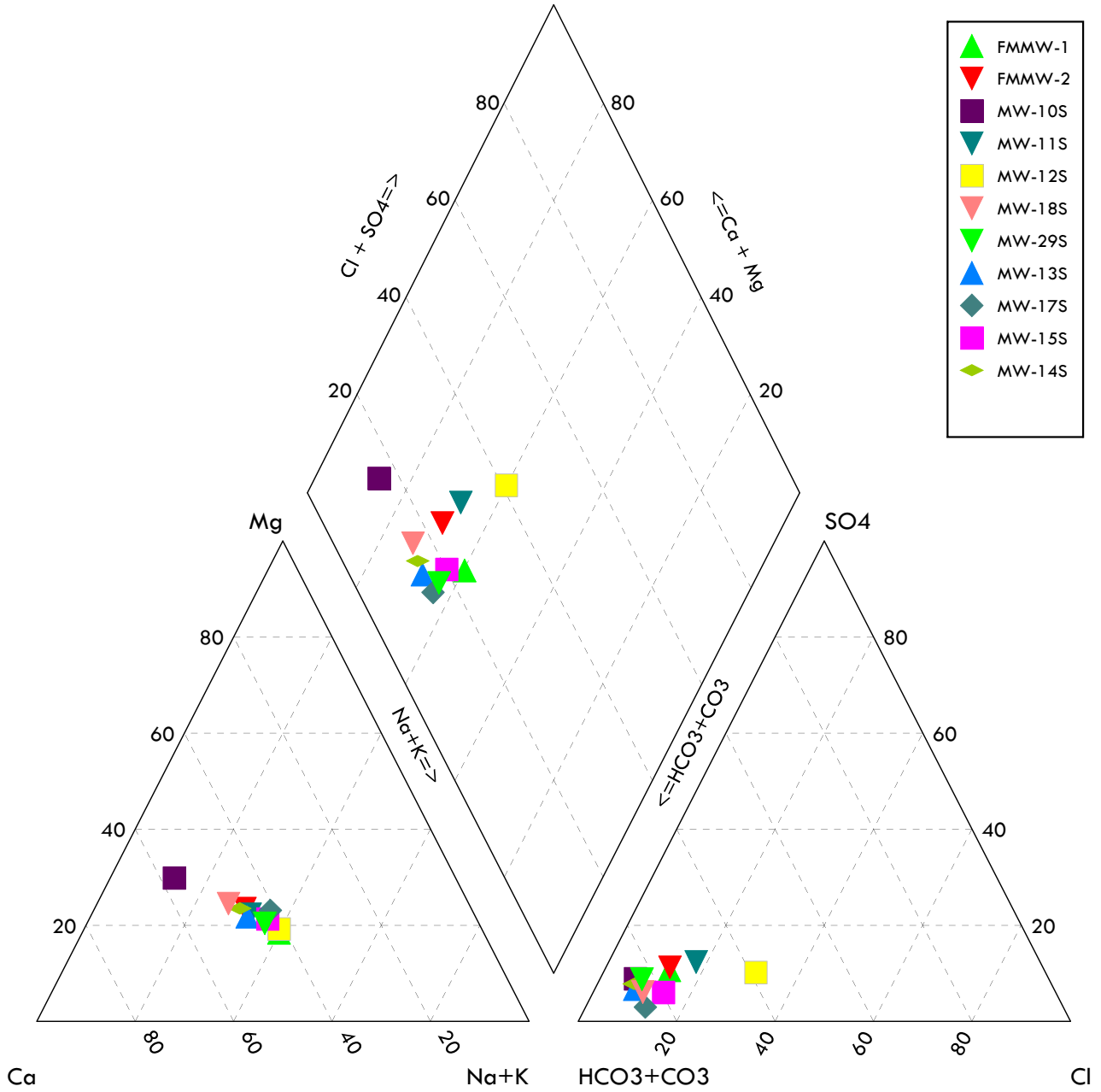
PROJECT NO.	04221002.03	DES BY	SG
SCALE	AS SHOWN	CHK BY	KGL
CAD FILE	FIGURE 3	APP BY	KGL

LOWER REGIONAL AQUIFER  
 WATER LEVEL MAP  
 JANUARY 20, 2021  
 HIDDEN VALLEY LANDFILL  
 PIERCE COUNTY, WASHINGTON

DATE  
 AUGUST 2021  
 FIGURE  
**3**

## Trilinear Diagrams

### Shallow Aquifer - Semi-Annual Event No. 1, 2021



DESCRIPTION: Trilinear Diagram

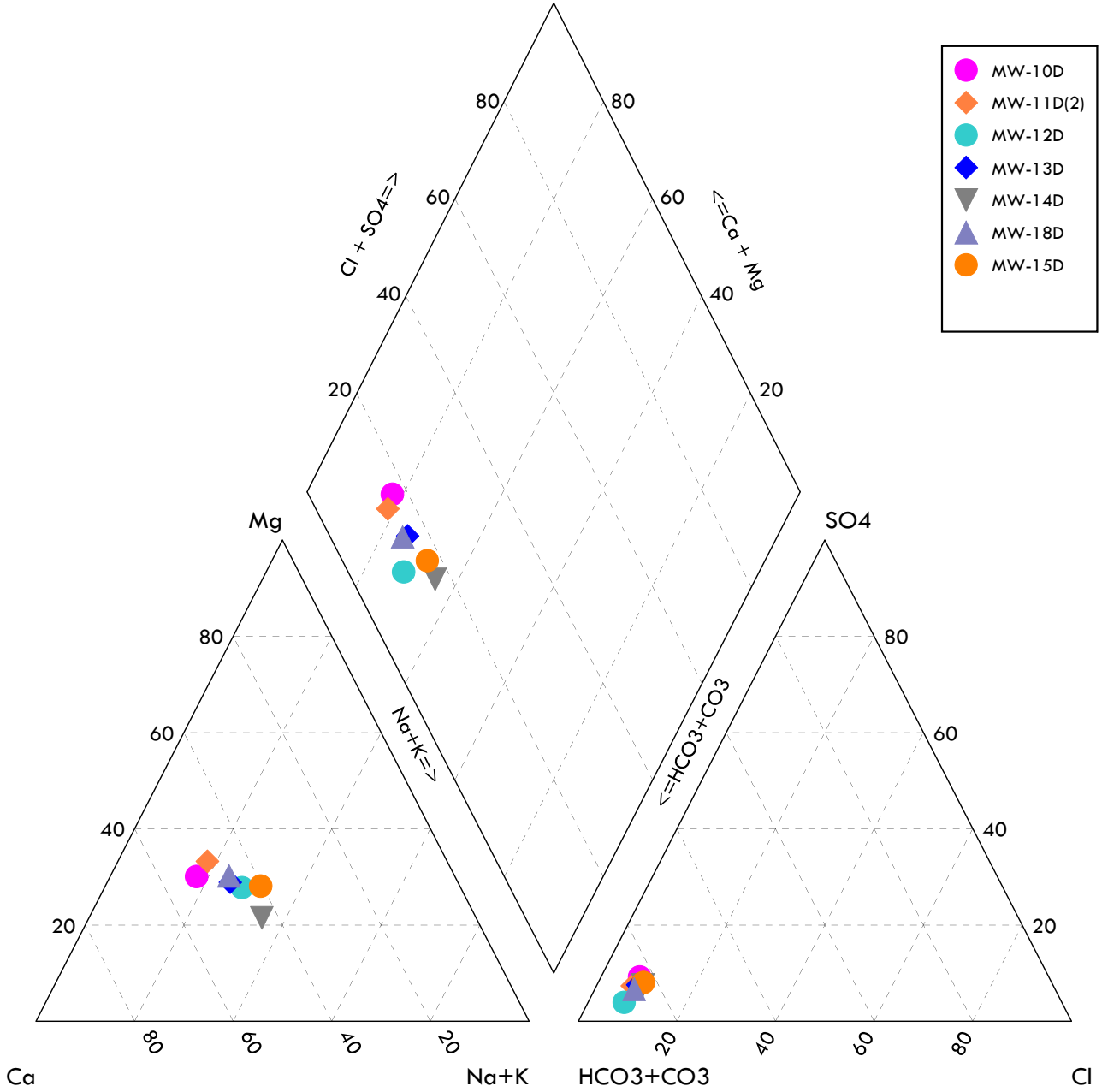
PROJECT: Hidden Valley Landfill

PROJECT NO: 04221002.03

CLIENT: LRI Hidden Valley

DATE: August 2021

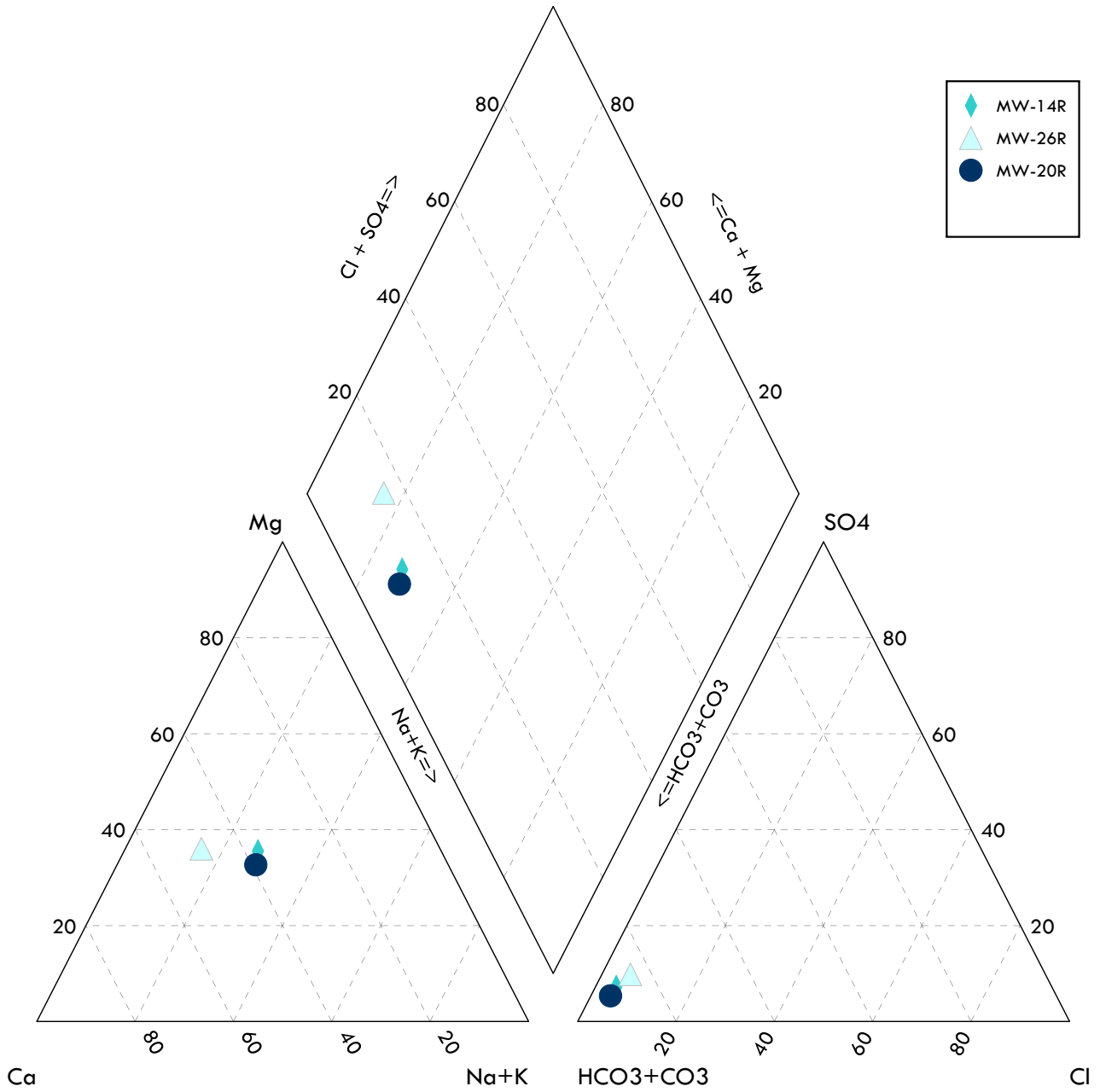
Upper Regional Aquifer - Semi-annual No. 1, 2021



DESCRIPTION: Trilinear Diagram

	PROJECT: Hidden Valley Landfill	PROJECT NO: 04221002.03
	CLIENT: LRI Hidden Valley	DATE: August 2021

Lower Regional Aquifer - Semi-annual Event No. 1, 2021

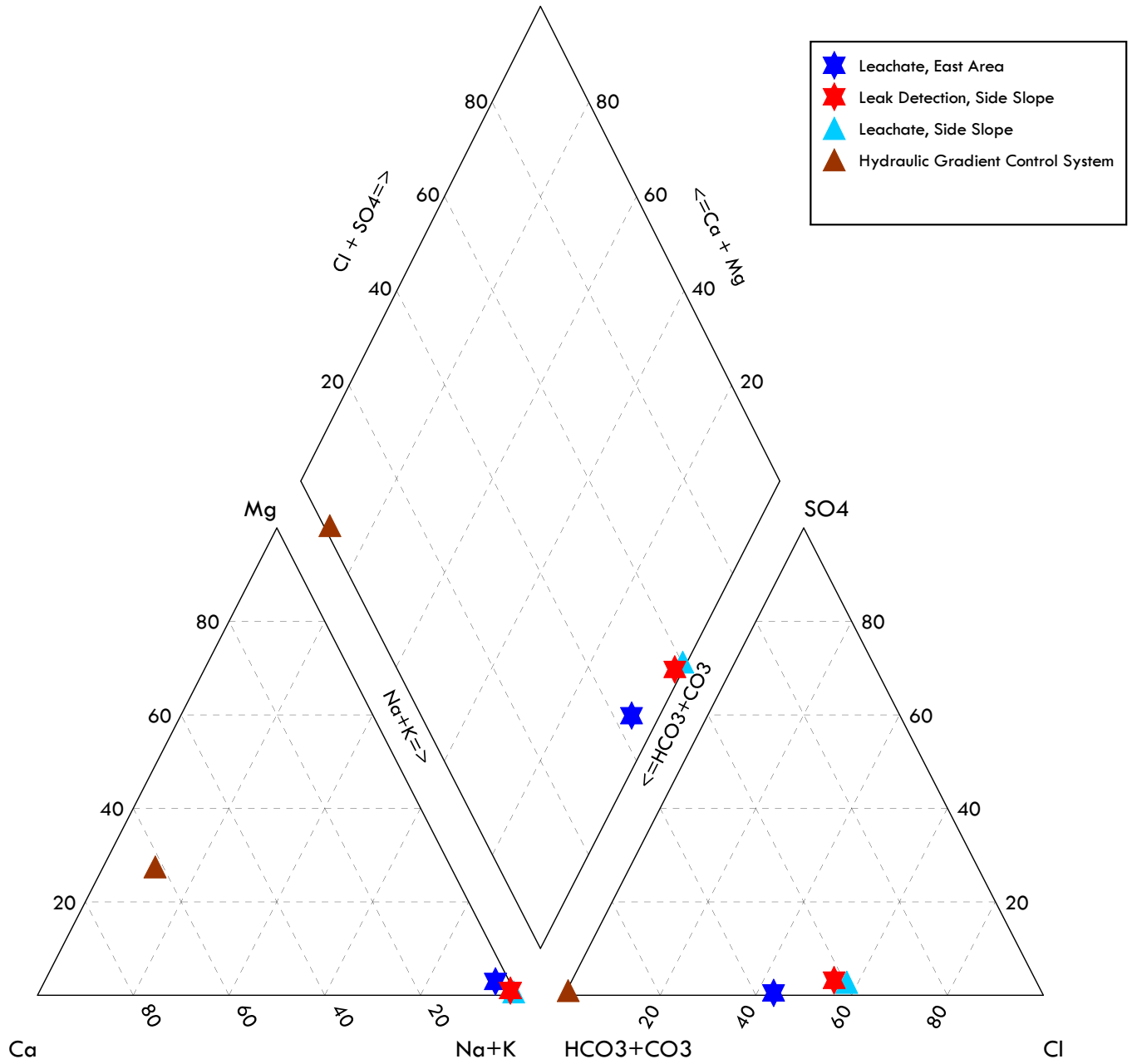


DESCRIPTION: Trilinear Diagram

	PROJECT: Hidden Valley Landfill	PROJECT NO: 04221002.03
	CLIENT: LRI Hidden Valley	DATE: August 2021



### Leachate and Leak Detection Locations - Semi-annual Event No. 1, 2021



DESCRIPTION: Trilinear Diagram

PROJECT: Hidden Valley Landfill

PROJECT NO: 04221002.03

CLIENT: LRI Hidden Valley

DATE: August 2021

## Field Sampling Data Sheets

January 22, 2021  
File No. 04221002.03

Subject: **Semi – Annual Groundwater Monitoring Event No. 1 – January 2021**  
**Hidden Valley Landfill, Pierce County, Washington**

**NOTES/SAMPLE DECODING:**

Event Dates: January 19-21, 2021

Field Staff: Sam Graber and Andres Lopez

- This event served as the annual sampling event.
- Dedicated pumps were used for purging and sampling wells MW-10S, MW-10D, MW-11S, MW-11D(2), MW 12D, MW-13S, MW-13D, MW-14S, MW-14D, MW-14R, MW-15S, MW-15D, MW-17S, MW-18S, MW-18D, MW-20R, MW-26R, MW-29S, FMMW-1, and FMMW-2.
- A disposable bailer was used to sample monitoring well MW-12S.
- Water supply wells Corliss and Paul Bunyan were collected as grab samples.
- A field duplicate sample was collected at MW-11S.
- A complete round of water levels was completed on January 20, 2021.
- Field water quality meters were calibrated daily prior to sampling.
- A field blank sample was collected using deionized water provided by TestAmerica Laboratories in Tacoma, Washington.

Sample Date	Sample Number	Well ID
1/19/21	HVL-011921-01	FMMW-1
1/19/21	HVL-011921-02	MW-15S
1/19/21	HVL-011921-03	FMMW-2
1/19/21	HVL-011921-04	MW-15D
1/19/21	HVL-011921-05	MW-18D
1/19/21	HVL-011921-06	MW-14R
1/19/21	HVL-011921-07	MW-18S
1/19/21	HVL-011921-08	MW-14D
1/19/21	HVL-011921-09	MW-11S
1/19/21	HVL-011921-10	MW-14S
1/19/21	HVL-011921-11	MW-11S (Duplicate)
1/20/21	HVL-012021-12	Water Supply Well, Corliss
1/20/21	HVL-012021-13	MW-11D(2)
1/20/21	HVL-012021-14	Water Supply Well, P. Bunyan
1/20/21	HVL-012021-15	MW-12D

1/20/21	HVL-012021-16	MW-17S
1/20/21	HVL-012021-17	MW-12S
1/20/21	HVL-012021-18	MW-26R
1/20/21	HVL-012021-19	MW-29S
1/20/21	HVL-012021-20	MW-10D
1/20/21	HVL-012021-21	MW-13D
1/20/21	HVL-012021-22	MW-10S
1/20/21	HVL-012021-23	MW-13S
1/20/21	HVL-012021-24	QC, F-Blank
1/21/21	HVL-012121-25	Leachate - East Area (Cell 1 Leachate)
1/21/21	HVL-012121-26	Side Slope Leak Detection (Cell 2 Leak Detection)
1/21/21	HVL-012121-27	Leachate - Side Slope (Cell 2 Leachate)
1/21/21	HVL-012121-28	Hydraulic Gradient Control System (Cell 1 Leak Detection)
1/21/21	HVL-012121-29	MW-20R

# SCS ENGINEERS

2405 140th ave NE #107

Bellevue, WA 98005

(425) 746-4600

## Groundwater Sampling Data Sheet

Project #: 04221002.03

Site: Hidden Valley LF

Well ID: EMAW-1

Sample ID: HVL-0119 21-01

Date: 1/19/21

Weather: Foggy

Filtered?  Y  N

Locked?  Y  N

Water in Protector?  Y  N

Damage?  Y  N

Sample Containers:

1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly
500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber
125 ml NaOH			

Sampling Method: Dedicated 1.75" QED SamplePro Bail Peristaltic Grab Other

Meter: MP-20 YSI

CONTROL SETTINGS:

1 ft water = 0.62L 1L = 0.26 gallons

Refill: 11 One Well Volume (liters) \_\_\_\_\_ Other: \_\_\_\_\_

Discharge: 9 Total Volume Bailed (liters) \_\_\_\_\_

Pressure: 85 Flow Setting: \_\_\_\_\_

Flow: 200 mL/min

DTW: 139.40

TOS: \_\_\_\_\_

Intake: \_\_\_\_\_

BOS: \_\_\_\_\_

Total Depth: \_\_\_\_\_

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
1010		12.88	265		5.86	205.0		
1015		13.36	271	2.52	6.37	206.9		
1018		13.57	271	2.45	6.40	207.2		
1021		13.37	271	2.38	6.43	207.6		
1024		13.35	271	2.35	6.43	208.7		
1027		13.34	271	2.30	6.43	209.2		
1030		13.38	271	2.27	6.42	210.0	1.41	

Notes / Observations (color, odor, anomalies, etc):

Stabilization Parameters: pH/DO ± 0.2, SpC ± 10%, Temp ± 0.5°C, Turb. ± 10% or ≤ 5

SAMPLER: Sam Gabor  
Printed Name

[Signature]  
Signature

# SCS ENGINEERS

2405 140th ave NE #107

Bellevue, WA 98005

(425) 746-4600

## Groundwater Sampling Data Sheet

Project #: 04221002.03

Site: Hidden Valley LF

Well ID: MW-155

Sample ID: HVL-01 9 21-02

Date: 1/19/21

Weather: Cloudy

Filtered?  Y  N

Locked?  Y  N

Water in Protector?  Y  N

Damage?  Y  N

Sample Containers:

1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly
500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber
125 ml NaOH			

Sampling Method: Dedicated | 1.75" QED SamplePro | Bail | Peristaltic | Grab | Other

Meter: MP-20 | YSI

CONTROL SETTINGS:

1 ft water = 0.62L | 1L = 0.26 gallons

Refill: 8 | One Well Volume (liters): \_\_\_\_\_ | Other: \_\_\_\_\_

Discharge: 7 | Flow Setting: \_\_\_\_\_

Pressure: 60 | Total Volume Bailed (liters): \_\_\_\_\_

Flow: 250ml/min

DTW: 71.13'

TOS: \_\_\_\_\_

Intake: \_\_\_\_\_

BOS: \_\_\_\_\_

Total Depth: 89.60'

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
1010		14.1	312.9	<del>0.14</del> 7.04	5.76	236.9	2.56	
1015		14.6	321.9	0.14	5.95	234.0	2.89	
1018		14.6	319.9	0.10	5.97	231.8	2.69	
1021		14.6	317.2	0.08	5.98	230.3	16.94	
1024		14.7	313.1	0.07	5.98	228.9	24.92	
1027		14.5	314.7	0.09	5.98	227.3	25.72	
1030		14.3	312.5	0.08	5.99	225.4	32.95	
1033		14.3	312.5	0.07	5.98	225.1	25.26	

Notes / Observations (color, odor, anomalies, etc):

Changed to 9/16, 50 psi @ 1027

Bubbles spiked turbidity, read 0.55 NTU @ 1033

Stabilization Parameters: pH/DO ± 0.2, SpC ± 10%, Temp ± 0.5°C, Turb. ± 10% or ≤ 5

SAMPLER: Andres Lopez  
Printed Name

[Signature]  
Signature



# SCS ENGINEERS

2405 140th ave NE #107

Bellevue, WA 98005

(425) 746-4600

## Groundwater Sampling Data Sheet

Project #: 04221002.03		Sampling Method: <u>Dedicated</u>	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other	
Site: Hidden Valley LF		Meter: <u>MP-20</u>	<b>CONTROL SETTINGS:</b>		1 ft water = 0.62L	1L = 0.26 gallons		
Well ID: <u>MW-150</u>		<u>YSI</u>	Refill: <u>8</u>	One Well Volume (liters): _____	Other: _____			
Sample ID: <u>HVL-01 9 21- 04</u>			Discharge: <u>7</u>	Total Volume Bailed (liters): _____		Flow Setting: _____		
Date: <u>1/19/21</u>			Pressure: <u>60</u>					
Weather: <u>Cloudy</u>			Flow: <u>300ml/min</u>					
Filtered? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Locked? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Water in Protector? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Damage? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N					
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly				
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber				
	125 ml NaOH							

Notes / Observations (color, odor, anomalies, etc):

aw visibly turbid when filling bottles, after 20 min purge

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
1024		13.7	276.4	1.24	6.24	189.6		
<del>1027</del>								
1029		13.6	276.3	0.39	6.63	194.6		
<del>1030</del>								
1032		13.6	277.3	0.28	6.65	195.8		
1035		13.6	272.9	0.24	6.66	196.3		
1038		13.6	278.5	0.20	6.66	196.7		
1041		13.6	271.2	0.19	6.66	196.9		
1044	75.49'	13.5	279.8	0.15	6.66	197.1	3.00	

Stabilization Parameters: pH/DO ± 0.2, SpC ± 10%, Temp ± 0.5°C, Turb. ± 10% or ≤ 5

SAMPLER: Ashley Lopez  
 Printed Name

[Signature]  
 Signature



# SCS ENGINEERS

2405 140th ave NE #107

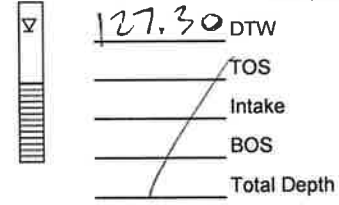
Bellevue, WA 98005

(425) 746-4600

## Groundwater Sampling Data Sheet

Project #: 04221002.03 Sampling Method: Dedicated 1.75" QED SamplePro Bail Peristaltic Grab Other

Site: Hidden Valley LF  
 Well ID: MW-18D  
 Sample ID: HVL-0119 21-05  
 Date: 1/19/21  
 Weather: partly cloudy



Meter: MP-20  
YSI

CONTROL SETTINGS:  
 1 ft water = 0.62L 1L = 0.26 gallons  
 Refill: 11 One Well Volume (liters) Other: \_\_\_\_\_  
 Discharge: 9  
 Pressure: 90 Total Volume Bailed (liters)  
 Flow: 150 ml/min Flow Setting: \_\_\_\_\_

Filtered?  N Locked?  N Water in Protector?  N Damage?  N  
 Sample Containers: 1000 ml Poly 500 ml Poly 250 ml Poly 125 ml Poly  
 500 ml HNO3 x2 500 ml H2SO4 x2 40 ml VOA x3 x6 1000 ml Amber  
 125 ml NaOH

Notes / Observations (color, odor, anomalies, etc):

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
1225		9.99	272	8.5	7.11	161.0		
1230		13.17	253	3.62	6.79	165.9		
1233		13.25	254	3.56	6.79	163.9		
1236		13.32	255	3.50	6.78	161.8		
1239		13.45	255	3.49	6.78	159.8		
1242		13.51	255	3.47	6.78	157.4		
1245		13.59	254	3.31	6.77	154.8	1.47	

Stabilization Parameters: pH/DO ± 0.2, SpC ± 10%, Temp ± 0.5°C, Turb. ± 10% or ≤ 5

SAMPLER: Sam Graber  
 Printed Name

[Signature]  
 Signature

# SCS ENGINEERS

2405 140th ave NE #107

Bellevue, WA 98005

(425) 746-4600

## Groundwater Sampling Data Sheet

Project #: 04221002.03

Site: Hidden Valley LF

Well ID: Mw-14R

Sample ID: HVL-019 21-06

Date: 1/17/21

Weather: Sunny



114.98

DTW \*

TOS

Intake

BOS

Total Depth

Sampling Method:

Dedicated

1.75" QED SamplePro

Bail

Peristaltic

Grab

Other

Meter:

MP-20

YSI

CONTROL SETTINGS:

1 ft water = 0.62L

1L = 0.26 gallons

Refill

8

One Well Volume

Other:

Discharge

7

(liters)

Flow

Pressure

90

Total Volume Bailed

Setting:

Flow

300 ml/min

(liters)

Filtered?  N

Locked?  N

Water in Protector?  N

Damage?  N

Sample Containers:

1000 ml Poly

500 ml Poly

250 ml Poly

125 ml Poly

500 ml HNO3 x2

500 ml H2SO4 x2

40 ml VOA x3 x6

1000 ml Amber

125 ml NaOH

Notes / Observations (color, odor, anomalies, etc):

water level meter unable to get DTW

~~Dissolved iron not sampled on 1/17/21~~

Dissolved iron sampled @ 1520

\* DTW measured 1/21/20

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
1240		11.3	102.6	1.96	6.73	18.3	2.91	
1245		11.1	103.8	0.26	7.18	-15.1	2.70	
1249		11.1	104.1	0.16	7.32	-2.7	2.70	
1251		11.0	104.2	0.10	7.46	0.6	2.64	
1254		10.9	104.2	0.08	7.51	-5.9	2.65	
1257		10.9	104.2	0.08	7.53	-12.2	2.67	
1300		10.9	104.2	0.07	7.54	-18.4	2.68	

Stabilization Parameters: pH/DO ± 0.2, SpC ± 10%, Temp ± 0.5°C, Turb. ± 10% or ≤ 5

SAMPLER: Andres Lopez  
Printed Name

[Signature]  
Signature

# SCS ENGINEERS

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Bellevue, WA 98005

(425) 746-4600

## Groundwater Sampling Data Sheet

Project #: 04221002.03

Site: Hidden Valley LF

Well ID: MW-185

Sample ID: HVL-0119 21-07

Date: 1/19/21

Weather: Sunny



126.51 DTW  
 TOS  
 Intake  
 BOS  
 Total Depth

Sampling Method: Dedicated

1.75" QED SamplePro

Bail

Peristaltic

Grab

Other

Meter:

MP-20

YSI

CONTROL SETTINGS:

Refill 12

Discharge 8

Pressure 80

Flow 200 mL/mL

1 ft water = 0.62L

1L = 0.26 gallons

One Well Volume (liters)

Total Volume Bailed (liters)

Other:

Flow Setting:

Filtered?  N

Locked?  N

Water in Protector?  N

Damage?  N

Sample Containers:

1000 ml Poly

500 ml Poly

250 ml Poly

125 ml Poly

500 ml HNO3 x2

500 ml H2SO4 x2

40 ml VOA x3 x6

1000 ml Amber

125 ml NaOH

Notes / Observations (color, odor, anomalies, etc):

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
1320		11.91	325	9.68	6.84	155.7		
1325		12.91	411	4.01	6.51	163.1		
1328		14.16	472	2.66	6.35	171.2		
1331		14.18	472	2.62	6.34	170.8		
1334		14.25	472	2.60	6.33	170.6		
1337		14.12	472	2.58	6.33	170.2		
1340		14.15	472	2.56	6.32	170.1	1.38	

Stabilization Parameters: pH/DO ± 0.2, SpC ± 10%, Temp ± 0.5°C, Turb. ± 10% or ≤ 5

SAMPLER: Sam Graber  
 Printed Name

[Signature]  
 Signature



# SCS ENGINEERS

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(425) 746-4600

## Groundwater Sampling Data Sheet

Project #: 04221002.03

Site: Hidden Valley LF

Well ID: HW-115

Sample ID: HVL-01 1921-09

Date: 1/19/12

Weather: Sunny

Filtered?  Y  N

Locked?  Y  N

Water in Protector?  Y  N

Damage?  Y  N

Sample Containers:

1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly
500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber
125 ml NaOH			

Sampling Method: Dedicated | 1.75" QED SamplePro | Bail | Peristaltic | Grab | Other

Meter: MP-20 | YSI

CONTROL SETTINGS:

1 ft water = 0.62L | 1L = 0.26 gallons

Refill: 8 | One Well Volume (liters): \_\_\_\_\_ | Other: \_\_\_\_\_

Discharge: 7 | Total Volume Bailed (liters): \_\_\_\_\_ | Flow Setting: \_\_\_\_\_

Pressure: 60 | Flow: 300 ml/min

DTW: 89.05

TOS: \_\_\_\_\_

Intake: \_\_\_\_\_

BOS: \_\_\_\_\_

Total Depth: \_\_\_\_\_

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
1435		12.59	334	2.60	5.93	182.5		
1440		12.61	334	2.01	5.91	185.6		
1443		12.71	334	1.61	5.88	187.4		
1446		12.74	334	1.54	5.87	187.9		
1449		12.77	334	1.54	5.86	188.1		
1452		12.77	333	1.34	5.86	188.2		
1455		12.79	333	1.54	5.86	187.9	1.35	

Notes / Observations (color, odor, anomalies, etc):

Dup collected as

HVL-011921-11 @ 1510

Stabilization Parameters: pH/DO ± 0.2, SpC ± 10%, Temp ± 0.5°C, Turb. ± 10% or ≤ 5

SAMPLER: Sam Gruber  
Printed Name

Signature: [Signature]

# SCS ENGINEERS

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(425) 746-4600

## Groundwater Sampling Data Sheet

Project #: 04221002.03

Site: Hidden Valley LF

Well ID: MW-145

Sample ID: HVL-01 9 21- 10

Date: 11 19 121

Weather: Sunny

Filtered?  N

Locked?  Y

Water in Protector?  Y

Damage?  Y

Sample Containers:

1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly
500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber
125 ml NaOH			

Sampling Method: Dedicated 1.75" QED SamplePro Bail

Meter: MP-20 YSI

CONTROL SETTINGS:

1 ft water = 0.62L 1L = 0.26 gallons

Refill: 10.5 One Well Volume (liters) \_\_\_\_\_ Other: \_\_\_\_\_

Discharge: 4.5 Flow Setting: \_\_\_\_\_

Pressure: 35.45 Total Volume Bailed (liters) \_\_\_\_\_

Flow: 500 ml/min

DTW: 55.2'

TOS: \_\_\_\_\_

Intake: \_\_\_\_\_

BOS: \_\_\_\_\_

Total Depth: \_\_\_\_\_

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
1420		11.1	135.3	1.91	6.03	116.4		
1425		11.1	100.8	1.52	6.02	126.1		
1428		11.1	99.5	1.65	6.01	132.7		
1431		11.1	98.4	1.75	6.00	139.0		
1434		11.1	98.2	1.79	6.00	142.6		
1437		11.1	98.1	1.79	6.00	144.1		
1440		11.1	98.0	1.83	6.00	146.5	4.34	

Notes / Observations (color, odor, anomalies, etc):

Minimum pressure threshold needed for water to flow, but flow is extremely high

High turbidity (~20 NTU) for majority of purge, but cleaned up in later half

Stabilization Parameters: pH/DO ± 0.2, SpC ± 10%, Temp ± 0.5°C, Turb. ± 10% or ≤ 5

SAMPLER: Andres Lopez  
Printed Name

[Signature]  
Signature



# SCS ENGINEERS

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Bellevue, WA 98005

(425) 746-4600

## Groundwater Sampling Data Sheet

Project #: 04221002.03  
 Site: Hidden Valley LF  
 Well ID: MW-11D(2)  
 Sample ID: HVL-01 20 21-13  
 Date: 1/20/21  
 Weather: Cloudy



88.37 DTW  
 TOS  
 Intake  
 BOS  
 Total Depth

Sampling Method:

Dedicated 1.75" QED SamplePro Bail Peristaltic Grab Other

Meter:

MP-20

YSI

CONTROL SETTINGS:

Refill: 8  
 Discharge: 7  
 Pressure: 85  
 Flow: 200 mL/min

1 ft water = 0.62L 1L = 0.26 gallons

One Well Volume (liters):  
 Total Volume Bailed (liters):  
 Other:  
 Flow Setting:

Filtered? Y Locked? Y Water in Protector? Y Damage? Y  
 Sample Containers: 1000 ml Poly 500 ml Poly 250 ml Poly 125 ml Poly  
 500 ml HNO3 x2 500 ml H2SO4 x2 40 ml VOA x3 x6 1000 ml Amber  
 125 ml NaOH

Notes / Observations (color, odor, anomalies, etc):

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
915		9.95	194	7.66	5.54	196.0		
920		12.25	198	4.20	6.58	173.0		
923		12.24	199	4.11	6.66	173.2		
926		12.24	199	4.02	6.72	173.9		
929		12.23	198	4.00	6.75	174.1		
932		12.24	198	3.99	6.77	173.7		
935		12.26	197	4.00	6.78	173.2	2.34	

Stabilization Parameters: pH/DO ± 0.2, SpC ± 10%, Temp ± 0.5°C, Turb. ± 10% or ≤ 5

SAMPLER: Sam Graber  
 Printed Name

[Signature]  
 Signature







# SCS ENGINEERS

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Bellevue, WA 98005

(425) 746-4600

## Groundwater Sampling Data Sheet

Project #: 04221002.03	Sampling Method: <u>Dedicated</u>	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
Site: <u>Hidden Valley LF</u>	DTW: <u>126.05</u> *	Meter: <u>MP-20</u>	CONTROL SETTINGS:			
Well ID: <u>MW-175</u>	TOS: <u>/</u>	<u>YSI</u>	1 ft water = 0.62L	1L = 0.26 gallons		
Sample ID: <u>HVL-01 2021- 16</u>	Intake: <u>/</u>		Refill: <u>8</u>	One Well Volume (liters): _____	Other: _____	
Date: <u>1/20/21</u>	BOS: <u>/</u>		Discharge: <u>7</u>	Flow Setting: _____		
Weather: <u>cloudy</u>	Total Depth: _____		Pressure: <u>80</u>	Total Volume Bailed (liters): _____		
Filtered? <input checked="" type="checkbox"/> N	Locked? <input checked="" type="checkbox"/> Y	Water in Protector? <input checked="" type="checkbox"/> Y	Flow: <u>250ml/min</u>			
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly		
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber		
	125 ml NaOH					

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
1013		16.0	398.8	5.65	6.60	197.2	2.39	
1018		17.8	565	0.32	5.91	189.9	1.81	
1021		17.9	569	0.22	5.90	190.6	1.89	
1024		17.9	570	0.18	5.90	189.9	3.37	
1027		17.9	571	0.16	5.90	188.9	8.66	
1030		18.0	570	0.15	5.90	188.0		
1033		18.1	571	0.14	5.90	186.6	<del>0.10</del> 3.24	

Notes / Observations (color, odor, anomalies, etc):

Bubbles @ 1027, spiked turbidity

\* DTW measured on 1/21/21

Stabilization Parameters: pH/DO ± 0.2, SpC ± 10%, Temp ± 0.5°C, Turb. ± 10% or ≤ 5

SAMPLER: Andres Lopez  
Printed Name

  
Signature





# SCS ENGINEERS

2405 140th ave NE #107

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(425) 746-4600

## Groundwater Sampling Data Sheet

Project #: 04221002.03  
 Site: Hidden Valley LF  
 Well ID: MW-295  
 Sample ID: HVL-0120 21-19  
 Date: 1/20/12  
 Weather: cloudy



13.70 DTW  
 TOS  
 Intake  
 BOS  
 Total Depth

Sampling Method:

Dedicated 1.75" QED SamplePro Bail Peristaltic Grab Other

Meter:

MP-20

YSI

CONTROL SETTINGS:

Refill: 10  
 Discharge: 5  
 Pressure: 25  
 Flow: 300 mL/min

1 ft water = 0.62L 1L = 0.26 gallons

One Well Volume (liters) \_\_\_\_\_ Other: \_\_\_\_\_  
 Total Volume Bailed (liters) \_\_\_\_\_ Flow Setting: \_\_\_\_\_

Filtered? Y Locked? Y Water in Protector? Y Damage? Y  
 Sample Containers: 1000 ml Poly 500 ml Poly 250 ml Poly 125 ml Poly  
 500 ml HNO3 x2 500 ml H2SO4 x2 40 ml VOA x3 x6 1000 ml Amber  
 125 ml NaOH

Notes / Observations (color, odor, anomalies, etc):

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
1215		12.24	265	6.60	6.01	195.8		
1220		11.80	262	0.94	6.42	171.8		
1223		11.81	265	0.90	6.41	171.7		
1226		11.83	267	0.85	6.41	171.6		
1229		11.86	271	0.85	6.40	167.5		
1232		11.88	272	0.79	6.41	166.2		
<u>1235</u>	14.82	11.89	279	0.70	6.39	164.5	27.2	
1238		11.85	285	0.62	6.41	162.6	18.6	
1241		11.88	288	0.57	6.41	160.8	39.0	
1244		11.88	290	0.53	6.37	159.1	36.3	
1247		11.90	293	0.50	6.38	153.9	18.4	

Stabilization Parameters: pH/DO ± 0.2, SpC ± 10%, Temp ± 0.5°C, Turb. ± 10% or ≤ 5

SAMPLER: Sam Gruber  
 Printed Name

[Signature]  
 Signature

# SCS ENGINEERS

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(425) 746-4600

## Groundwater Sampling Data Sheet

Project #: 04221002.03	Sampling Method: <u>Dedicated</u>	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
Site: Hidden Valley LF		Meter: MP-20	CONTROL SETTINGS:			
Well ID: <u>HV-10D</u>		YSI	1 ft water = 0.62L	1L = 0.26 gallons	One Well Volume (liters)	Other:
Sample ID: <u>HVL-01 2021-20</u>	DTW: <u>25.95'</u>	Refill: <u>9</u>	Discharge: <u>6</u>	Pressure: <u>40</u>	Flow: <u>400ml/min</u>	Flow Setting:
Date: <u>1/20/21</u>	TOS: /	Intake: /	BOS: /	Total Depth: /	Total Volume Bailed (liters)	
Weather: <u>cloudy</u>						
Filtered? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Locked? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Water in Protector? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Damage? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N			
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly		
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber		
	125 ml NaOH					

Notes / Observations (color, odor, anomalies, etc):

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TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
1253	25.95'	12.1	297.3	6.16	6.70	84.0	7.62	
1258		12.7	235.7	4.98	6.44	111.7		
1301		12.7	208.0	5.16	6.44	118.0		
1304		12.6	200.4	5.17	6.43	122.6		
1307		12.5	197.8	5.18	6.43	126.2		
1310		12.4	196.3	5.19	6.43	128.8		
1313	25.15'	12.7	193.9	5.15	6.43	131.9	1.50	

Stabilization Parameters: pH/DO ± 0.2, SpC ± 10%, Temp ± 0.5°C, Turb. ± 10% or ≤ 5

SAMPLER: Andres Lopez  
 Printed Name

Signature





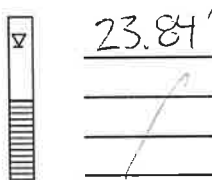
# SCS ENGINEERS

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## Groundwater Sampling Data Sheet

Project #: 04221002.03		Sampling Method: <u>Dedicated</u>	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
Site: Hidden Valley LF	DTW: <u>23.81'</u>	Meter: <u>MP-20</u>	CONTROL SETTINGS:		1 ft water = 0.62L	1L = 0.26 gallons	
Well ID: <u>MW-105</u>	TOS: <u>/</u>	YSI	Refill: <u>9</u>	Discharge: <u>6</u>	One Well Volume (liters): _____	Other: _____	
Sample ID: <u>HVL-01 20 21- 22</u>	Intake: <u>/</u>		Pressure: <u>30</u>	Flow: <u>800 ml/min</u>	Total Volume Bailed (liters): _____	Flow Setting: _____	
Date: <u>1/20/21</u>	BOS: <u>/</u>						
Weather: <u>cloudy</u>	Total Depth: _____						
Filtered? <input checked="" type="checkbox"/> N	Locked? <input checked="" type="checkbox"/> N	Water in Protector? <input checked="" type="checkbox"/> N	Damage? <input checked="" type="checkbox"/> N				
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly			
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber			
	125 ml NaOH						

Notes / Observations (color, odor, anomalies, etc):

← should be ~ 350 ml/min

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
1352		13.0	328.0	4.20	6.33	148.9	3.85	
1357		13.1	332.4	4.25	6.32	156.1	3.82	
<del>1346</del>							<del>3.75</del>	
1400		13.1	332.2	4.23	6.32	160.8	3.73	
<del>1343</del>								
1403		13.1	332.2	4.23	6.32	161.2	3.77	
<del>1346</del>								
1406		13.2	332.1	4.23	6.32	164.2	3.82	
<del>1349</del>								
1409		13.1	332.0	4.22	6.32	165.4	3.80	
<del>13</del>								
1412		13.1	332.0	4.22	6.32	166.4	3.88	

Stabilization Parameters: pH/DO ± 0.2, SpC ± 10%, Temp ± 0.5°C, Turb. ± 10% or ≤ 5

SAMPLER: Andres Lopez  
 Printed Name

  
 Signature

# SCS ENGINEERS

2405 140th ave NE #107

Bellevue, WA 98005

(425) 746-4600

## Groundwater Sampling Data Sheet

Project #: 04221002.03

Site: Hidden Valley LF

Well ID: HW-135

Sample ID: HVL-012021-23

Date: 11/20/21

Weather: Cloudy



20.87 DTW  
 TOS  
 Intake  
 BOS  
 Total Depth

Sampling Method:

Dedicated

1.75" QED SamplePro

Bail

Peristaltic

Grab

Other

Meter:

CONTROL SETTINGS:

MP-20

YSI

Refill

9

Discharge

6

Pressure

40

Flow

200 ml/min

1 ft water = 0.62L

1L = 0.26 gallons

One Well Volume (liters)

Other:

Flow Setting:

Total Volume Bailed (liters)

Filtered?  N

Locked?  N

Water in Protector?  N

Damage?  N

Sample Containers:

1000 ml Poly

500 ml Poly

250 ml Poly

125 ml Poly

500 ml HNO3 x2

500 ml H2SO4 x2

40 ml VOA x3 x6

1000 ml Amber

125 ml NaOH

Notes / Observations (color, odor, anomalies, etc):

\* Cracker gas fittings  
 needs repair.

\*\* switched to N tank, CO2 gone.

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
1355		11.47	249	4.69	6.41	159.0		
1400		11.72	203	3.58	6.21	164.0		
1403		11.40	202	3.49	6.20	165.9		
1406		11.71	201	3.40	6.20	167.8		
1409		11.65	200	3.21	6.19	168.7		
1412**		11.60	199	3.02	6.19	169.5		
1415		10.90	198	3.35	6.18	171.8	1.26	

Stabilization Parameters: pH/DO ± 0.2, SpC ± 10%, Temp ± 0.5°C, Turb. ± 10% or ≤ 5

SAMPLER:

Printed Name

Sam Baber

Signature

*[Handwritten Signature]*















**GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM**

	Conductivity	pH4	pH 7	DO	Turbidity	Comments/Exceptions
Date	1/19/21					
Time	905					
Weather (sky or precip, temp)	Foggy					
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.01	7.00	100% or ~8.5	1000, 10, 0.2 800, 100, 20, <0.1	
Pre-Cal Reading	1440	4.08	6.89	6.58		
Post Cal Reading	1413	4.01	7.00	8.5		
Discrepancy	No					
Calib. Successful?	Yes					
Calibration by	Yes					
Instrument Type, ID	MP20 / YSI 556			MicoTPW / HACH2000		
Calibration Location	HUL					

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

## GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM

	Conductivity	pH4	pH 7	DO	Turbidity	Comments/Exceptions
Date	7/19/21					
Time	0905					
Weather (sky or precip, temp)	cloudy					
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.01	7.00	100% or ~8.5	1000, 10, 0.2 800, 100, 20, <0.1	
Pre-Cal Reading	1404	3.95	6.93	9.07	—	
Post Cal Reading	1413	4.01	7.00	8.5	—	
Discrepancy	—					
Calib. Successful?	Yes					
Calibration by	AEL					
Instrument Type, ID	MP20 / YSI 556			MicoTPW / HACH2000		
Calibration Location	HVL					

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

**GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM**

	Conductivity	pH4	pH 7	DO	Turbidity	Comments/Exceptions
Date	1/20/21					
Time	750					
Weather (sky or precip, temp)	cloudy					
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.01	7.00	100% or ~8.5	1000, 10, 0.2 800, 100, 20, <0.1	
Pre-Cal Reading	1409	3.91	7.07	11.20		
Post Cal Reading	1413	4.01	7.00	8.5		
Discrepancy	No					
Calib. Successful?	YES					
Calibration by	SEB					
Instrument Type, ID	MP20 / YSI 556			MicoTPW / HACH2000		
Calibration Location	HUL					

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

**GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM**

	Conductivity	pH4	pH 7	DO	Turbidity	Comments/Exceptions
Date	1/20/21					
Time	800					
Weather (sky or precip, temp)	Cloudy					
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.01	7.00	100% or ~8.5	1000, 10, 0.2 800, 100, 20, <0.1	
Pre-Cal Reading	1399	4.13	<del>7.07</del> 7.07	9.01	—	
Post Cal Reading	1413	4.01	7.00		—	
Discrepancy	—					
Calib. Successful?	Yes					
Calibration by	AEL					
Instrument Type, ID	MP20 / YSI 556			MicoTPW / HACH2000		
Calibration Location	<del>Fred Meyer Plaza Parking Lot</del> HVC					

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

**GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM**

	Conductivity	pH4	pH 7	DO	Turbidity	Comments/Exceptions
Date	1/21/21					
Time	815					
Weather (sky or precip, temp)	rainy					
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.01	7.00	100% or ~8.5	1000, 10, 0.2 <u>800, 100, 20, &lt;0.1</u>	
Pre-Cal Reading	1451	4.39	6.88	8.38		
Post Cal Reading	1413	4.01	7.00	8.50		
Discrepancy	No					
Calib. Successful?	yes					
Calibration by	SEB					
Instrument Type, ID	MP20 / <u>YSI 558</u>			MicoTPW / <u>HACH2000</u>		
Calibration Location	AVL					

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

**GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM**

	Conductivity	pH4	pH 7	DO	Turbidity	Comments/Exceptions
Date	1/21/21					
Time	830					
Weather (sky or precip, temp)	cloudy					
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.01	7.00	100% or ~8.5	1000, 10, 0.2 800, 100, 20, <0.1	
Pre-Cal Reading	1432	3.92	6.98	8.63	—	
Post Cal Reading	1413	4.01	7.00	8.50	—	
Discrepancy	—					
Calib. Successful?	Yes					
Calibration by	AEL					
Instrument Type, ID	MP20 / YSI 556			MicoTPW / HACH2000		
Calibration Location	<del>LIT 304</del> HVL					

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

# Hidden Valley Landfill

## Water Level Data

Date: 1/20/21

Measured by: S.G. & AL.

	PVC Elevation	Depth to Water	Water Level Elevation	Time	Comments
MW-10S	463.65	23.34			
MW-10D	464.09	25.95			
MW-11S	520.03	89.05			
MW-11D	520.10	89.22			
MW-11D(2)	519.53	88.37			
MW-12S	493.41	61.46			
MW-12D	493.49	62.99			
MW-13S	452.26	20.87			
MW-13D	450.19	20.90			
MW-14S	481.30	55.20			
MW-14D	481.39	47.0			
MW-14R	480.26	114.98			
MW-15S	506.78	76.13			
MW-15D	509.09	75.47			
MW-17S	555.97	126.05			
MW-18S	541.43	126.51			
MW-18D	541.79	127.30			
MW-19S	489.23	51.73			
MW-19D	489.35	60.47			
MW-20R	472.90	102.95			
MW-22U	549.17	131.86			
MW-22L	548.95	137.41			
MW-26R	485.40	64.06			
MW-29S	450.65	13.70			
FMMW-1	546.03	139.90			
FMMW-2	539.96	132.56			
BC-4S	530.25	121.55			
BC-4R	530.31	155.79			

Firing Range - Thursdays - typically after 1:00 PM.

Doug - (253) 846-6767

Larry - works there too

Gate code - 28081 - Revised 8/28/20

TOC elevations surveyed 3/6/19



# Data Validation Report



## SEMI-ANNUAL EVENT NO. 1 - 2021 DATA VALIDATION REPORT – HIDDEN VALLEY LANDFILL

### Project Details

<b>Project No.</b>	04221002.03	<b>Site Name</b>	Hidden Valley Landfill
<b>Data Validator</b>	Ruben Martinez-Barrientos & Sam Graber	<b>Data Level</b>	Level 2
<b>Date</b>	7/22/2021	<b>DV Tier</b>	Tier 1
<b>QA Document</b>	Hidden Valley Landfill Groundwater Monitoring Plan, October 18, 2018.		

### Sample Login Summary

Sample Group	Sample Login Comments	Analytical Lab (Primary)
280-144802-1	No comments.	TestAmerica, Denver, CO
280-144805-1	Due to a Fedex shipping delay, samples were analyzed for nitrate past holding time.	TestAmerica, Denver, CO
280-144805-2	Due to a Fedex shipping delay, select samples were analyzed for nitrate past holding time.	TestAmerica, Denver, CO
280-144858-1	No comments.	TestAmerica, Denver, CO
280-144859-1	Samples "-25", "-26", and "-27" required reanalysis at dilutions past 48-hour holding time for nitrate due to the elevated initial concentrations.	TestAmerica, Denver, CO

### Analytical Summary

Sample Group	Analyses						
	TDS/Alk/ NO3	Metals	NH3/TOC	VOCs	Anions	TSS	COD and Color
280-144802-1	X <sup>4</sup>	X <sup>2</sup>	X	X	X	--	X
280-144805-1	X	X <sup>1</sup>	X	X	X	X	--
280-144805-2	X	X <sup>1</sup>	X	X	X	X	--
280-144858-1	X	X <sup>1</sup>	X	X	X	X	--
280-144859-1	X	X <sup>3</sup>	X	X	X	X	--

Notes:

1. Dissolved metals (Ca, Mg, Na, K, Fe, Mn) and App I total metals
2. Total metals only (As, Fe, Mn, Zn).
3. Total metals (Ca, Mg, Na, K, Fe, Mn) and App I total metals.
4. NO3 only.



**Laboratory Quality Assurance Samples**

Lab QA Samples	Results	Comments
Method Blank	Acceptable.	See case narratives.
LCS/LCSD	Acceptable.	See case narratives.
MS/MSD	Acceptable.	See case narratives.
General Comments	Acceptable.	See case narratives.

**Field Quality Assurance Samples**

Field QA Samples	Sample Group	Analytes	Notes
QC-TB	280-144802-1	None.	
QC-TB	280-144805-2	None.	
QC-FB	280-144805-2	None.	

**Lab Quality Flags**

Flag	Sample Groups	Comments
*1	280-144805-1	LCS/LCSD RPD exceeds control limits.
4	280-144802-1, 280-144805-1, 280-144859-1	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	280-144805-2, 280-144858-1	Compound was found in the blank and sample.
E	280-144802-1, 280-144859-1	Result exceeded calibration range.
F1	280-144802-1, 280-144805-1, 280-144805-2, 280-144858-1, 280-144859-1	MS and/or MSD recovery exceeds the control limits.
F2	280-144802-1, 280-144859-1	MS/MSD RPD exceeds control limits.
F5	280-144858-1	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL.
H	280-144805-1, 280-144805-2, 280-144859-1	Sample was prepped or analyzed beyond specified holding time.
U	280-144802-1, 280-144805-1, 280-144805-2, 280-144858-1, 280-144859-1	Analyte was not detected and is reported as less than the LOD or as defined by the client. The LOD has been adjusted for any dilution or concentration of the sample.

**Duplicate Evaluation**

Analyte	Units	MW-11S (HVL-011921-09)	MW-11S DUP (HVL-011921-11)	RPD (%)
Alkalinity	mg/L	90	90	0.0
Barium, Total	mg/L	0.01	0.01	0.0

Analyte	Units	MW-11S (HVL-011921-09)	MW-11S DUP (HVL-011921-11)	RPD (%)
Calcium, Dissolved	mg/L	28	27	3.6
Chloride	mg/L	16	16	0.0
Magnesium, Dissolved	mg/L	8.3	8.1	2.4
Nitrate as N	mg/L	7.8	7.9	1.3
Potassium, Dissolved	mg/L	6.3	6.1	3.2
Sodium, Dissolved	mg/L	19	19	0.0
Sulfate	mg/L	15	15	0.0
Total Dissolved Solids	mg/L	210	190	10.0
Total Organic Carbon	mg/L	1.1	1.2	8.7

U = Non-detection. Reporting limit (RL) used for calculation of RPD when necessary.

### Additional Data Flags

Flag	Description
U	Not detected above the method reporting limit.

### Qualified Data and Usability

Lab qualifiers are noted. All data, as qualified, are acceptable for use.

# Landfill Gas Monitoring Results

**Landfill Gas Probe Monitoring**

SCS Engineers

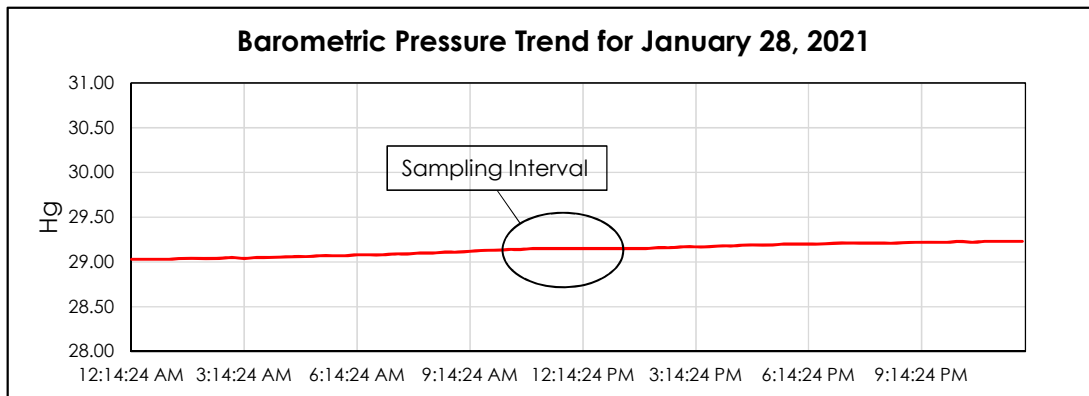
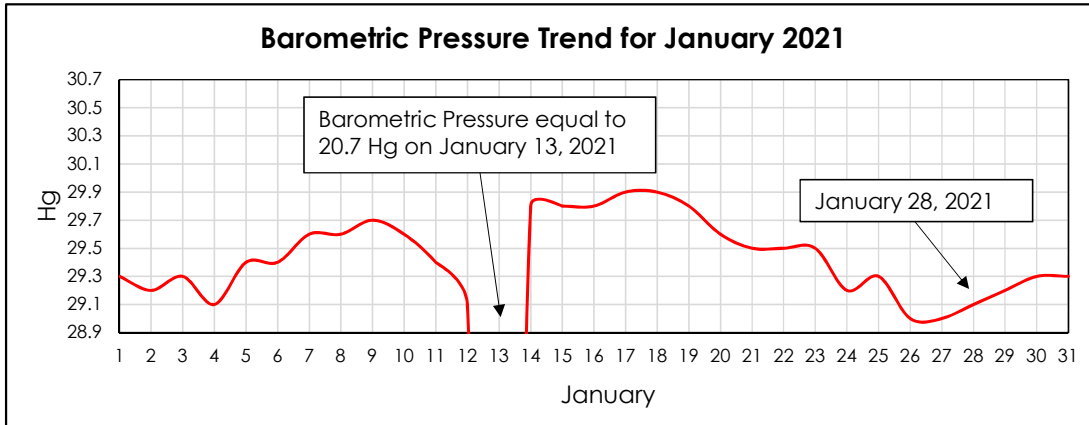
Hidden Valley Landfill  
PCRCO dba LRI

4221002.02  
January 28, 2021

Location Reference Designation	Date	Time	Pressure (in. H <sub>2</sub> O)	CH <sub>4</sub> (% vol.)	CO <sub>2</sub> (% vol.)	O <sub>2</sub> (% vol.)	Spike CH <sub>4</sub> Note 1 (% vol.)	Spike CO <sub>2</sub> Note 1 (% vol.)	Comments
									Other
<b>Gas Probes</b>									
GP-1A	28-Jan-21	10:07	0.11	0.0	5.0	8.5	0.1	-	
GP-1B	28-Jan-21	10:10	0.11	0.0	6.5	13.9	-	-	
GP-1C	28-Jan-21	10:13	0.10	0.0	6.1	13.7	-	-	
GP-2A	28-Jan-21	10:19	0.09	3.7	15.9	0.8	3.7	-	Note 3
GP-2B	28-Jan-21	10:23	0.18	0.0	0.3	21.1	-	-	
GP-3S	28-Jan-21	10:27	0.13	0.0	4.2	10.2	-	-	
GP-3M	28-Jan-21	10:30	0.15	0.0	3.6	7.3	-	-	
GP-3D	28-Jan-21	10:34	0.15	1.9	11.2	1.6	1.9	-	
GP-4A	28-Jan-21	10:39	0.16	0.0	0.7	19.7	-	-	
GP-4B	28-Jan-21	10:42	0.18	0.0	0.2	21.1	-	-	
GP-5A	28-Jan-21	10:49	0.16	0.0	0.1	21.2	-	-	
GP-5B	28-Jan-21	10:52	0.16	0.0	0.1	21.0	-	-	
GP-6	28-Jan-21	10:57	0.16	0.0	0.2	20.9	-	-	
GP-7S	28-Jan-21	11:03	0.16	0.0	0.7	20.3	-	-	
GP-7D	28-Jan-21	11:06	0.16	0.0	0.3	20.7	-	-	
GP-8A	28-Jan-21	11:14	0.16	0.0	0.6	20.6	-	-	
GP-8B	28-Jan-21	11:17	0.16	0.0	0.2	21.0	-	-	
GP-9	28-Jan-21	11:25	0.15	0.0	2.3	17.1	-	-	
GP-10	28-Jan-21	11:31	0.16	0.0	0.2	21.2	-	-	
GP-11	28-Jan-21	11:36	0.16	0.0	2.8	18.0	-	-	
GP-12	28-Jan-21	11:41	0.16	0.0	3.4	15.8	-	-	
GP-13A	28-Jan-21	11:45	0.16	0.0	0.1	21.2	-	-	
GP-13B	28-Jan-21	11:48	0.24	0.0	0.1	21.3	-	-	
GP-14S	28-Jan-21	11:52	0.16	0.0	4.5	16.9	-	-	
GP-14D	28-Jan-21	11:55	0.15	0.0	7.6	6.6	-	-	
GP-15A	28-Jan-21	11:59	0.15	0.0	6.7	5.6	-	-	
GP-15B	28-Jan-21	12:02	0.15	0.5	11.6	0.4	0.5	-	
GP-16A	28-Jan-21	12:08	0.14	0.0	0.6	20.7	-	-	
GP-16B	28-Jan-21	12:11	0.15	0.0	0.4	21.0	-	-	
GP-17	28-Jan-21	12:18	0.14	0.0	2.3	19.5	-	-	
GP-18	28-Jan-21	12:24	0.16	0.0	0.1	21.2	-	-	
GP-19	28-Jan-21	12:31	0.16	0.0	0.9	20.4	-	-	
LFG-1							-	-	Note 2
LFG-2							-	-	Note 2
LFG-3							-	-	Note 2
<b>General Data</b>									
Monitored by: A. Lopez				Weather Conditions					
Instruments: GEM 2000				Sky Cover: Cloudy		Light Drizzle			
Calibration Date: 28-Jan-21				Wind / Rain / Snow: Temperature (°F): 45					
<b>Notes</b>									
1. Measurement for spike concentrations of CH <sub>4</sub> and CO <sub>2</sub> are recorded if observed during sampling									
2. Not monitored. Probe casing rusted shut.									
3. Extended stabilization period (240 seconds).									
<b>Legend</b>									
GP = Gas Probe	CH <sub>4</sub> = Methane	S = shallow	A = shallow						
NM = Not measured	CO <sub>2</sub> = Carbon Dioxide	M = medium	B = medium						
equipment malfunction	O <sub>2</sub> = Oxygen	D = deep	C = deep						

# Barometric Pressure Trend - January 2021

## Hidden Valley Landfill, Pierce County, Washington



Monthly Data Source: Wunderground.com (Puyallup)

Lat: 47.11 Long: 122.29 Elev: 591 ft-AMSL

Data Source: <https://www.wunderground.com/history/monthly/us/wa/puyallup/KPLU/date/2021-1>

Daily Data Source: Wunderground.com (Puyallup)

Lat: 47.11 Long: 122.29 Elev: 591 ft-AMSL

Data Source: <https://www.wunderground.com/history/daily/us/wa/puyallup/KPLU/date/2021-1-28>

# Landfill Gas Probe Monitoring

SCS Engineers

Hidden Valley Landfill

4221002.02

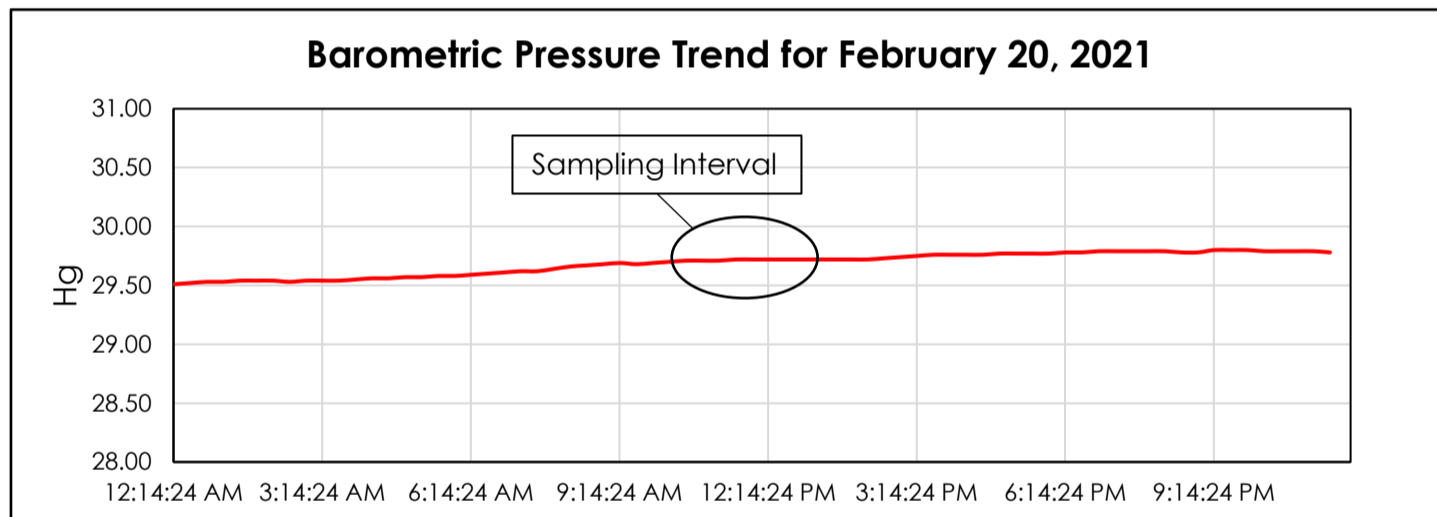
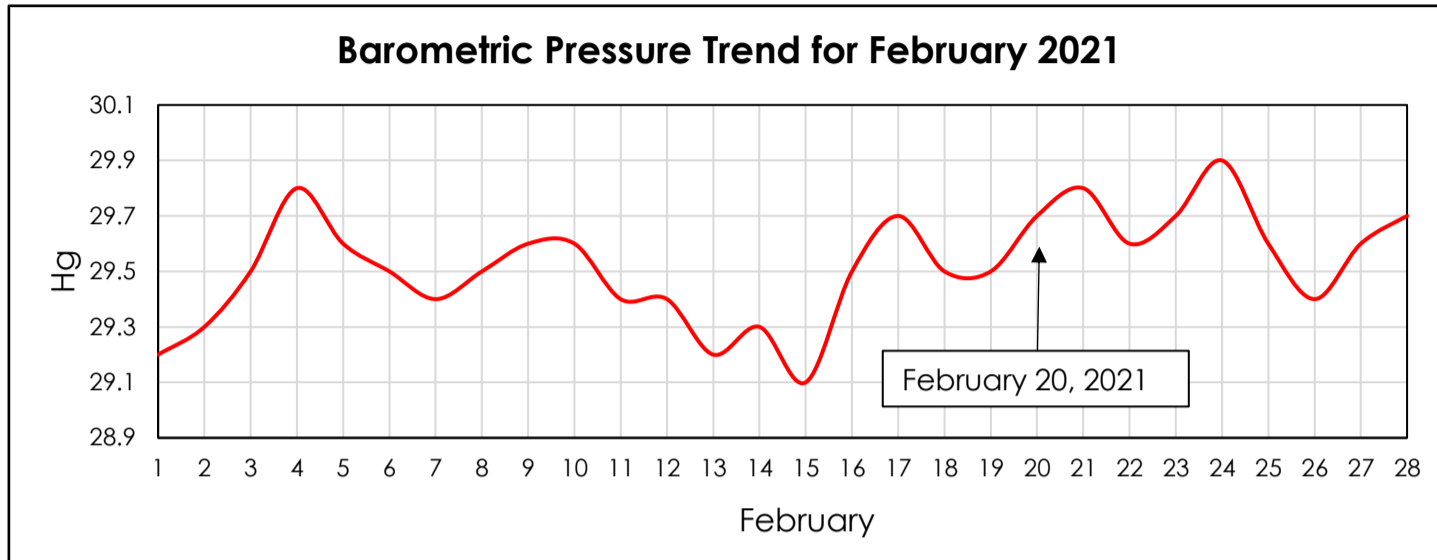
PCRCD dba LRI

February 20, 2021

Location Reference Designation	Date	Time	Pressure (in. H <sub>2</sub> O)	CH <sub>4</sub> (% vol.)	CO <sub>2</sub> (% vol.)	O <sub>2</sub> (% vol.)	Comments		
							Spike CH <sub>4</sub> Note 1 (% vol.)	Spike CO <sub>2</sub> Note 1 (% vol.)	Other
<b>Gas Probes</b>									
GP-1A	20-Feb-21	10:42	0.43	0.0	4.4	10.4	-	-	
GP-1B	20-Feb-21	10:45	0.13	0.0	6.4	14.6	-	-	
GP-1C	20-Feb-21	10:48	0.06	0.0	2.8	17.4	-	-	
GP-2A	20-Feb-21	10:52	0.07	0.2	1.1	19.3	0.2	-	
GP-2B	20-Feb-21	10:55	0.16	0.0	0.1	20.9	-	-	
GP-3S	20-Feb-21	10:59	0.13	0.0	4.1	9.9	-	-	
GP-3M	20-Feb-21	11:02	0.13	0.0	3.6	5.3	-	-	
GP-3D	20-Feb-21	11:05	0.12	0.0	10.9	4.6	-	-	
GP-4A	20-Feb-21	11:11	0.13	0.0	0.2	21.2	-	-	
GP-4B	20-Feb-21	11:14	0.19	0.0	0.1	21.3	-	-	
GP-5A	20-Feb-21	11:18	0.14	0.0	0.0	21.3	-	-	
GP-5B	20-Feb-21	11:21	0.14	0.0	0.0	21.3	-	-	
GP-6	20-Feb-21	11:27	0.16	0.0	0.0	21.3	-	-	
GP-7S	20-Feb-21	11:31	0.15	0.0	0.5	20.7	-	-	
GP-7D	20-Feb-21	11:35	0.14	0.0	0.2	21.2	-	-	
GP-8A	20-Feb-21	11:44	0.16	0.0	0.8	20.1	-	-	
GP-8B	20-Feb-21	11:47	0.16	0.0	0.1	21.1	-	-	
GP-9	20-Feb-21	11:53	0.15	0.0	3.8	17.4	-	-	
GP-10	20-Feb-21	11:57	0.16	0.0	0.1	21.2	-	-	
GP-11	20-Feb-21	12:03	0.14	0.0	1.2	20.0	-	-	
GP-12	20-Feb-21	12:07	0.14	0.0	1.6	17.9	-	-	
GP-13A	20-Feb-21	12:11	0.14	0.0	0.5	20.8	-	-	
GP-13B	20-Feb-21	12:14	0.19	0.0	0.1	21.3	-	-	
GP-14S	20-Feb-21	12:18	0.16	0.0	4.4	17.3	-	-	
GP-14D	20-Feb-21	12:21	0.14	0.0	6.8	8.3	-	-	
GP-15A	20-Feb-21	12:25	0.15	0.0	2.3	17.3	-	-	
GP-15B	20-Feb-21	12:28	0.14	0.0	7.7	7.0	-	-	
GP-16A	20-Feb-21	12:33	0.14	0.0	0.7	20.8	-	-	
GP-16B	20-Feb-21	12:36	0.17	0.0	0.6	20.9	-	-	
GP-17	20-Feb-21	12:43	0.14	0.0	1.5	20.2	-	-	
GP-18	20-Feb-21	12:47	0.15	0.0	0.8	20.4	-	-	
GP-19	20-Feb-21	12:54	0.13	0.0	0.1	21.3	-	-	
LFG-1							-	-	Note 2
LFG-2							-	-	Note 2
LFG-3							-	-	Note 2
<b>General Data</b>									
Monitored by: A. Lopez			Weather Conditions						
Instruments: GEM 2000			Sky Cover: Cloudy			Wind / Rain / Snow: Gentle-moderate			
Calibration Date: 20-Feb-21			Temperature (°F): 47						
<b>Notes</b>									
1. Measurement for spike concentrations of CH <sub>4</sub> and CO <sub>2</sub> are recorded if observed during sampling									
2. Not monitored. Probe casing rusted shut.									
GP = Gas Probe      CH <sub>4</sub> = Methane      S = shallow      A= shallow NM = Not measured      CO <sub>2</sub> = Carbon Dioxide      M = medium      B = medium equipment malfunction      O <sub>2</sub> = Oxygen      D = deep      C = deep									

# Barometric Pressure Trend - February 2021

## Hidden Valley Landfill, Pierce County, Washington



Monthly Data Source: Wunderground.com (Puyallup)

Lat: 47.11 Long: 122.29 Elev: 591 ft-AMSL

Data Source: <https://www.wunderground.com/history/monthly/us/wa/puyallup/KPLU/date/2021-2>

Daily Data Source: Wunderground.com (Puyallup)

Lat: 47.11 Long: 122.29 Elev: 591 ft-AMSL

Data Source: <https://www.wunderground.com/history/daily/us/wa/puyallup/KPLU/date/2021-2-20>



# Landfill Gas Probe Monitoring

SCS Engineers

Hidden Valley Landfill

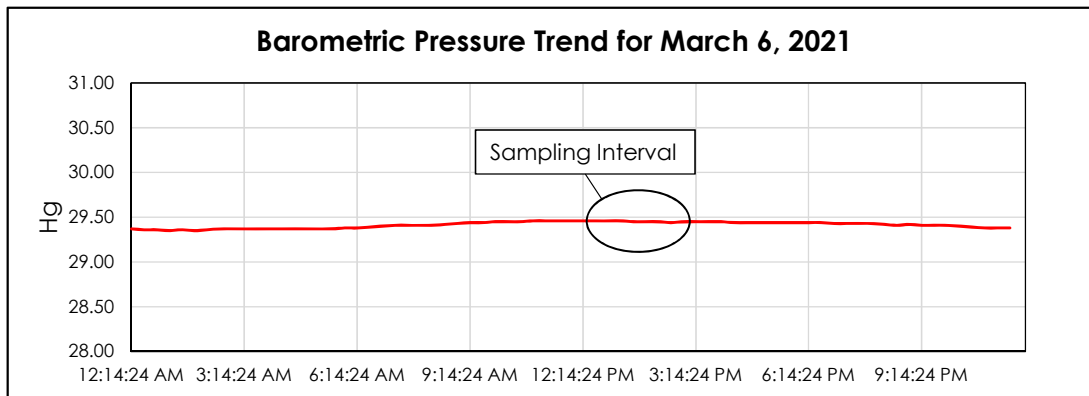
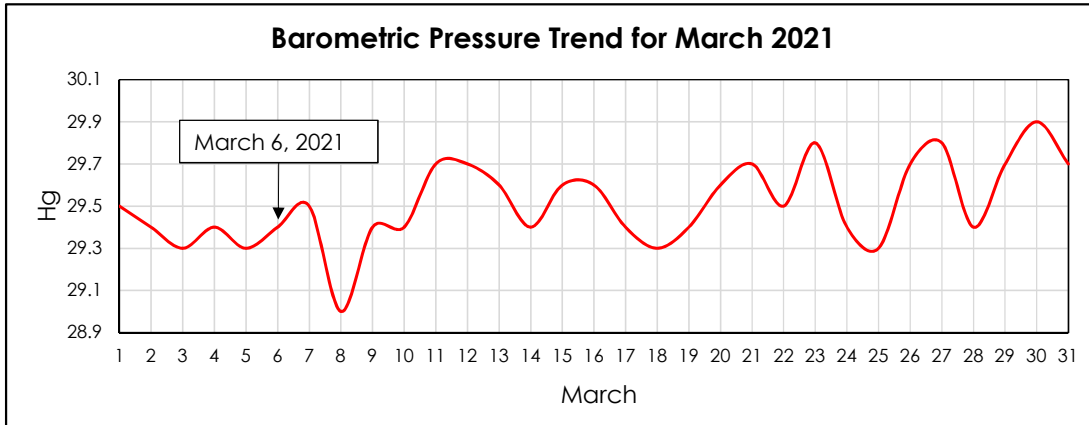
4221002.02

PCRCD dba LRI

March 6, 2021

Location Reference Designation	Date	Time	Pressure (in. H <sub>2</sub> O)	CH <sub>4</sub> (% vol.)	CO <sub>2</sub> (% vol.)	O <sub>2</sub> (% vol.)	Comments		
							Spike CH <sub>4</sub> Note 1 (% vol.)	Spike CO <sub>2</sub> Note 1 (% vol.)	Other
<b>Gas Probes</b>									
GP-1A	6-Mar-21	12:36	0.19	0.0	4.5	10.6	-	-	
GP-1B	6-Mar-21	12:39	0.17	0.0	6.7	13.9	-	-	
GP-1C	6-Mar-21	12:42	0.15	0.0	4.1	15.8	-	-	
GP-2A	6-Mar-21	12:49	0.15	2.2	12.5	5.2	2.2	-	
GP-2B	6-Mar-21	12:52	0.12	0.0	0.2	20.5	-	-	
GP-3S	6-Mar-21	12:55	0.11	0.0	4.1	9.3	-	-	
GP-3M	6-Mar-21	12:59	0.13	0.0	3.9	3.5	-	-	
GP-3D	6-Mar-21	13:02	0.13	2.3	10.7	2.6	2.3	-	
GP-4A	6-Mar-21	13:07	0.14	0.0	0.2	20.5	-	-	
GP-4B	6-Mar-21	13:10	0.15	0.0	0.1	20.7	-	-	
GP-5A	6-Mar-21	13:15	0.12	0.0	0.0	20.7	-	-	
GP-5B	6-Mar-21	13:18	0.11	0.0	0.0	20.7	-	-	
GP-6	6-Mar-21	13:25	0.11	0.0	0.1	20.5	-	-	
GP-7S	6-Mar-21	13:29	0.10	0.0	0.8	19.7	-	-	
GP-7D	6-Mar-21	13:32	0.10	0.0	0.3	20.3	-	-	
GP-8A	6-Mar-21	13:38	0.09	0.0	0.5	20.1	-	-	
GP-8B	6-Mar-21	13:41	0.09	0.0	0.1	20.6	-	-	
GP-9	6-Mar-21	13:46	0.09	0.0	3.4	17.7	-	-	
GP-10	6-Mar-21	13:51	0.10	0.0	0.1	20.8	-	-	
GP-11	6-Mar-21	13:59	0.10	0.0	1.3	18.8	-	-	
GP-12	6-Mar-21	14:03	0.09	0.0	2.2	15.9	-	-	
GP-13A	6-Mar-21	14:07	0.10	0.0	0.5	19.2	-	-	
GP-13B	6-Mar-21	14:10	0.12	0.0	0.1	20.5	-	-	
GP-14S	6-Mar-21	14:14	0.08	0.0	3.8	17.0	-	-	
GP-14D	6-Mar-21	14:17	0.10	0.0	7.3	6.5	-	-	
GP-15A	6-Mar-21	14:21	0.07	0.0	3.3	13.9	-	-	
GP-15B	6-Mar-21	14:24	0.07	0.0	9.1	4.4	-	-	
GP-16A	6-Mar-21	14:28	0.07	0.0	0.5	20.6	-	-	
GP-16B	6-Mar-21	14:31	0.28	0.0	0.5	20.6	-	-	
GP-17	6-Mar-21	14:37	0.08	0.0	0.6	20.4	-	-	
GP-18	6-Mar-21	14:42	0.09	0.0	1.4	19.1	-	-	
GP-19	6-Mar-21	14:47	0.09	0.0	0.6	20.4	-	-	
LFG-1							-	-	Note 2
LFG-2							-	-	Note 2
LFG-3							-	-	Note 2
<b>General Data</b>									
Monitored by: A. Lopez			Weather Conditions						
Instruments: GEM 2000			Sky Cover: Cloudy			Wind / Rain / Snow: Gentle-moderate			
Calibration Date: 6-Mar-21			Temperature (°F): 49						
<b>Notes</b>									
1. Measurement for spike concentrations of CH <sub>4</sub> and CO <sub>2</sub> are recorded if observed during sampling									
2. Not monitored. Probe casing rusted shut.									
GP = Gas Probe      CH <sub>4</sub> = Methane      S = shallow      A= shallow NM = Not measured      CO <sub>2</sub> = Carbon Dioxide      M = medium      B = medium equipment malfunction      O <sub>2</sub> = Oxygen      D = deep      C = deep									

## Barometric Pressure Trend - March 2021 Hidden Valley Landfill, Pierce County, Washington



Monthly Data Source: Wunderground.com (Puyallup)

Lat: 47.11 Long: 122.29 Elev: 591 ft-AMSL

Data Source: <https://www.wunderground.com/history/monthly/us/wa/puyallup/KPLU/date/2021-3>

Daily Data Source: Wunderground.com (Puyallup)

Lat: 47.11 Long: 122.29 Elev: 591 ft-AMSL

Data Source: <https://www.wunderground.com/history/daily/us/wa/puyallup/KPLU/date/2021-3-6>

# Landfill Gas Probe Monitoring

SCS Engineers

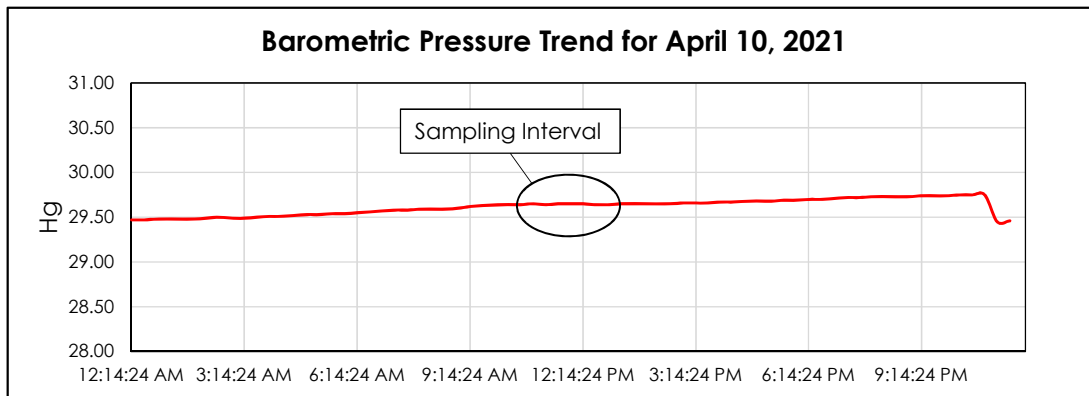
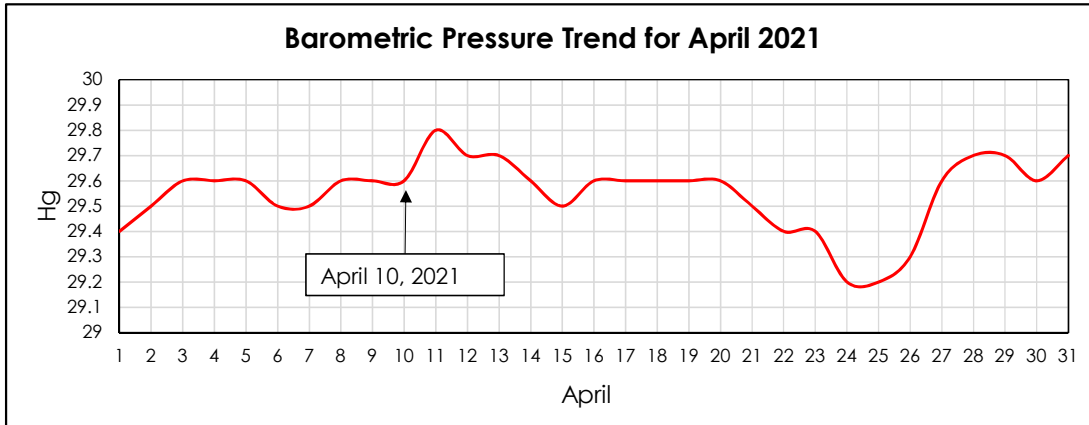
Hidden Valley Landfill  
PCRCO dba LRI

4221002.02  
April 10, 2021

Location Reference Designation	Date	Time	Pressure (in. H <sub>2</sub> O)	CH <sub>4</sub> (% vol.)	CO <sub>2</sub> (% vol.)	O <sub>2</sub> (% vol.)	Comments		
							Spike CH <sub>4</sub> Note 1 (% vol.)	Spike CO <sub>2</sub> Note 1 (% vol.)	Other
<b>Gas Probes</b>									
GP-1A	10-Apr-21	10:31	-	0.0	4.4	11.7	-	-	
GP-1B	10-Apr-21	10:34	-	0.0	6.5	14.6	-	-	
GP-1C	10-Apr-21	10:37	-	0.0	2.3	18.3	-	-	
GP-2A	10-Apr-21	10:44	-	2.2	10.4	8.3	2.2	-	
GP-2B	10-Apr-21	10:50	-	0.0	0.1	21.1	-	-	
GP-3S	10-Apr-21	10:55	-	0.0	4.0	9.5	-	-	
GP-3M	10-Apr-21	10:58	-	0.0	4.6	1.8	-	-	
GP-3D	10-Apr-21	11:01	-	1.6	11.7	2.2	1.6	-	
GP-4A	10-Apr-21	11:08	-	0.0	0.1	21.2	-	-	
GP-4B	10-Apr-21	11:12	-	0.0	0.1	21.2	-	-	
GP-5A	10-Apr-21	11:19	-	0.0	0.0	21.2	-	-	
GP-5B	10-Apr-21	11:22	-	0.0	0.0	21.4	-	-	
GP-6	10-Apr-21	11:30	-	0.0	0.1	21.2	-	-	
GP-7S	10-Apr-21	11:36	-	0.0	0.6	20.8	-	-	
GP-7D	10-Apr-21	11:40	-	0.0	0.2	21.1	-	-	
GP-8A	10-Apr-21	11:49	-	0.0	0.4	20.3	-	-	
GP-8B	10-Apr-21	11:53	-	0.0	0.2	21.0	-	-	
GP-9	10-Apr-21	12:00	-	0.0	3.2	18.7	-	-	
GP-10	10-Apr-21	12:06	-	0.0	0.1	21.1	-	-	
GP-11	10-Apr-21	12:13	-	0.0	1.3	19.9	-	-	
GP-12	10-Apr-21	12:20	-	0.0	0.7	20.2	-	-	
GP-13A	10-Apr-21	12:24	-	0.0	2.7	16.3	-	-	
GP-13B	10-Apr-21	12:28	-	0.0	0.1	21.1	-	-	
GP-14S	10-Apr-21	12:34	-	0.0	4.0	17.1	-	-	
GP-14D	10-Apr-21	12:38	-	0.0	6.8	8.2	-	-	
GP-15A	10-Apr-21	12:43	-	0.0	2.9	16.6	-	-	
GP-15B	10-Apr-21	12:46	-	0.0	9.3	6.2	-	-	
GP-16A	10-Apr-21	12:52	-	0.0	0.3	21.0	-	-	
GP-16B	10-Apr-21	12:56	-	0.0	0.3	21.1	-	-	
GP-17	10-Apr-21	13:04	-	0.0	0.5	20.9	-	-	
GP-18	10-Apr-21	13:10	-	0.0	1.6	19.7	-	-	
GP-19	10-Apr-21	13:16	-	0.0	0.5	20.9	-	-	
LFG-1									Note 2
LFG-2									Note 2
LFG-3									Note 2
<b>General Data</b>									
Monitored by: A. Lopez				Weather Conditions					
Instruments: GEM 2000				Sky Cover: Mostly Cloudy		Light Wind			
Calibration Date: 10-Apr-21				Wind / Rain / Snow: 48		Temperature (°F):			
<b>Notes</b>									
1. Measurement for spike concentrations of CH <sub>4</sub> and CO <sub>2</sub> are recorded if observed during sampling									
2. Not monitored. Probe casing rusted shut.									
3. Pressure was not recorded this month due to a pressure transducer error.									
<b>Legend</b>									
GP = Gas Probe	CH <sub>4</sub> = Methane	S = shallow	A = shallow						
NM = Not measured	CO <sub>2</sub> = Carbon Dioxide	M = medium	B = medium						
equipment malfunction	O <sub>2</sub> = Oxygen	D = deep	C = deep						

# Barometric Pressure Trend - April 2021

## Hidden Valley Landfill, Pierce County, Washington



Monthly Data Source: Wunderground.com (Puyallup)  
Lat: 47.11 Long: 122.29 Elev: 591 ft-AMSL

Data Source: <https://www.wunderground.com/history/monthly/us/wa/puyallup/KPLU/date/2021-4>

Daily Data Source: Wunderground.com (Puyallup)  
Lat: 47.11 Long: 122.29 Elev: 591 ft-AMSL

Data Source: <https://www.wunderground.com/history/daily/us/wa/puyallup/KPLU/date/2021-4-10>

# Landfill Gas Probe Monitoring

SCS Engineers

Hidden Valley Landfill

4221002.02

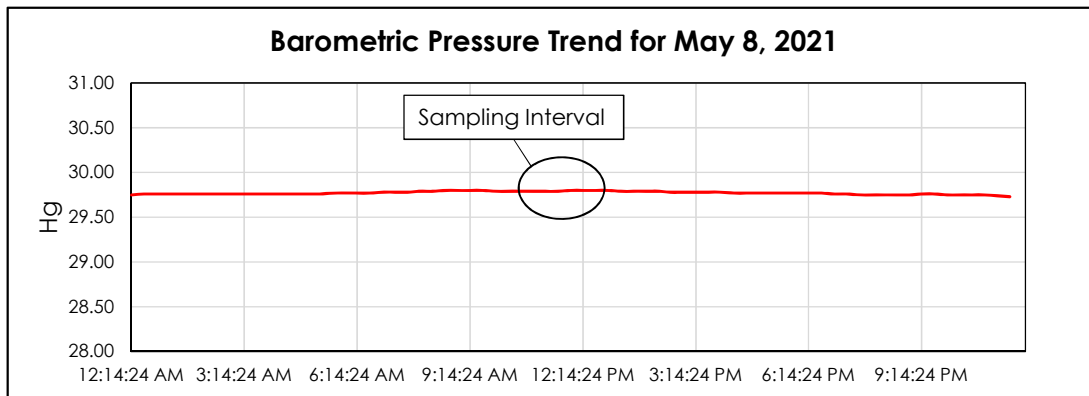
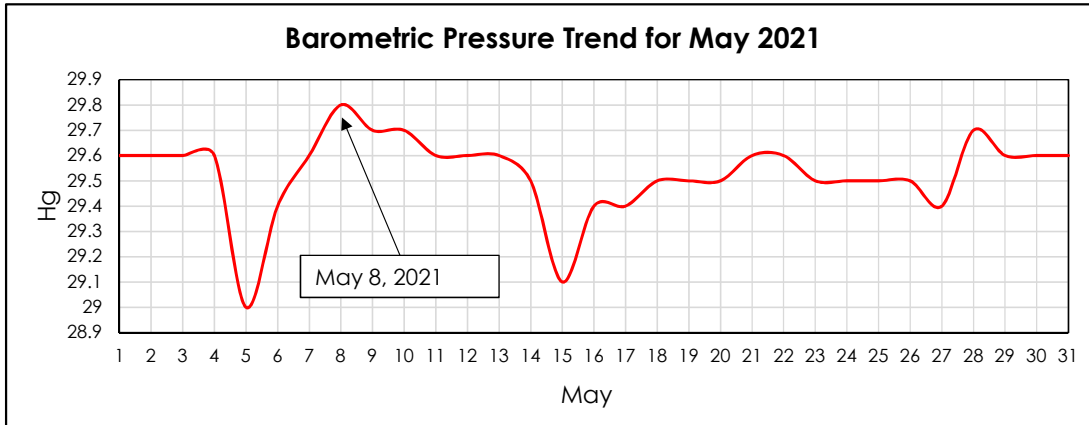
PCRCD dba LRI

May 8, 2021

Location Reference Designation	Date	Time	Pressure (in. H <sub>2</sub> O)	CH <sub>4</sub> (% vol.)	CO <sub>2</sub> (% vol.)	O <sub>2</sub> (% vol.)	Comments		
							Spike CH <sub>4</sub> Note 1 (% vol.)	Spike CO <sub>2</sub> Note 1 (% vol.)	Other
<b>Gas Probes</b>									
GP-1A	8-May-21	10:30	0.97	0.0	3.9	13.0	-	-	
GP-1B	8-May-21	10:33	0.95	0.0	8.8	12.6	-	-	
GP-1C	8-May-21	10:36	0.96	0.0	0.3	20.8	-	-	
GP-2A	8-May-21	10:53	0.94	6.5	16.1	0.8	6.5	-	
GP-2B	8-May-21	10:57	1.00	0.0	0.1	20.8	-	-	
GP-3S	8-May-21	11:04	0.93	0.0	1.1	17.9	-	-	
GP-3M	8-May-21	11:14	0.94	0.0	3.7	5.3	-	-	
GP-3D	8-May-21	11:17	0.93	0.0	7.8	10.6	-	-	
GP-4A	8-May-21	11:21	0.93	0.0	0.1	20.9	-	-	
GP-4B	8-May-21	11:26	0.94	0.0	0.0	20.9	-	-	
GP-5A	8-May-21	11:29	0.91	0.0	0.0	20.9	-	-	
GP-5B	8-May-21	11:34	0.90	0.0	0.0	21.0	-	-	
GP-6	8-May-21	11:36	0.90	0.0	0.1	20.9	-	-	
GP-7S	8-May-21	11:41	0.91	0.0	0.7	20.5	-	-	
GP-7D	8-May-21	11:46	0.90	0.0	0.1	21.2	-	-	
GP-8A	8-May-21	11:49	0.91	0.0	0.8	18.8	-	-	
GP-8B	8-May-21	11:56	0.91	0.0	0.7	20.5	-	-	
GP-9	8-May-21	12:00	0.91	0.0	2.9	18.3	-	-	
GP-10	8-May-21	12:04	0.91	0.0	0.1	21.2	-	-	
GP-11	8-May-21	12:10	0.90	0.0	1.1	20.4	-	-	
GP-12	8-May-21	12:14	0.90	0.0	0.8	20.1	-	-	
GP-13A	8-May-21	12:19	0.93	0.0	1.8	19.5	-	-	
GP-13B	8-May-21	12:23	0.91	0.0	0.1	21.2	-	-	
GP-14S	8-May-21	12:27	0.92	0.0	3.8	17.6	-	-	
GP-14D	8-May-21	12:31	0.90	0.0	6.4	9.1	-	-	
GP-15A	8-May-21	12:34	0.90	0.0	2.3	17.4	-	-	
GP-15B	8-May-21	12:38	0.91	0.0	8.4	9.6	-	-	
GP-16A	8-May-21	12:41	0.88	0.0	0.3	21.1	-	-	
GP-16B	8-May-21	12:46	0.92	0.0	0.3	21.2	-	-	
GP-17	8-May-21	12:49	0.89	0.0	0.6	20.7	-	-	
GP-18	8-May-21	12:55	0.90	0.0	3.1	18.9	-	-	
GP-19	8-May-21	12:59	0.91	0.0	0.1	21.4	-	-	
LFG-1									Note 2
LFG-2									Note 2
LFG-3									Note 2
<b>General Data</b>									
Monitored by: R. Martinez			Weather Conditions			Sky Cover: Partly Cloudy			
Instruments: GEM 2000			Wind / Rain / Snow:			Light Wind			
Calibration Date: 8-May-21			Temperature (°F):			50			
<b>Notes</b>									
1. Measurement for spike concentrations of CH <sub>4</sub> and CO <sub>2</sub> are recorded if observed during sampling									
2. Not monitored. Probe casing rusted shut.									
GP = Gas Probe      CH <sub>4</sub> = Methane      S = shallow      A = shallow NM = Not measured      CO <sub>2</sub> = Carbon Dioxide      M = medium      B = medium equipment malfunction      O <sub>2</sub> = Oxygen      D = deep      C = deep									

# Barometric Pressure Trend - May 2021

## Hidden Valley Landfill, Pierce County, Washington



Monthly Data Source: Wunderground.com (Puyallup)  
Lat: 47.11 Long: 122.29 Elev: 591 ft-AMSL

Data Source: <https://www.wunderground.com/history/monthly/us/wa/puyallup/KPLU/date/2021-5>

Daily Data Source: Wunderground.com (Puyallup)  
Lat: 47.11 Long: 122.29 Elev: 591 ft-AMSL

Data Source: <https://www.wunderground.com/history/daily/us/wa/puyallup/KPLU/date/2021-5-8>

# Landfill Gas Probe Monitoring

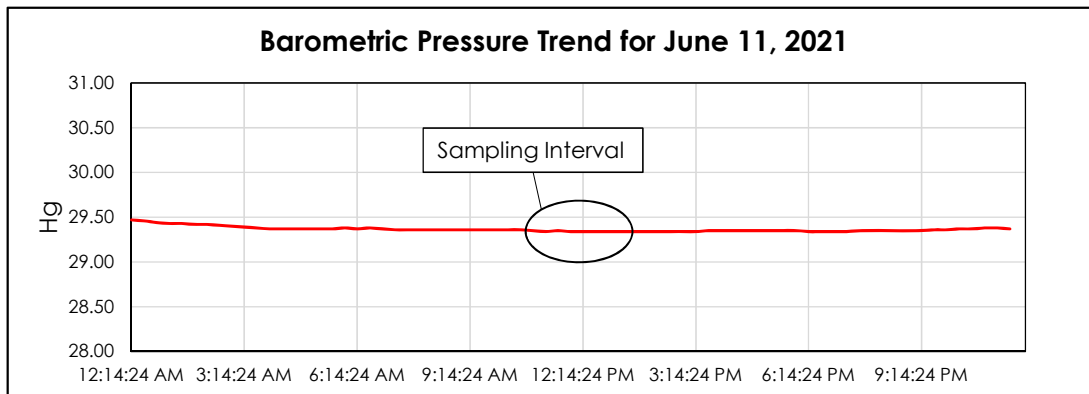
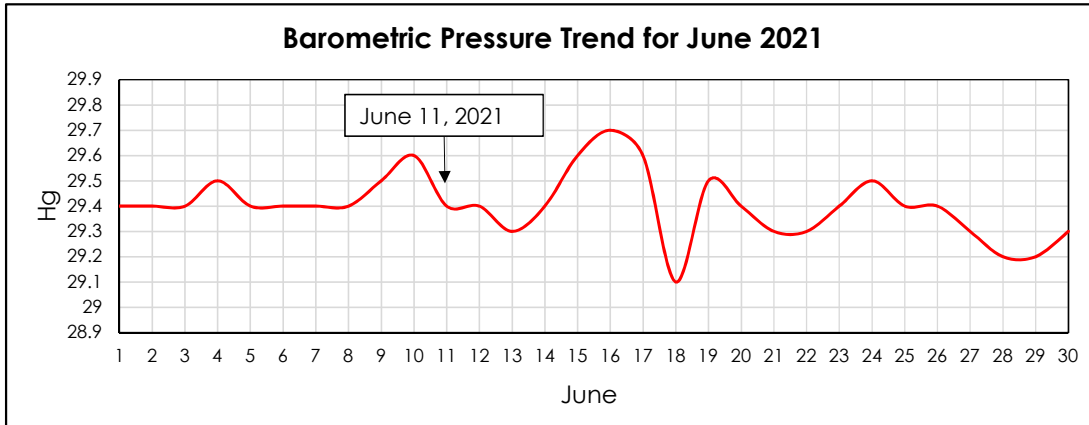
SCS Engineers

Hidden Valley Landfill  
PCRCO dba LRI

4221002.02  
June 11, 2021

Location Reference Designation	Date	Time	Pressure (in. H <sub>2</sub> O)	CH <sub>4</sub> (% vol.)	CO <sub>2</sub> (% vol.)	O <sub>2</sub> (% vol.)	Comments		
							Spike CH <sub>4</sub> Note 1 (% vol.)	Spike CO <sub>2</sub> Note 1 (% vol.)	Other
<b>Gas Probes</b>									
GP-1A	11-Jun-21	10:23	-0.03	0.0	0.8	20.9	-	-	
GP-1B	11-Jun-21	10:26	-0.01	0.0	6.0	14.2	-	-	
GP-1C	11-Jun-21	10:30	-0.03	0.0	1.7	19.5	-	-	
GP-2A	11-Jun-21	10:36	-0.02	0.4	1.0	19.6	0.4	-	
GP-2B	11-Jun-21	10:39	-0.02	0.0	0.3	21.1	-	-	
GP-3S	11-Jun-21	10:48	-0.02	0.0	1.1	17.5	-	-	
GP-3M	11-Jun-21	10:51	0.00	0.0	2.6	9.5	-	-	
GP-3D	11-Jun-21	10:54	-1.76	0.0	3.5	15.4	-	-	
GP-4A	11-Jun-21	13:37	0.00	0.0	0.7	20.1	-	-	
GP-4B	11-Jun-21	13:40	-1.97	0.0	0.3	20.9	-	-	
GP-5A	11-Jun-21	13:44	0.00	0.0	0.4	20.8	-	-	
GP-5B	11-Jun-21	13:47	0.00	0.0	0.3	20.3	-	-	
GP-6	11-Jun-21	11:10	-0.01	0.0	0.8	20.7	-	-	
GP-7S	11-Jun-21	11:22	-0.02	0.0	0.8	20.5	-	-	
GP-7D	11-Jun-21	11:27	-0.01	0.0	0.2	21.1	-	-	
GP-8A	11-Jun-21	11:37	-0.01	0.0	1.4	18.4	-	-	
GP-8B	11-Jun-21	11:40	-0.02	0.0	1.6	19.1	-	-	
GP-9	11-Jun-21	13:53	0.00	0.0	1.7	18.5	-	-	
GP-10	11-Jun-21	11:52	-0.01	0.0	0.4	21.0	-	-	
GP-11	11-Jun-21	12:00	0.00	0.0	0.5	20.4	-	-	
GP-12	11-Jun-21	12:14	-0.01	0.0	1.3	17.9	-	-	
GP-13A	11-Jun-21	12:19	-0.01	0.0	0.5	20.6	-	-	
GP-13B	11-Jun-21	12:23	0.00	0.0	0.2	21.1	-	-	
GP-14S	11-Jun-21	12:32	-0.03	0.0	2.6	18.5	-	-	
GP-14D	11-Jun-21	12:35	-0.02	0.0	3.6	13.3	-	-	
GP-15A	11-Jun-21	12:40	-0.02	0.0	3.1	17.1	-	-	
GP-15B	11-Jun-21	12:44	-0.02	0.0	6.4	11.2	-	-	
GP-16A	11-Jun-21	12:54	0.00	0.0	1.8	19.0	-	-	
GP-16B	11-Jun-21	12:57	-0.06	0.0	2.1	18.3	-	-	
GP-17	11-Jun-21	13:08	-0.01	0.0	3.1	18.1	-	-	
GP-18	11-Jun-21	13:14	-0.01	0.0	5.6	14.7	-	-	
GP-19	11-Jun-21	13:22	-0.01	0.0	0.9	20.8	-	-	
LFG-1							-	-	Note 2
LFG-2							-	-	Note 2
LFG-3							-	-	Note 2
<b>General Data</b>									
Monitored by: R. Martinez				Weather Conditions					
Instruments: GEM 2000				Sky Cover: Partly Cloudy		Light Wind			
Calibration Date: 11-Jun-21				Wind / Rain / Snow:		Temperature (°F): 55			
<b>Notes</b>									
1. Measurement for spike concentrations of CH <sub>4</sub> and CO <sub>2</sub> are recorded if observed during sampling									
2. Not monitored. Probe casing rusted shut.									
<b>Legend</b>									
GP = Gas Probe	CH <sub>4</sub> = Methane	S = shallow	A = shallow						
NM = Not measured	CO <sub>2</sub> = Carbon Dioxide	M = medium	B = medium						
equipment malfunction	O <sub>2</sub> = Oxygen	D = deep	C = deep						

## Barometric Pressure Trend - June 2021 Hidden Valley Landfill, Pierce County, Washington



Monthly Data Source: Wunderground.com (Puyallup)

Lat: 47.11 Long: 122.29 Elev: 591 ft-AMSL

Data Source: <https://www.wunderground.com/history/monthly/us/wa/puyallup/KPLU/date/2021-6>

Daily Data Source: Wunderground.com (Puyallup)

Lat: 47.11 Long: 122.29 Elev: 591 ft-AMSL

Data Source: <https://www.wunderground.com/history/daily/us/wa/puyallup/KPLU/date/2021-6-11>



# Hidden Valley Landfill

## Landfill Gas Monitoring of On-site Buildings

Date: 3/4/2021

Weather Conditions: Cloudy

Instrument: MicroFID

Measured By: Andres Lopez

The atmosphere inside buildings at the landfill were monitored for possible intrusion of methane gas. Per WAC 173-351, concentrations of methane in on-site structures must not exceed 25% of the lower explosive limit (LEL). If off-site gas migration is suspected, concentrations of methane in off-site structures must not exceed 100 ppm methane.

The areas monitored included:

- The general overall work area
- Floor drains
- Underground conduit protrusions
- Closed areas where landfill gas could collect, such as under cupboards and inside closets

The gas detection instrument must be calibrated using calibration gas containing methane equal to 50 % LEL. Calibration must be performed before and after the survey is completed.

Checked boxes indicate that the survey revealed **no detectable methane**.

- Main Office - individual office spaces, storage areas and within open crawl-space area.
- Repair Shop – survey atmosphere conditions throughout (lower height levels).
- Pay/Scale Booth – interior of building.
- Recycle Building – throughout facility and water drainage areas.
- Leachate Treatment Building – all lower level office spaces, restrooms, water drainage system and storage/equipment areas.
- Gas to Energy Building – central monitoring/control room, engine room and storage cabinets.
- Transfer Station Building – throughout entire building and lower levels.



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Signature

# Hidden Valley Landfill Landfill Gas Monitoring of On-site Buildings

Date: 5/7/2021

Weather Conditions: Cloudy

Instrument: MicroFID

Measured By: Andres Lopez

The atmosphere inside buildings at the landfill were monitored for possible intrusion of methane gas. Per WAC 173-351, concentrations of methane in on-site structures must not exceed 25% of the lower explosive limit (LEL). If off-site gas migration is suspected, concentrations of methane in off-site structures must not exceed 100 ppm methane.

The areas monitored included:

- The general overall work area
- Floor drains
- Underground conduit protrusions
- Closed areas where landfill gas could collect, such as under cupboards and inside closets

The gas detection instrument must be calibrated using calibration gas containing methane equal to 50 % LEL. Calibration must be performed before and after the survey is completed.

Checked boxes indicate that the survey revealed **no detectable methane**.

- \* Main Office - individual office spaces, storage areas and within open crawl-space area.
  - Repair Shop – survey atmosphere conditions throughout (lower height levels).
  - Pay/Scale Booth – interior of building.
  - Recycle Building – throughout facility and water drainage areas.
  - Leachate Treatment Building – all lower level office spaces, restrooms, water drainage system and storage/equipment areas.
  - Gas to Energy Building – central monitoring/control room, engine room and storage cabinets.
  - Transfer Station Building – throughout entire building and lower levels.
- \* Main Office was closed during monitoring event.



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Signature

## Site Inspection Reports

**Condensate Recirculation Inspection Checklist**  
**Hidden Valley Landfill, Pierce County, Washington**

Name: Andres Lopez

Date: 3/4/2021

Signature: 

Weather: Cloudy

**Instructions:** Inspect each sump for pump operation and measure condensate fluid level, which should be below the overflow drainage pipe. Note any unusual observations such as soil staining or air leaks in the comments section.

Sump	Operation per Design (Y or N)	(1) Depth to Condensate (ft)	(2) Depth to Bottom (ft)	Height of Condensate (ft) = (2) - (1)	Comments
Sump No. 1	Y	-	9.43	-	Dry
Sump No. 2	Y	6.39	8.50	2.11	
Sump No. 3	Y	-	8.95	-	Dry
Sump No. 4	Y	6.20	8.50	2.30	
Sump No. 5	Y	7.75	9.90	2.15	
Sump No. 6	Y	7.40	9.10	1.70	Measured 3/19/21
Sump No. 7	Y	-	9.20	-	Dry. Measured 3/19/21
Sump No. 8	Y	6.70	9.40	2.70	Measured 3/19/21
Sump No. 9	Y	6.71	9.40	2.69	
Sump No. 10	Y	-	9.52	-	Dry
Sump No. 11	Y	7.22	9.55	2.33	

**Other Remarks:**

# Facility Inspection Checklist

Hidden Valley Landfill, Pierce County, Washington

Name: Andres Lopez

Date: 3/19/21

Signature: 

Weather: Partly Cloudy

Items	Yes	No	Comments
<b>Cover System</b>			
Settlement Depressions (sinkholes)		X	
Cracking of Cover Soils		X	
Inadequate Cover Soil or Rock		X	
Standing Water		X	
<b>Vegetation</b>			
Bare or Sparsely Vegetated Areas		X	
Areas of Dying Vegetation		X	
Large Root Vegetation (ex. Bushes)		X	
<b>Stormwater Conveyance System</b>			
Ditch Obstructions or Flat Areas		X	
Culvert Obstructions		X	
Catch Basin Debris or Silt Accumulation		X	
Stormwater Basin Debris or Silt		X	
<b>Cover Erosion</b>			
Gullies and/or Erosion Scars		X	
Presence of Seeps		X	
<b>Vector Control</b>			
Evidence of Ground Burrows		X	
<b>Leachate Collection &amp; Leak Detection Systems</b>			
Piping or Valve Issues		X	
Pump or Meter Issues		X	
Foaming at Pump		X	

Other Remarks:

**Condensate Recirculation Inspection Checklist**  
**Hidden Valley Landfill, Pierce County, Washington**

Name: Andres Lopez

Date: 4/10/21

Signature: [Signature]

Weather: Sunny

**Instructions:** Inspect each sump for pump operation and measure condensate fluid level, which should be below the overflow drainage pipe. Note any unusual observations such as soil staining or air leaks in the comments section.

Sump	Operation per Design (Y or N)	(1) Depth to Condensate (ft)	(2) Depth to Bottom (ft)	Height of Condensate (ft) = (2) - (1)	Comments
Sump No. 1	Y	—	9.35		
Sump No. 2	Y	6.40	8.50		
Sump No. 3	Y	—	8.85		
Sump No. 4	Y	6.30	8.50		
Sump No. 5	Y	7.25	7.95		
Sump No. 6	Y	7.30	9.15		
Sump No. 7	Y	—	9.20		
Sump No. 8	Y	6.70	9.40		
Sump No. 9	Y	7.85	9.40		
Sump No. 10	N	—	9.52		
Sump No. 11	Y	7.22	9.50		

**Other Remarks:**

# Facility Inspection Checklist

## Hidden Valley Landfill, Pierce County, Washington

Name: Andres Lopez

Date: 4/10/21

Signature: [Signature]

Weather: Sunny

Items	Yes	No	Comments
<b>Cover System</b>			
Settlement Depressions (sinkholes)		✓	
Cracking of Cover Soils		✓	
Inadequate Cover Soil or Rock		✓	
Standing Water		✓	
<b>Vegetation</b>			
Bare or Sparsely Vegetated Areas		✓	
Areas of Dying Vegetation		✓	
Large Root Vegetation (ex. Bushes)		✓	
<b>Stormwater Conveyance System</b>			
Ditch Obstructions or Flat Areas		✓	
Culvert Obstructions		✓	
Catch Basin Debris or Silt Accumulation		✓	
Stormwater Basin Debris or Silt		✓	
<b>Cover Erosion</b>			
Gullies and/or Erosion Scars		✓	
Presence of Seeps		✓	
<b>Vector Control</b>			
Evidence of Ground Burrows		✓	
<b>Leachate Collection &amp; Leak Detection Systems</b>			
Piping or Valve Issues		✓	
Pump or Meter Issues		✓	
Foaming at Pump		✓	

Other Remarks:

# GCCS Maintenance Reports



# Hidden Valley Landfill LFG System Monitoring & Maintenance

January 14<sup>th</sup>, 20<sup>th</sup>, 21<sup>st</sup> and 28<sup>th</sup>, 2021

## MAINTENANCE ITEMS COMPLETED THIS MONTH:

- Performed unscheduled maintenance at the flare on January 14<sup>th</sup>.
- Performed monthly extraction well monitoring on January 20<sup>th</sup> and 21<sup>st</sup>.
- Performed LFG repairs at N57, N-14, N-32, and N-17 on January 28<sup>th</sup>.

## LANDFILL FLARE STATION

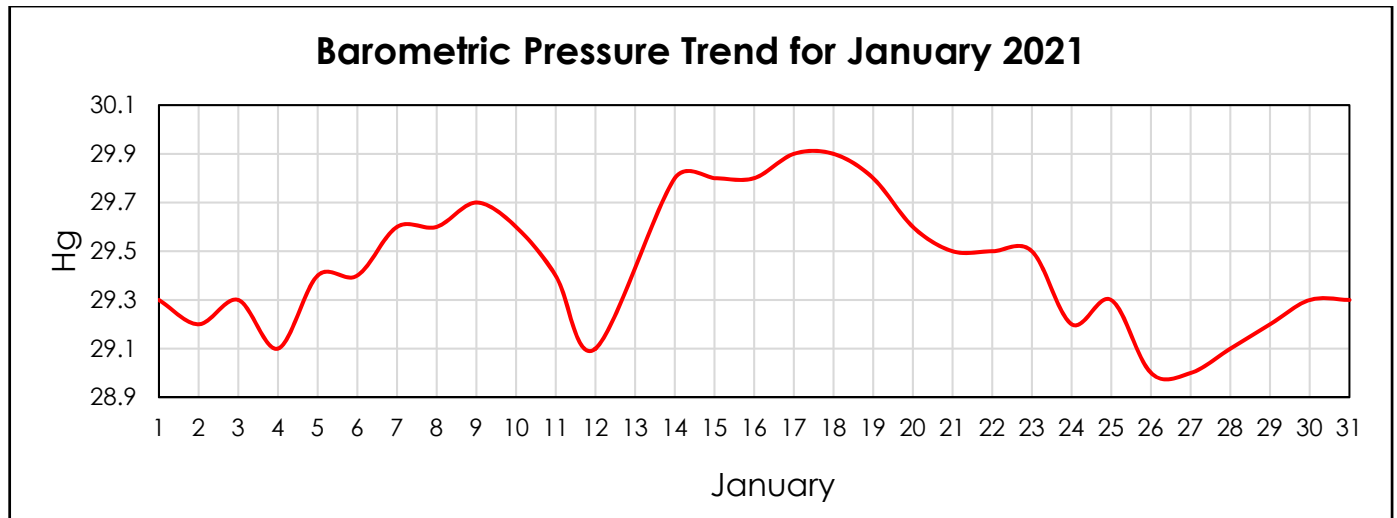
### Before system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
1/20/2021 10:01	37.4	22.5	4.1	36.0	118	118	29.63
1/21/2021 8:17	42.7	24.0	2.2	31.1	132	132	29.49

### After system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
1/20/2021 16:19	41.6	23.9	2.3	32.2	144	144	29.55
1/21/2021 13:43	43.5	24.4	1.8	30.3	172	172	29.47

## Barometric Pressure Trends for January 2021



Data Source: <https://www.wunderground.com/history/monthly/us/wa/puyallup/KPLU/date/2021-1>

**3" LFG Hose Replaced at N-57 (1)**



**(2)**



**3" Tee and 3" LFG Hose Repaired at N-32 (1)**



**(2)**



**2" Inlet Line on Condensate Trap Repair at N-32**



**Well Head Repaired at N-14**

No figure available.

# Hidden Valley Landfill LFG System Monitoring & Maintenance

February 9<sup>th</sup> and 10<sup>th</sup>, 2021

## MAINTENANCE ITEMS COMPLETED THIS MONTH:

- Performed monthly extraction well monitoring on February 9<sup>th</sup> and 10<sup>th</sup>.
- Performed LFG repairs at E-38 on February 9<sup>th</sup>.
- Performed LFG repairs at E-37, E-41, N-40, N-10, CS-10 and N-45 on February 10<sup>th</sup>.

## LANDFILL FLARE STATION

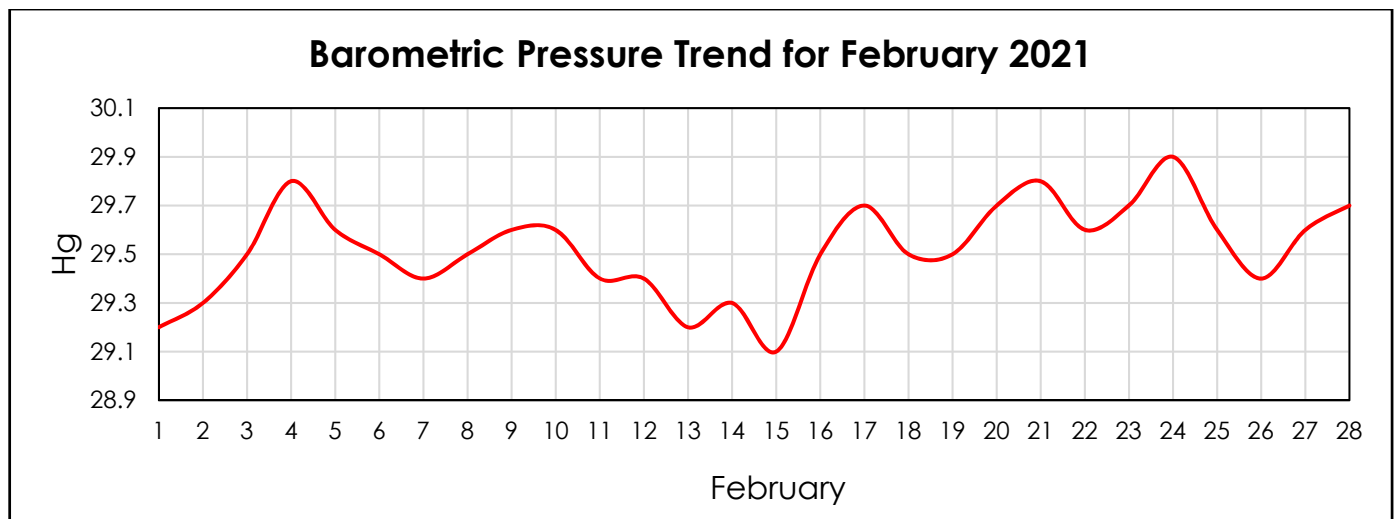
### Before system maintenance

Date & Time	CH <sub>4</sub>	CO <sub>2</sub>	O <sub>2</sub>	Balance	Init. Flow	Adj. Flow	Baro. Press.
	%	%	%	%	SCFM	SCFM	inches Hg
2/9/2021 10:46	35.5	21.4	3.1	40.0	162	162	29.60

### After system maintenance

Date & Time	CH <sub>4</sub>	CO <sub>2</sub>	O <sub>2</sub>	Balance	Init. Flow	Adj. Flow	Baro. Press.
	%	%	%	%	SCFM	SCFM	inches Hg
2/9/2021 16:10	39.9	23.6	1.4	35.1	186	186	29.57
2/10/2021 11:48	39.1	22.6	2.1	36.2	166	166	29.63

## Barometric Pressure Trends for February 2021



Data Source: <https://www.wunderground.com/history/monthly/us/wa/puyallup/KPLU/date/2021-2>

**3" LFG Hose, 2" Valve Replaced at E-38 (1)**



**(2)**



**Installed Well Heads at E-37**



**Installed Well Heads at E-41**



**Installed Well Heads at N-40**



**Replaced damaged 1-1/2" rubber gasket at flange adapter on condensate trap CS-10**



**Replaced 3" LFG Hose at N -10**  
No figure available.

**Replaced 4" LFG Hose at N-45**  
No figure available.

# Hidden Valley Landfill LFG System Monitoring & Maintenance

March 9<sup>th</sup> and 10<sup>th</sup>, 2021

## MAINTENANCE ITEMS COMPLETED THIS MONTH:

- Performed monthly extraction well monitoring on March 9<sup>th</sup> and 10<sup>th</sup>.
- Performed LFG repairs at E-40 on February 10<sup>th</sup>.

## LANDFILL FLARE STATION

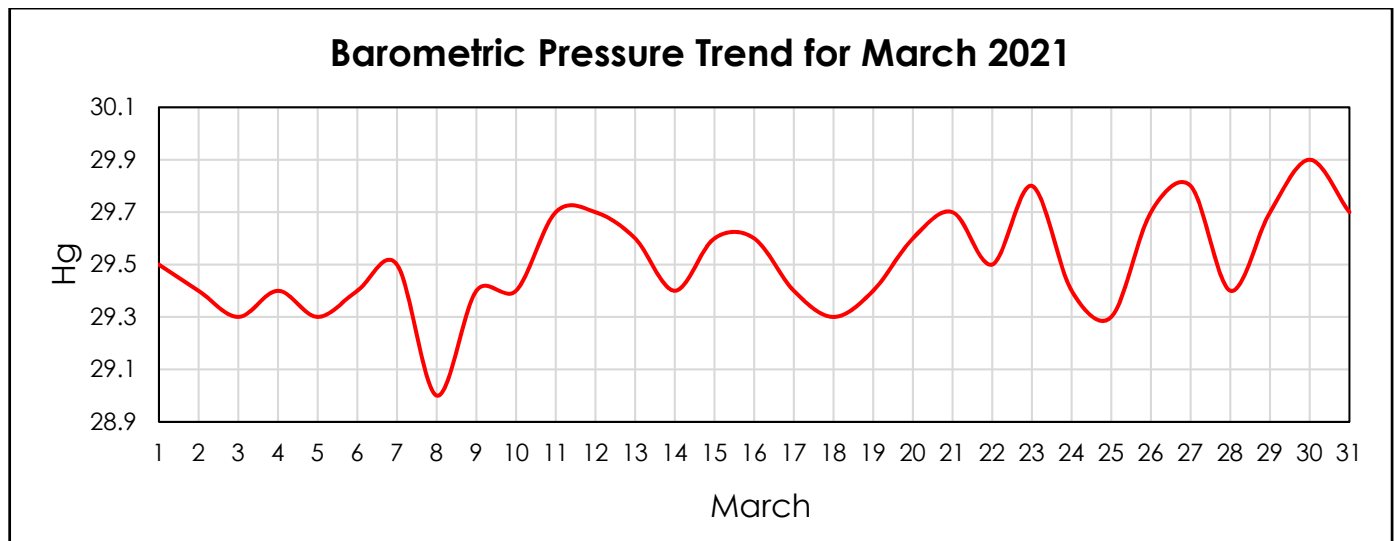
### Before system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
3/9/2021 9:59	35.0	20.7	1.8	42.5	167	167	29.27
3/10/2021 7:01	33.6	20.6	2.9	42.9	149	149	29.23

### After system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
3/9/2021 16:20	35.6	21.3	1.6	41.5	157	157	29.29
3/10/2021 11:10	34.9	22.6	1.5	41	174	174	29.3

## Barometric Pressure Trends for March 2021



Data Source: <https://www.wunderground.com/history/monthly/us/wa/puyallup/KPLU/date/2021-3>

**Lateral Line Repaired at E-40**

No figure available.

# Hidden Valley Landfill LFG System Monitoring & Maintenance

April 16<sup>th</sup>, 27<sup>th</sup> and 28<sup>th</sup>, 2021

## MAINTENANCE ITEMS COMPLETED THIS MONTH:

- Performed monthly extraction well monitoring on April 16<sup>th</sup>, 27<sup>th</sup> and 28<sup>th</sup>.

## LANDFILL FLARE STATION

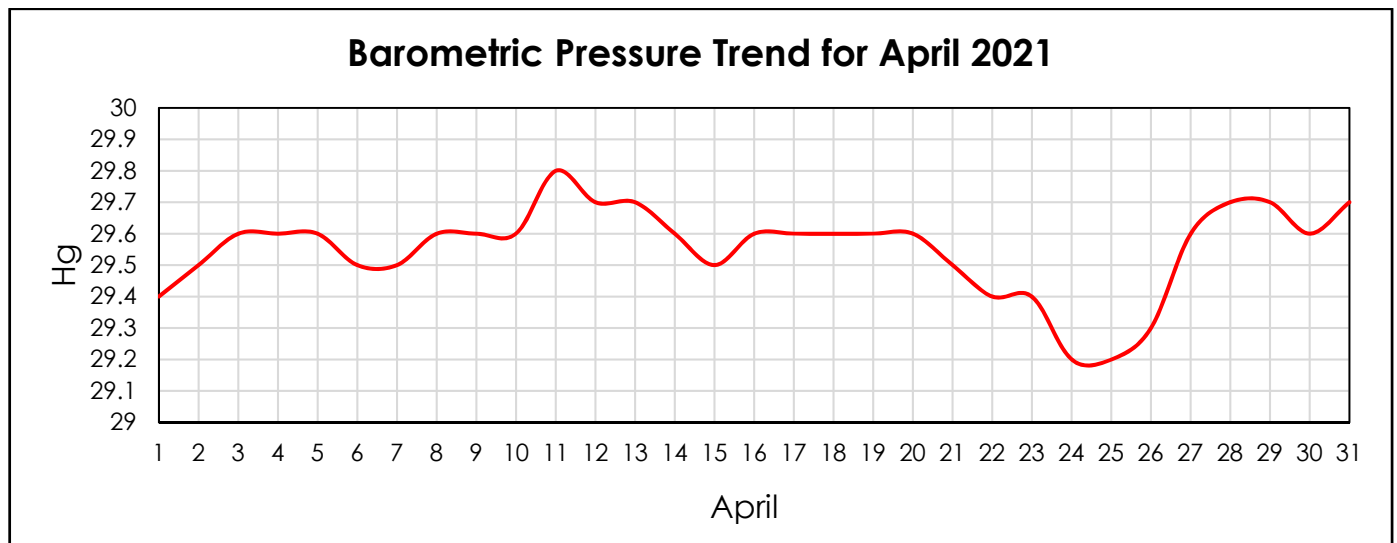
### Before system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
4/16/2021 6:59	30.6	19.5	3.3	46.6	169	169	29.66
4/27/2021 10:53	29.3	19.8	2.9	48.0	152	152	29.64
4/28/2021 6:35	28.3	17.8	3.7	50.2	143	143	29.74

### After system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
4/16/2021 9:38	30.2	19.9	2.8	47.1	153	153	29.61
4/27/2021 14:38	29.1	19.4	2.7	48.8	143	143	29.58
4/28/2021 10:24	28.7	20.0	2.7	48.6	127	127	29.72

## Barometric Pressure Trends for April 2021



Data Source: <https://www.wunderground.com/history/monthly/us/wa/puyallup/KPLU/date/2021-4>



# Hidden Valley Landfill LFG System Monitoring & Maintenance

May 24<sup>th</sup> and 25<sup>th</sup>, 2021

## MAINTENANCE ITEMS COMPLETED THIS MONTH:

- Performed monthly extraction well monitoring on May 24<sup>th</sup> and 25<sup>th</sup>.
- Performed LFG Repairs at N-8 on May 25<sup>th</sup>.

## LANDFILL FLARE STATION

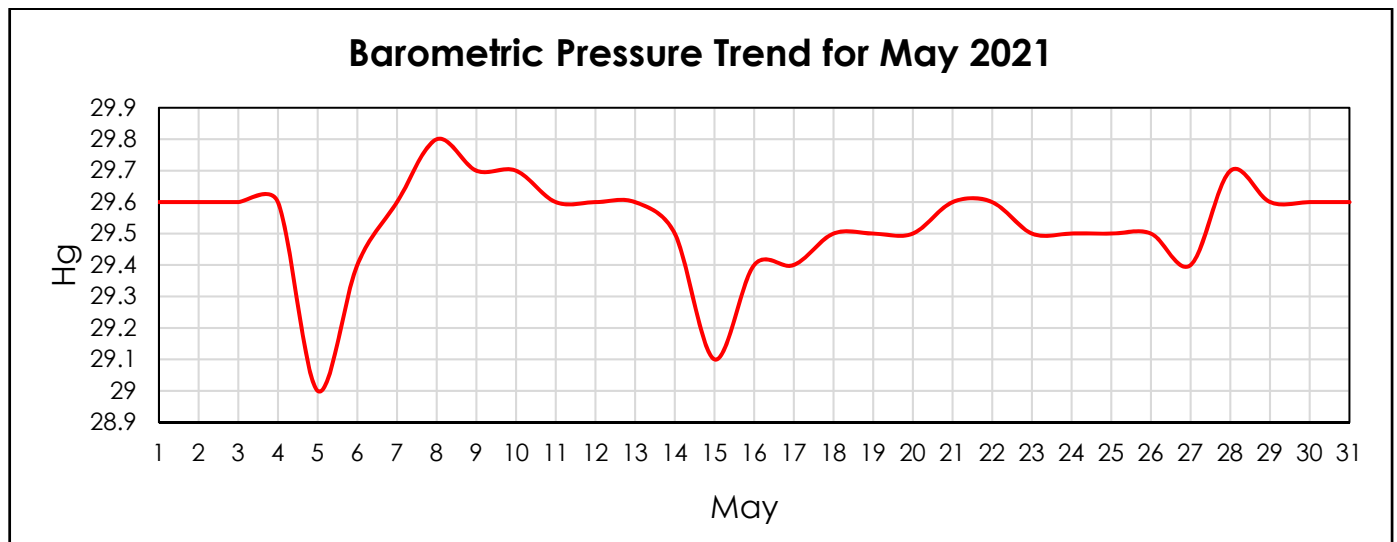
### Before system maintenance

Date & Time	CH <sub>4</sub>	CO <sub>2</sub>	O <sub>2</sub>	Balance	Init. Flow	Adj. Flow	Baro. Press.
	%	%	%	%	SCFM	SCFM	inches Hg
5/24/2021 12:22	31.4	22.3	2	44.3	130	130	29.54
5/25/2021 7:33	28.2	21.1	1.4	49.3	191	191	29.54

### After system maintenance

Date & Time	CH <sub>4</sub>	CO <sub>2</sub>	O <sub>2</sub>	Balance	Init. Flow	Adj. Flow	Baro. Press.
	%	%	%	%	SCFM	SCFM	inches Hg
5/24/2021 16:06	28.6	21.4	1.1	48.9	160	160	29.49
5/25/2021 13:45	37	22.8	1.3	38.9	179	179	29.54

## Barometric Pressure Trends for May 2021



Data Source: <https://www.wunderground.com/history/monthly/us/wa/puyallup/KPLU/date/2021-5>

**Installed 12"x3' Header Pipe at N-8 (1)**



**(2)**



# Hidden Valley Landfill LFG System Monitoring & Maintenance

June 6<sup>th</sup>, 8<sup>th</sup> and 10<sup>th</sup>, 2021

## MAINTENANCE ITEMS COMPLETED THIS MONTH:

- Performed monthly extraction well monitoring on June 8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup>.
- Performed LFG Repairs at E-32 and N-7 on June 8<sup>h</sup>.

## LANDFILL FLARE STATION

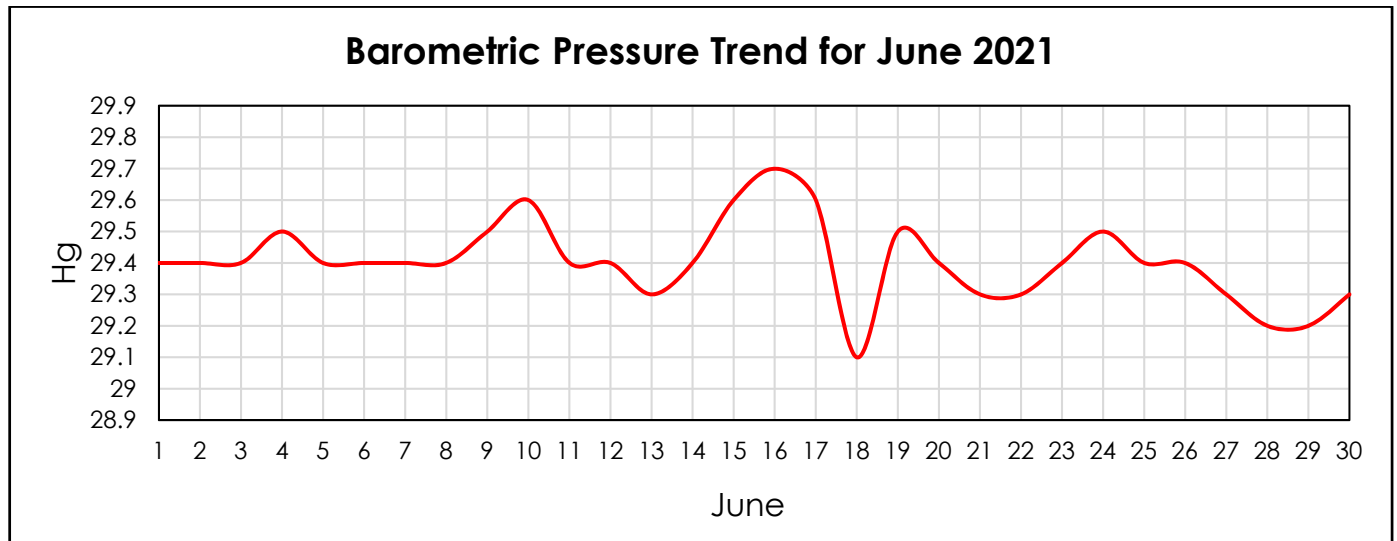
### Before system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
6/8/2021 11:55	30.7	22	1.5	45.8	233	233	29.38
6/9/2021 8:01	34.6	21.7	3.1	40.6	177	177	29.61

### After system maintenance

Date & Time	CH <sub>4</sub> %	CO <sub>2</sub> %	O <sub>2</sub> %	Balance %	Init. Flow SCFM	Adj. Flow SCFM	Baro. Press. inches Hg
6/8/2021 15:51	37.6	22.4	2.3	37.7	180	180	29.39
6/9/2021 15:11	36.4	22.4	2.1	39.1	166	166	29.51
6/10/2021 11:18	37	22	2.9	38.1	137	137	29.57

## Barometric Pressure Trends for June 2021



Data Source: <https://www.wunderground.com/history/monthly/us/wa/puyallup/KPLU/date/2021-6>

**Rebuilt Wellhead E-32**

No figure available.

**Temporally repaired N-7**

No figure available.

# Leachate Treatment System Data

## LEACHATE DAILY LOG #2

Month: JANUARY 2021  
 Year: \_\_\_\_\_



Date	Time	INFLUENT FM 212	EFFLUENT FM 511	AC-HRS	D-AP	RAIN	L8 LVL	GP HRS	S-SI	CELL 1	TS/GL	TRAN P	BLW A/B	E-PH	DAILY EFFLUENT
1	12	2441385	1977075	71319	71	.50	2184	4920	143792	927584	313210	1628	36039	723	32584
2	12	2473028	2009659	71343	71	1.65	2164	4922	11	11	314818	1585	36061	720	32584
3	12	2506632	2042244	71367	71	.5	2174	4924	11	11	320041	1589	36084	720	32584
4	12	2539090	2074828	71391	71	0.6	2188	4927	11	11	322350	1671	36106	717	32584
5	12	2572144	2107411	71411	71.5	0.4	2201	4935	143792	927584	324722	1579	36122	7.08	32584
6	12	2605085	2154745	71435	71.5	0.4	2214	4944	143792	927584	324922	1570	36156	7.17	32584
7	12	2638582	2198242	71459	71.5	.75		4949	143792	927584	325192	1580	36179	7.17	32584
8	12	2672784	2205165	71487	72	.35	2235	4953	11	11	328928	1605	36196	713	32584
9	12	2704531	2237748	71511	72	0	2265	4956	11	11	329580	1595	36219	711	32584
10	12	2737445	2270333	71535	72	.2	2275	4961	11	11	11	1579	36241	709	32580
11	12	2770410	2302914	71559	72	1.1	2279	4963	11	11	11	1626	36264	711	32580
12	12	2804044	2335496	71583	193	0.8	2300	4969	143792	927584	329580	1627	36279	7.13	32584
13	12	2837341	2368095	71607	195	0.4	2312	4971	143792	927584	329580	1456	36309	7.15	32584
14	12	2871350	2400677	71631	191	.25	2238	4976	143792	927584	329580	1596	36314	7.19	32584
15	12	2904044	2433249	71655	69	.25	2248	4984	144461	934092	11	1586	36354	716	32584
16	12	2936327	2465832	71679	69	.05	2245	4986	11	11	11	1586	36376	712	32584
17	12	2968318	2498416	71703	69	.15	2294	4992	11	11	11	1588	36399	716	32584
18	12	3001368	2530999	71727	69	.8	2279	4994	11	11	11	1606	36421	716	32584
19	12	3036296	2563585	71759	69.7	.0	2250	4999	144461	934092	329580	1616	36406	716	32584
20	12	3090006	2596183	71783	69.5	.05	2257	5003	144461	934092	329580	1605	36473	716	32584
21	12	3163690	2628753	71799	68	.05	2258	5007	144993	11	11	1596	36476	720	32584
22	12	3135769	2661336	71823	68	.3	2269	5012	11	935585	11	1548	38399	716	32584
23	12	3170032	2693922	71847	68	0	2277	5014	11	11	11	1556	38421	720	32584
24	12	3204035	2726505	71871	68	.25	2283	5018	11	11	11	1590	38444	725	32584
25	12	3236591	2759090	71895	69	0	2288	5022	11	11	11	1531	38466	728	32584
26	12	3270040	2791686	71925	69.2	.0	2300	5024	144993	935585	329580	1531	38490	7.31	32584
27	12	3304038	2824257	71949	70.3	.2	2312	5030	144993	935585	329580	1515	38516	7.31	32584
28	12	3335102	2856842	71967	71	.25	2330	5032	11	11	11	1547	38534	728	32584
29	12	3367434	2889425	71991	68	0	2310	5039	11	11	11	1546	38556	729	32584
30	12	3400296	2922010	72015	68	.1	2311	5043	11	11	11	1537	38579	723	32584
31	12	3434239	2954593	72039	68	.25	2316	5045	144993	935585	329580	1556	38601	721	32584

10.1      5050      1201      8,001

## LEACHATE DAILY LOG #2

Month: FEB 2021

Year: \_\_\_\_\_



Date	Time	INFLUENT FM 212	EFFLUENT FM 511	AC-HRS	D-AP	RAIN	L8 LVL	GP HRS	S-SL	CELL1	TS/GL	TRAN P	BLWA/B	E-PH	DAILY EFFLUENT
1	12	3466137	2987178	72062	69	.2	2310	5050	144993	935585	329580	1576	38624	724	32584
2	12	3506137	3019776	72086	69	.4	2334	5056	144993	935584	329580	1520	38651	727	32584
3	12	3532689	3052346	72110	69	.2	2333	5058	144993	935385	329580	14169	38162	731	32584
4	12	3565620	3084942	72134	69	.25		5062	144993	935585	329580		38696	733	32584
5	12	3599597	3117514	72157	70	.05	2404	5066	"	"	"	1590	38714	730	32584
6	12	3631925	3150096	72181	70	.05	2406	5071	"	"	"	1567	38736	728	32584
7	12	3666290	3182682	72205	70	.05	2411	5075	"	"	"	1542	38758	728	32584
8	12	3698607	3215266	72229	70	.0	2376	5077	"	"	"	1543	38781	723	32584
9	12	3731750	3247863	72253	70.3	.0	2361	5079	144993	935585	329580	1534	38809	724	32584
10	12	3765442	3280446	72287	70.2	.0	2369	5084	144993	935585	329580	1538	38813	720	32584
11	12	3800611	3213020	72302	70.2	.1	2277	5088	144993	940988	329580	1566	38854	723	32580
12	12	3832681	3345600	72324	70	.2	2309	5092	"	"	"	1537	38871	716	32284
13	12	3867200	3377950	72348	70	.4	2315	5098	"	"	"	1616	38893	720	32584
14	12	3899555	3410465	72372	off	.2	2323	5100	"	"	"	1555	38916	713	32584
15	12	3933246	3443051	72395	70	.6	2295	5102	"	943615	"	1579	38939	715	32584
16	12	3966533	3475647	72419	70.6	.0	2368	5106	144993	943615	329580	1517	38954	715	32584
17	12	4001138	3508218	72443	70.9	1.0	2366	5114	144993	943615	329580	1521	38983	718	32584
18	12	4033290	3540802	72466	71	.25	2365	5118	"	"	"	1559	39006	696	32584
19	12	4067338	3573386	72490	73	.50	2304	5122	"	"	"	1534	39028	704	32584*
20	12	4099945	3605970	72514	72	.25	2310	5128	"	"	"	1538	39051	709	32584
21	12	4134080	3638553	72538	72	.5	2315	5130	"	"	"	1557	39073	699	32584
22	12	4168086	3671139	72562	74	.0	2324	5132	"	"	"	1565	39096	710	32584
23	12	4201172	3703721	72591	74.3	.0	2351	5136	144993	943615	329580	1572	39124	699	32584
24	12	4235160	3736315	72617	70.6	1.25	2377	5142	144993	943615	329580	1581	39147	712	32584
25	12	4268653	3768889	72633	71	.5	2395	5146	"	947888	"	1592	39163	698	32584
26	12	4301892	3801473	72657	71	.15	2398	5152	"	"	"	1610	39186	696	32584
27	12	4334995	3834059	72681	72	.05	2277	5154	"	"	"	1524	39208	700	32584
28	12	4368369	3866642	72715	72	.2	2203	5160	144993	951808	329581	1550	39231	705	32584
29															
30															
31															

7.35      5164      0 16,223

## LEACHATE DAILY LOG #2

Month: MARCH 2021  
 Year: \_\_\_\_\_

Cell 12/28 = 951808

Date	Time	INFLUENT FM 212	EFFLUENT FM 511	AC-HRS	D-AP	RAIN	LR LVL	GP-HRS	S-SI	CELL 1	TS/GE	TRAN P	BLW A/B	E-PH	DAILY EFFLUENT
1	12	4401772	3899225	72728	73	.2	2197	5164	144993	952070	329581	1579	39253	698	32584
2	12	4435491	3931824	72752	73	.0	2198	5162	144993	952070	329581	1585	39281	713	32584
3	12	4468467	3964394	72762	73.3	.0	2205	5174	144993	952070	329581	1585	39298	717	32584
4	12	4502663	3996987	72776	73.3	.125	2245	5180	144993	952070	329581		39312	718	32584
5	12	4537315	4029562	72823	73	.125	2268	5186	"	952070	"	1627	39343	710	32584
6	12	4571343	4062147	72847	73	0	2271	5190	.11	"	"	1581	39366	704	32584
7	12	4603536	4094730	72871	73	0	2276	5194	.11	"	"	1544	39388	705	32584
8	12	4636331	4127314	72895	73	.0	2276	5199	.11	"	"		39411	715	32584
9	12	4670955	4159894	72919	73.2	.0	2279	5203	144993	952070	329582	1553	39433	711	32584
10	12	4702598	4192482	72943	73.2	.0	2272	5209	144993	952070	329582	1553	39448	728	32584
11	12	4738086	4225064	72967	73.3	.15	2284	5213	144993	952070	329583	1554	39465	724	32584
12	12	4769462	4257652	72990	75	0	2299	5217	"	"	"	1539	39501	721	32584
13	12	4804269	4290236	73014	74	0	2306	5219	"	"	"	1557	39523	729	32584
14	12	4835556	4322819	73038	74	.25	2310	5225	.11	"	"	1568	39546	726	32584
15	12	4868978	4355404	73061	74	.0	2339	5227	.11	"	329982	1534	39567	729	32584
16	12	4902029	4388121	73085	74.5	0	2333	5331	144993	952070	329982	1545	39583	732	32584
17	12	4934570	4420790	73109	74.6	.05	2333	5237	144993	952070	329982	1548	39605	724	32584
18	12	4967802	4453156	73133	74	.2	2338	5239	"	"	"	1584	39635	726	32584
19	12	5000899	4485739	73157	72	0	2337	5243	"	"	"	1541	39657	727	32584
20	12	5034355	4518325	73181	72	.1	2341	5249	"	"	"	1538	39680	725	32584
21	12	5065357	4550907	73205	72	.2	2346	5251	"	"	"	1555	39702	728	32584
22	12	5100123	4583491	73229	72	.2	2349	5253	"	"	"	1605	39725	729	32584
23	12	5130987	4616075	73253	72.3	.0	off	5257	144993	952080	329982	"	39747	732	32584
24	12	5164142	4648660	73277	72.0	1.1	off	5261	144993	954736	329982	"	39769	725	32584
25	12	5198281	4681244	73301	74	.3	off	5267	"	955802	"	off	39792	728	32584
26	12	5228979	4713826	73325	73	.05	off	5271	"	"	"	off	39814	722	32584
27	12	5262386	4746410	73349	73	0	"	5277	"	"	"	"	39837	727	32584
28	12	5295366	4778995	73373	73	.5	"	5281	.11	"	"	"	39859	722	32584
29	12	5327781	4811579	73397	74	0	"	5287	"	"	"	"	39882	726	32584
30	12	5360860	4844163	73420	74	.0	"	5291	"	"	"	"	39904	728	32584
31	12	5393487	4876745	73444	72.9	.0	"	5295	144993	955802	329982	"	39920	729	32584

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# LEACHATE DAILY LOG #2

Month: APRIL 2021  
 Year: \_\_\_\_\_



Date	Time	INFLUENT FM 212	EFFLUENT FM 511	AC HRS	D-AP	RAIN	LB LVL	GP HRS	S-SL	CELLS	TS/GL	TRAN P	BLW A/B	F-PH	DAILY EFFLUENT
1	12	5429179	4909385	73468	73.2	Ø		5299	144995	955802	329982		39949	7.24	32584
2	12	5460384	4941916	73492	74	0		5303	11	956818	11		39972	724	32584
3	12	5493887	4974500	73516	74	0		5305	11		11		39994	726	32584
4	12	5527106	5007084	73539	74	0		5309	11	958958	11		40017	727	32584
5	12	5559445	5039667	73563	74	Ø		5311	11		11		40039	728	32584
6	12	5592464	5072251	73587	75.3	Ø		5313	144995	951043	329982		40045	7.32	32584
7	12	5617424	5096491	73611	75.4	.4		5317	144993		329982		40076	7.37	32584
8		5652638	5129062	73635	75.7	0		5319	144993		329982		40112	7.39	32584
9	12	5683507	5161647	73658	75	.25	23.7	5323	11	963221	11	15.60	40129	7.35	32584
10	12	5717398	5194232	73682	75	0	23.6	5325	11	965133	11	15.59	40152	7.30	32584
11	12	5750270	5226816	73705	72	.2	23.0	5327	11	969284	329982	15.44	40174	7.23	32584
12		5782657	5259412	73729	65.7	Ø	22.5	5329	144993	973004	329982	15.51	40180	7.27	32584
13		5818187	5291982	73753	66.9	Ø	22.5	5335	144993	973004	329982	15.51	40212	7.27	32584
14		5850687	5324558	73777	66.8	0	21.6	5339	144993	975304	329982	15.53	40247	7.28	32584
15	12	5884557	5357152	73801	65	0	21.4	5342	11	980241	11	15.45	40264	7.23	32584
16	12	5916873	5389736	73824	66	0	20.5	5351	11	985205	11	15.28	40287	7.27	32584
17	12	5950980	5423321	73848	66	0	20.6	5355	11	11	11	15.39	40309	7.20	32584
18	12	5983174	5454906	73872	70	0	20.7	5359	11	11	11	15.50	40331	7.29	32584
19	12	6018088	5487493	73896	69	Ø	20.7	5361	11	11	11	15.28	40354	7.32	32584
20	12	6051021	5520074	73920	69	.7	20.5	5367	144993	985205	329982	15.29	40382	7.26	32584
21	12	6083701	5552662	73944	69	0	20.0	5371	144993	989300	329982	15.27	40404	7.33	32584
22	12	6117142	5585245	73968	71	0	20.1	5375	11	11	11	15.57	40421	7.30	32584
23	12	6150459	5617829	73992	71	0	19.4	5380	11	993041	11	15.35	40444	7.36	32584
24	12	6183903	5650413	74016	71	.5	19.5	5382	11	11	11	15.53	40466	7.33	32584
25	12	6214913	5682996	74040	70	.5	19.6	5386	11	11	11	15.51	40489	7.35	32584
26	12	6248073	5715581	74064	71	.9	19.6	5390	11	11	11	15.33	40511	7.34	32584
27	12	6280467	5748163	74088	71.5	Ø	19.6	5392	144993	993041	329982	15.33	40529	7.36	32584
28	12	6315855	5786750	74104	71.5	Ø	19.1	5394	144993	99582	329982	15.41	40564	7.30	32584
29		6348919	5813335	74128	71.5	Ø	19.2	5399	144993	99582	329982	15.63	40584	7.31	32584
30	12	6380557	5845915	74152	71	.2	18.6	5401	144993	999190	329982	15.40	40601	7.31	32584
31								5405							

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# LEACHATE DAILY LOG #2

Month: MAY 2021  
 Year: \_\_\_\_\_



Date	Time	INFLUENT FMS12	EFFLUENT FMS11	AC-HRS	D-AP	RAIN	L8 LVL	GP-HRS	S-SL	CELLS	TS/GL	TRAN P	BLW A/B	F-PH	DAILY EFFLUENT
1	12	6415200	5878500	74184	71	0	19.0	5405	144993	999190	329982	15.47	40624	729	32584
2	12	6448241	5911086	74208	67	0	18.7	5407	11	11	11	15.37	40646	731	32584
3	12	6479488	5943669	74232	67	12	18.8	5409	11	11	11	15.44	40669	726	32584
4	12	6514030	59856264	74256	79d	0	18.8	5411	144993	999190	329982	15.27	40669	729	32584
5	12	6546172	6000852	74280	69.5	0	18.8	5416	144993	1003550	329982	15.27	40719	725	32584
6	12	6580079	6041426	74304	71.1	0.25	17.2	5418	144003	1003550	329982	15.30	40719	727	32584
7	12	6612879	6074004	74328	72	0.30	16.8	5420	11	1008476	11	15.40	40759	729	32584
8	12	6645754	6106589	74352	73	0	16	5424	11	1011582	11	15.39	40781	729	32584
9	12	6679452	6139174	74376	75	0	16.1	5427	11	11	11	15.67	40804	731	32584
10	12	6713197	6171757	74400	74	0	16.6	5436	11	11	11	15.55	40826	733	32584
11	12	6745412	6204341	74424	75.1	0	15.6	5432	144993	1011582	329982	15.55	40834	735	32584
12	12	6778128	6236946	74448	75.4	0	15.3	5434	144993	1015132	330313	15.55	40876	737	32584
13	12	6812217	6269509	74472	75	0	15.4	5438	11	11	11	15.42	40894	736	32584
14	12	6845092	6302094	74496	74	0	15.5	5440	11	11	11	15.51	40916	738	32584
15	12	68777445	6334678	74520	78	0	15.1	5443	11	1016558	11	15.46	40939	737	32584
16	12	6911894	6367262	74544	78	0	15.2	5445	11	11	11	15.56	40961	736	32584
17	12	6944925	6399847	74568	78	0.4	15.3	5447	11	11	11	15.40	40977	733	32584
18	12	6976791	6432432	74592	79.9	0.8	15.3	5451	144993	1016558	330313	15.70	40989	737	32584
19	12	7010581	6465014	74616	79.9	0.45	15.5	5455	144993	1016558	330313	15.77	41021	737	32584
20	12	7043865	6497598	74640	71	0	15.6	5457	11	11	11	15.55	41051	735	32584
21	12	7076204	6530182	74664	72	0	15.7	5462	11	11	11	15.62	41073	733	32584
22	12	7109530	6562766	74687	72	0	16	5472	11	11	11	15.50	41096	730	32584
23	12	7143109	6595351	74711	73	0	15.8	5474	11	11	11	15.45	41118	731	32584
24	12	7174645	6627933	74735	73	0	15.9	5478	11	11	11	15.53	41141	731	32584
25	12	7200534	6660820	74759	73	0.2	16.0	5480	144993	1016558	330333	15.42	41141	730	32584
26	12	7241469	6693103	74781	73	0.4	16.0	5482	144993	1016558	330333	15.47	41181	730	32584
27	12	7274009	6725686	74825	73d	0.80	16.1	5484	144993	1016558	330333	15.45	41202	730	32584
28	12	7307378	6758270	74831	73	0.05	16.2	5488	11	11	11	15.22	41231	732	32584
29	12	7340785	6790855	74855	75	0	16.3	5490	11	11	11	15.64	41253	732	32584
30	12	7372214	6823438	74879	74	0	16.4	5494	11	11	11	15.40	41276	728	32584
31	12	7404964	6856021	74903	73	0	16.4	5497	144993	1016558	330333	15.55	41294	733	32584

3.85      5501      0      17,368

# LEACHATE DAILY LOG #2

Month: June  
 Year: 2021



Date	Time	INFLUENT FM 212	EFFLUENT FM 513	AC-HRS	D-AP	RAIN	LB/LVE	GP-HRS	S-SL	CELLS	TS/GL	TRAN P	BEWA/A/B	E-PH	DAILY EFFLUENT
1	12	7437679	6888606	71932	739	.0	16.4	5501	144993	1016558	330333	1555	41321	7.34	32584
2	12	7482513	6921252	74956	739	.0	16.4	5505	144993	1016558	330333	1555	41348	7.40	32584
3	12	7504096	6954057	74980	739	.0	16.8	5505	144993	1016558	330333	1544	41371	7.35	32584
4	12	7536463	6986547	75004	788	.2	16.8	5510	144993	1016558	330333	1544	41382	7.40	32584
5	12	7569468	7018956	75028	799	.2	16.8	5517	144993	1016558	330333	1529	41416	7.39	32584
6	12	7602803	7051545	75052	799	.0	16.8	5521	144993	1016558	330333	15.29	41427	7.37	32584
7	12	7636634	7087112	75076	802	.0	16.9	5523	144993	1016558	330333	15.30	41461	7.31	32584
8	12	7669086	7116690	75100	774	.0	16.9	5525	144993	1016558	330333	15.30	41483	7.42	32584
9	12	7702299	7149287	75124	676	.0	17.1	5527	144993	1016558	330333	15.43	41506	7.43	32584
10	12	7735030	7181865	75148	680	.0	17.1	5529	144993	1016558	330333	15.43	41515	7.33	32584
11	12	7769013	7214440	75172	684	.6	17.2	5535	144993	1016558	330333	15.64	41551	7.37	32584
12	12	7800551	7247031	75196	689	1.0	17.3	5538	144993	1016558	330333	15.65	41571	7.24	32584
13	12	7833844	7279735	75220	693	.6	17.4	5540	144993	1016558	330333	15.65	41574	7.29	32584
14	12	7865732	7312200	75244	699	.0	17.4	5543	144993	1016558	330333	15.39	41618	7.30	32584
15	12	7899290	7302312	75268	688	.0	17.4	5548	144993	1016558	330333	15.39	41516	7.30	32584
16	12	7931833	7379364	75292	698	.5	17.5	5552	144993	1016558	330333	15.40	41114	7.33	32584
17	12	7964590	7409950	75311	69	0	17.7	5554	"	"	"	1564	41681	7.30	24640
18	12	7987624	7434585	75335	69	0	17.8	5558	"	"	"	1552	41703	7.39	32584
19	12	8020510	7467171	75359	69	0	17.8	5562	"	"	"	1547	41725	7.23	32584
20	12	8052936	7499757	75383	69	0	17.9	5564	"	"	"	1540	41748	7.28	32584
21	12	8085972	7532339	75407	69	.0	17.9	5566	"	"	"	1558	41771	7.20	32584
22	12	8117595	7564923	75431	69.0	.0	17.9	5570	144993	1016558	330333	1558	41798	7.31	32584
23	12	8151686	7597502	75455	69.0	.0	18.0	5575	144993	1016558	330333	1540	41798	7.35	32584
24	12	8182065	7630107	75479		0	18.0	5578	144993	1016558	330333	15.40	41821	7.29	32584
25	12	8214313	7662676	75502	58	0	18.1	5580	"	"	330800	1546	41860	7.26	32584
26	12	8245842	7695260	75526	58	0	18.1	5584	"	"	"	1552	41883	7.30	32584
27	12	8278516	7727844	75550	59	0	18.1	5586	"	"	"	1556	41905	7.30	32584
28	12	8310683	7760440	75570	63	.0	18.1	5588	"	"	"	1550	41921	7.30	26616
29	12	8337567	7786682	75594	65.4	.0	18.1	5590	144993	1016558	330800	1550	41946	7.30	32584
30	12	8371520	78249640	75618	65.2	.0	18.1	5594	144993	1016558	330800	1554	41978	7.30	32584
31								5603							

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