



HWA GEOSCIENCES INC.

Geotechnical Engineering • Hydrogeology • Geoenvironmental Services • Inspection and Testing

February 20, 2017

HWA Project No. 98165-670

City of Everett Public Works Department
3200 Cedar Street
Everett, WA 98201

Attention: Mark Sadler

**Subject: Gas Sampling Annual Report, 2016
Everett Landfill/Tire Fire Site
Everett, Washington**

Dear Mark,

This letter presents the annual report for gas monitoring at the Everett Landfill (herein referred to as the Landfill) for calendar year 2016, per the Compliance Monitoring and Contingency Plan.

Gas Probe Monitoring

Four quarterly sampling events conducted on the following dates are discussed in this annual report:

- 1/14/16
- 4/7/16
- 7/15/16
- 11/11/16

Results of the February 2017 gas monitoring round, which were available at the time of report preparation, are also included in the tables.

Figures 1 and 2 show the gas monitoring probe and building locations. Gas monitoring data at selected Landfill gas probes is summarized in Table 1. A Landfill gas extraction trench (also known as a gas interception or collection trench) was constructed along the northern portion of the west Landfill boundary and commenced operation in April 2004. This trench was designed to prevent offsite migration by intercepting the Landfill gas at the site boundary. A northern extension of the perimeter gas interception trench was added in November 2005. The 41st Street overcrossing gas extraction system was started in July 2006.

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Monitoring highlights for the year include:

Landfill interior – Methane exceeding 5% by volume (which equals 100% of the lower explosive limit, or LEL) had been historically detected in most of the Landfill interior gas probes (which were completed in or near waste), as expected. By 2008, all but gas probes LG-14, LG-15, and LG-16 within the Landfill footprint were decommissioned in accordance with Chapter 173-160 WAC in preparation for site development activities. Of these three remaining probes, LG-15 generally had the highest methane concentrations in 2016, with concentrations up to 69%. Probe LG-14 has not had any methane exceeding 5% since January 2014. Methane concentration in LG-16 increased after the first quarter of 2016 (with concentrations of 6 to 28%) after a period of low concentrations (below 5%) from 2011 to January 2016. Interior probes have not exhibited any apparent trends over time since January 2008 (Figure 3).

Three new probes, LG-82, LG-83, and LG-84 were installed at the south end of the Landfill per the request of the Washington State Department of Ecology (Ecology) in June 2015. Results indicate methane concentrations ranging from 31% to 79% at these probes. These three probes are in landfill waste, and have similar methane concentrations to other landfill interior probes sampled in the past. A new gas extraction trench at the south end of the Landfill is currently in design.

West end of Landfill – The number of probes with detected methane and the magnitude of methane concentrations along the western end of the Landfill decreased since startup of the Landfill gas extraction system in April 2004. Starting in October 2008, two probes along the western boundary, LG-27 and LG-28, started displaying elevated methane concentrations with a maximum concentration of 49% observed in LG-28 in January 2009, and a maximum of 74% observed in LG-27 in August 2012 (Figure 4). Methane has not been detected in either probe since January 2013. The elevated methane concentrations at LG-27 likely were due to preloading of adjacent areas within the Landfill for future site development.

West end of Landfill, off-site – In 2002, LG-56, LG-57, and LG-58 were installed west of, uphill, and off-site of the Landfill to monitor if methane was migrating from the landfill property onto adjoining properties on the west side of the Landfill. These probes generally have not contained methane since installation, with a few isolated readings of up to 1.7% (Table 1). LG-76, LG-77, and LG-78 were installed in 2008, also west of, uphill, and off-site of the Landfill. LG-76 and LG-78 have not contained appreciable (above 0.1%) methane since installation. LG-77 began showing consistent methane concentrations exceeding the action level of 5% in January 2011. More frequent readings were collected at LG-77 from February through April 2011. Readings in 2016 showed increased methane concentrations, between 9 and 23%, somewhat higher than historical

values measured in this probe. Figure 5 shows the LG-77 methane concentrations over time.

HWA conducted a shallow soil gas (“bar hole”) survey of the area surrounding LG-77 in March 2011. No methane was detected in 11 of 12 holes at depths of 2 to 3.5 feet below ground surface (bgs), and very low methane (0.05%) was measured in one hole. Surficial soils were saturated at shallow depths (2 to 4 feet bgs), and all readings were taken above shallow ground water level. LG-77 is screened at a depth of 15 to 35 feet bgs, corresponding to the elevation of the Landfill, and encountered fill with wood below 10 feet, suggesting the methane detected in LG-77 may be coming from fill beneath the property. Results of the study are summarized in HWA’s report *Landfill Soil Gas Survey, Buse Property, Everett, Washington* dated March 28, 2011.

North end of Landfill – Methane exceeding 5% by volume was historically detected in one or more of the LG-44, LG-45, LG-46, and LG-47 probes installed at the Landfill northern perimeter. All of these probes are on private property that is being redeveloped, including building demolition and major site grading, which has resulted in loss of all of these probes. Most other northern perimeter probes have not contained appreciable methane concentrations (Table 1, Figure 6).

LG-44, LG-45, and LG-46, located on former Port of Everett Property (former Diversified recycling facility), are the furthest from the Landfill and the gas extraction system. Before being covered during property development, these probes displayed relatively constant range of methane readings before and after construction of the north segment of gas extraction system in November 2005. The methane concentrations in LG-44 and LG-45 suggest an off-site source of methane, as Landfill gas from the landfill would likely have dissipated in the years following installation of the extraction trench. The recycling facility was closed in April 2014 and all buildings have since been demolished. Probes LG-44, LG-45, and LG-47 were covered by demolition debris and soil and have not been located or monitored since mid 2014. Additionally, LG-46 has been covered by preload materials since it was last monitored in June 2016.

Gas probe LG-70, located at the northeast corner of the landfill, has historically not contained any appreciable methane since 2005, when the north segment of the gas extraction system was installed, although elevated methane was detected in April and July of 2016, with readings back down to below 1% in November 2016 and February 2017. This brief episode of elevated methane at this location may be due to excavation and construction of a large pump station adjacent to this probe, although future monitoring will indicate if this is the case.

Other than LG-44, LG-45, LG-46, LG-47, and LG-70, none of the other north Landfill boundary gas probes have had methane over 5% in the past year, with most probes containing no detectable methane.

Utilities – Gas probes installed in utility trenches (sewer, sewer force main, water, and natural gas) include:

- I-5 / West End – In October 2008, gas probes LG-79, LG-80, and LG-81 were installed in utility trenches to replace gas probes damaged or decommissioned during BNSF railroad track construction (LG-63, LG-64, LG-65, and LG-66). Except for a reading of 0.1 % in November 2010 and April 2013, methane has not been detected in these probes since their installation in October 2008 (Table 1). All three of these replacement probes were damaged and not useable as of October 2013. This area is used for log storage for Buse Timber, and the gas probes (LG-79, LG-80, and LG-81) were damaged by logs and heavy equipment operations after closure of 36th Street. None of the damaged probes (original or replacement probes) had methane above the action level from June 2004 to July 2013, when the last active probe was damaged. Three additional replacement probes (LG-85, LG-86, and LG-87) were installed in June 2015 at the north end of the Landfill in utility trenches within 36th Street (away from Buse activity) to replace damaged probes LG-79, LG-80, and LG-81. LG-86 and 87 were covered by fill for the last round of monitoring in 2016. None of the three probes had any detected methane during 2016.
- Eclipse Mill Road / East end – Three gas probes installed in utility trenches in Eclipse Mill Road (LG-71, LG-72, and LG-73) were repaired in October 2008 by routing the sampling ports laterally to a central location at the side of Eclipse Mill Road, where they would not be subject to truck and heavy equipment damage. Methane has not been detected in these probes above 0.4% since their repair in October 2008 (Table 1). The probes were covered by fill for two rounds in 2012. The probes were located in January 2013, after which the labeling was removed or obscured by contractors, such that the specific utility (e.g., sewer or water line) each probe monitors is no longer known. None of the three probes have had detected methane during 2016, consistent with past readings.

Buried/damaged gas probes in 2016:

The following gas probes have been damaged or buried in the last year during construction activities at and around the Landfill.

- LG-86 and 87 were covered by a pile of gravel and may still be functional once the gravel pile is removed.

- LG-61 appears to be damaged. The monument was destroyed and is no longer usable.
- LG-62 and 67 could not be located and have likely been buried or damaged by nearby construction activities.
- LG-46 is covered by preload/fill materials on private property.

Buildings

Gas monitoring, which was performed utilizing a flame ionization detector, at selected buildings located to the north and west of the Landfill is summarized in Table 2. The Snohomish County Transfer Station formerly on the landfill was closed in January 2004, after which no further monitoring was conducted. The Everett Animal Shelter, formerly on the landfill, was vacated in April 2009 and demolished in June 2009. GTS Drywall Supply Co., north of the landfill, was not monitored after November 2002, when the building was vacated. The GTS building was demolished in 2007. The Diversified Recycling facility north of the landfill was closed in April 2014 and the south building subsequently demolished. The north building was demolished in early 2016.

Off-site structures monitored in 2016 included:

- Everett Gospel Mission, 3711 Smith Avenue
- Cascade Wholesale, 2410 38th Street
- H & R Mechanical Systems Inc., 2407 38th Street
- Ron May Towing, 2406 39th Street
- Sno Valley Process Solutions, 2420 38th Street

The highest methane concentration detected in any of the off-site structures monitored during the last year was 1.9 parts per million (ppm, 0.00019%) at the Cascade Wholesale property. This concentration is well below the 100 ppm (0.01%) action level and considerably less than the lower explosive limit of 50,000 ppm (5%), and most likely unrelated to the landfill.



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We appreciate the opportunity to provide our services. Please feel free to call me if you have any questions or need more information.

Sincerely,
HWA GEOSCIENCES INC.



Arnie Sugar, LG, LHG
Principal Hydrogeologist

Attachments:

- Table 1 Everett Landfill – Gas Probe Monitoring
- Table 2 Everett Landfill – Gas Monitoring at Structures
- Figure 1 Landfill Gas Probe Location Map
- Figure 2 Landfill Gas Probe Location Map, Detail
- Figure 3 Methane Concentration in Landfill Interior Probes
- Figure 4 Methane Concentration in West Boundary Probes
- Figure 5 Methane Concentration in LG-77
- Figure 6 Methane Concentration in North Boundary Probes

Table 1A
Everett Landfill - Recent Gas Probe Monitoring

Screen Interval	10/9-10/2013					1/28-29/2014					4/29/14					7/22-24/2014					
	CH4 %	CO2 %	O2 %	Pressure H20	Water Depth (ft)	CH4 %	CO2 %	O2 %	Pressure H20	Water Depth (ft)	CH4 %	CO2 %	O2 %	Pressure H20	Water Depth (ft)	CH4 %	CO2 %	O2 %	Pressure H20		
Landfill Interior																					
LG-2a	4.0-9.0	Damaged					Damaged					Damaged					Damaged				
LG-2b	12.0-17.0	Damaged					Damaged					Damaged					Damaged				
LG-2c	20.0-25.0	Damaged					Damaged					Damaged					Damaged				
LG-3a	7.0-12.0	Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08				
LG-3b	15.0-20.0	Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08				
LG-5	3.5-6.5	Decommissioned 2/18/03					Decommissioned 2/18/03					Decommissioned 2/18/03					Decommissioned 2/18/03				
LG-6	5.0-10.0	Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08				
LG-8	5.0-8.0	Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08				
LG-9a	4.0-9.0	Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08				
LG-9b	12.0-17.0	Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08				
LG-9c	20.0-25.0	Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08				
LG-10a	4.0-9.0	Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08				
LG-10b	11.0-16.0	Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08				
LG-10c	18.0-23.0	Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08				
LG-13	4.0-10.0	Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08				
LG-14	4.0-8.0	47.8	18.8	0.1	-	49.3	14.5	2.0	-	0.0	3.6	16.0	-	0.0	0.0	20.9	-	-	-		
LG-15	4.0-10.0	53.2	21.1	0.1	-	26.8	6.8	0.0	-	57.2	9.6	0.1	-	67.9	32.7	0.2	-	-	-		
LG-16	4.0-10.0	0.0	0	21.0	-	0.1	0.2	21.2	-	0.0	0.0	19.7	-	0.0	0.0	20.9	-	-	-		
LG-17	4.0-9.0	Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08				
LG-18	4.0-9.0	Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08				
LG-19	5.0-12.5	Decommissioned 11/1/03					Decommissioned 11/1/03					Decommissioned 11/1/03					Decommissioned 11/1/03				
LG-20	4.0-9.0	Decommissioned 11/1/03					Decommissioned 11/1/03					Decommissioned 11/1/03					Decommissioned 11/1/03				
LG-82																					
LG-83																					
LG-84																					
West Boundary																					
LG-21	3.0-5.0	water in probe					0.0	0.1	21.5	-	0.0	0.0	20.4	-	0.0	0.0	20.9	-	-	-	
LG-22	3.0-5.0	Damaged					Damaged					Damaged					Damaged				
LG-23	3.0-5.0	0	0	20.8	0.05	0.0	0.0	21.6	-	0.0	0.0	20.4	-	0.0	0.0	18.6	-	-	-		
LG-24	3.0-8.0	water in probe					0.0	0.0	21.5	-	0.0	0.0	20.4	-	0.0	0.0	20.9	-	-	-	
LG-25	3.0-8.0	water in probe					0.0	0.7	21.0	-	0.0	0.2	20.4	-	0.0	0.0	20.9	-	-	-	
LG-26	3.0-8.0	0	0.2	20.6	0.05	0.0	0.1	21.3	-	0.0	0.0	20.4	-	0.0	0.0	20.9	-	-	-		
LG-27	3.0-8.0	0	2	20.8	0.05	0.0	0.1	21.4	-	0.0	0.0	20.4	-	0.0	0.0	21.1	-	-	-		
LG-28	3.0-8.0	0	1.1	17.3	0.05	0.0	1.9	19.0	-	0.0	2.5	16.0	-	1.0	0.0	18.7	-	-	-		
LG-29	3.0-8.0	Damaged					Damaged					Damaged					Damaged				
LG-30	5.0-10.0	0	4	16.9	0.16	0.0	3.3	18.0	-	0.0	2.6	16.7	-	0.0	0.0	12.1	-	-	-		
LG-31	7.0-12.0	0	0.1	21	0.16	0.0	4.6	16.6	-	0.0	0.1	20.4	-	0.0	0.0	13.2	-	-	-		
LG-32	3.0-8.0	0	6.1	14.5	0.16	0.0	13.7	2.2	-	0.0	5.8	15.1	-	0.0	0.0	14.3	-	-	-		
LG-33	7.0-12.0	0	0.5	20.5	0.16	0.0	0.2	21.3	-	0.0	0.1	20.3	-	0.0	0.0	20.7	-	-	-		
LG-34	3.0-8.0	0	1.5	19.5	0.16	0.0	7.4	10.7	-	0.0	0.0	20.4	-	0.0	0.0	15.6	-	-	-		
LG-35	4.0-9.0	0	4.8	5.8	0.16	0.0	8.0	6.6	-	0.0	4.1	7.7	-	0.0	0.0	10.7	-	-	-		
LG-36	9.0-14.0	Decommissioned 08/1/07					Decommissioned 08/1/07					Decommissioned 08/1/07					Decommissioned 08/1/07				
LG-37	7.0-12.0	Decommissioned 08/1/07					Decommissioned 08/1/07					Decommissioned 08/1/07					Decommissioned 08/1/07				
LG-38	7.0-12.0	Decommissioned 08/1/07					Decommissioned 08/1/07					Decommissioned 08/1/07					Decommissioned 08/1/07				
LG-39	7.0-12.0	Decommissioned 08/1/07					Decommissioned 08/1/07					Decommissioned 08/1/07					Decommissioned 08/1/07				
LG-40	7.0-12.0	Decommissioned 08/1/07					Decommissioned 08/1/07					Decommissioned 08/1/07					Decommissioned 08/1/07				
Upgradient West Boundary																					
LG-56	10.0-25.0	0.0	0.2	20.8	-	0.0	10.4	5.5	-	0.0	9.9	3.8	-	0.0	0.0	3.2	-	-	-		
LG-57	10.0-35.0	0.0	3.8	18.6	-	2.1	7.6	6.2	-	0.0	1.1	17.8	-	0.2	6.9	7.8	-	-	-		
LG-58	8.0-28.0	0.0	6.3	8.5	-	0.0	6.4	8.5	-	0.0	2.9	14.6	-	0.0	0.0	8.2	-	-	-		
LG-76	20.0-35.0	0.0	1.7	17.9	-	0.0	4.6	14.0	-	0.0	0.1	20.2	-	0.0	0.0	14.3	-	-	-		
LG-77	15.0-35.0	4.8	12.6	19.2	-	4.4	27.2	0.6	-	2.2	21.9	1.9	-	7.1	18.0	6.5	-	-	-		
LG-78	10.0-25.0	0.0	2.6	17.2	-	0.0	6.2	12.2	-	0.0	0.3	20.0	-	0.0	0.0	15.4	-	-	-		
Northern Landfill Boundary																					
LG-1	3.5-6	Decommissioned 7/11/10					Decommissioned 7/11/10					Decommissioned 7/11/10					Decommissioned 7/11/10				
LG-11	3.5-5.5	Monument filled					Monument filled					Monument filled					Monument filled				
LG-12	3.5-5.5	0.0	0.0	20.9	-	0.0	0.0	21.9	-	0.0	0.2	20.7	-	0.0	0.0	4.4	-	-	-		
LG-41	5.0-10.0	12.6	0.5	0.4	-	1.0	0.0	21.7	-	0.0	0.2	20.7	-	0.0	0.0	4.4	-	-	-		
LG-42	8.0-13.0	Decommissioned 7/11/10					Decommissioned 7/11/10					Decommissioned 7/11/10					Decommissioned 7/11/10				
LG-43	3.0-8.0	0.0	0.3	20.5	-	0.0	0.3	21.2	-	0.1	0.1	20.4	-	0.0	0	20.1	-	-	-		
LG-44	3.0-8.0	78.6	19.1	0.2	-	85.8	12.3	0.0	-	82.7	11.4	0.2	-	0.0	0.0	14.3	-	-	-		
LG-45	3.0-8.0	10.7	10.8	0.3	-	Gas probe in flooded area and inaccessible					0.0	0.0	20.5	-	Covered by building demo debris						
LG-46	10.0-15.0	under soil/sediments, could not locate					Under soil/sediments, could not locate					0.0	0.0	20.3	-	7.4	13.7	0.0	-	-	
LG-47	5.0-10.0	48.4	14.8	0.0	-	24.6	8.0	0.0	-	Under soil/sediments, could not locate					Under soil/sediments, could not locate						
LG-55	6.0-16.0	0.0	13.3	6.4	-	0.0	0.0	16.7	1.6	-	0.0	0.3	20.7	-	Could not locate in field						
LG-59	5.0-15.0	0.0	11.8	7.7	-	0.0	10.6	8.0	-	0.0	3.8	15.8	-	0.0	0.0	14.9	-	-	-		
LG-60	5.0-15.0	Monument damaged					Monument damaged					Monument damaged					Monument damaged				
LG-61	5.0-15.0	0.0	1.1	19.3	-	0.0	0.6	20.8	-	0.0	0.2	20.7	-	0.0	0.0	19.3	-	-	-		
LG-62	5.0-15.0	0.2	0.2	20.6	-	0.0	0.9	20.0	-	0.0	0.2	20.7	-	0.0	0.0	19.2	-	-	-		
LG-67	5.0-12.0	0.0	0.3	20.2	-	0.0	0.1	21.7	-	0.0	0.0	20.4	-	0.0	0.0	20.9	-	-	-		
LG-68	2.0-5.0	0.0	0.1	20.5	-	0.0	1.0	4.6	-	0.0	0.0	20.4	-	0.0	0.0	20.9	-	-	-		
LG-69	2.0-5.0	Buried under fill					Buried under fill					Buried under fill					Buried under fill				
LG-70	3.0-7.0	0.0	0.4	20.2	-	0.0	3.7	16.0	-	0.0	0.0	20.1	-	0.0	0.0	7.8	-	-	-		
Utility Trenches																					
I-5 (west end)																					
LG-48	3.0-6.0	Buried under fill					Buried under fill					Buried under fill					Buried under fill				
LG-49	2.5 to 6	Decommissioned 6/20/08					Decommissioned 6/20/08					Decommissioned 6/20/08					Decommissioned 6/20/08				
LG-50	4.0-12.0	Monument tilted / damaged					Monument tilted / damaged					Monument tilted / damaged					Monument tilted / damaged				
LG-51	3.0-5.0	Buried under fill					Buried under fill					Buried under fill					Buried under fill				
LG-63	3.0-4.0	Decommissioned 6/20/08					Decommissioned 6/20/08					Decommissioned 6/20/08					Decommissioned 6/20/08				
LG-64	4.0-7.0	Decommissioned 6/20/08					Decommissioned 6/20/08					Decommissioned 6/20/08					Decommissioned 6/20/08				
LG-65	5.0-15.0	Decommissioned 6/20/08					Decommissioned 6/20/08					Decommissioned 6/20/08					Decommissioned 6/20/08				
LG-66	5.0-8.0	Buried under bridge pier					Buried under bridge pier					Buried under bridge pier					Buried under bridge pier				
LG-74	5.0-7.0	Buried under fill					Buried under fill					Buried under fill					Buried under fill				
LG-75	3.0-5.0	Decommissioned					Decommissioned					Decommissioned					Decommissioned				
LG-79	2.0-4.0	Monument damaged					Monument damaged					Monument damaged					Monument damaged				
LG-80	2.0-4.0	Monument damaged					Monument damaged					Monument damaged					Monument damaged				
LG-81	6.75-11.75	Monument damaged					Monument damaged					Monument damaged					Monument damaged				
LG-82																					
LG-83																					
LG-84																					
LG-85																					
LG-86																					
LG-87																					
Eclipse (east end)																					
LG-52	3.0-8.0	Damaged 1/04					Damaged 1/04					Damaged 1/04					Damaged 1/04				

Table 1A
Everett Landfill - Recent Gas Probe Monitoring

Screen Interval	Water Depth (ft)	Date 10/29-31/2014					Date 1/21/15					Date 4/14/15					Date 7/29/15				
		CH4 %	CO2 %	O2 %	Pressure H20	Water Depth (ft)	CH4 %	CO2 %	O2 %	Pressure H20	Water Depth (ft)	CH4 %	CO2 %	O2 %	Pressure H20	Water Depth (ft)	CH4 %	CO2 %	O2 %	Pressure H20	
Landfill Interior																					
LG-2a	4.0-9.0	Damaged					Damaged					Damaged					Damaged				
LG-2b	12.0-17.0	Damaged					Damaged					Damaged					Damaged				
LG-2c	20.0-25.0	Damaged					Damaged					Damaged					Damaged				
LG-3a	7.0-12.0	Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08				
LG-3b	15.0-20.0	Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08				
LG-5	3.5-6.5	Decommissioned 2/18/03					Decommissioned 2/18/03					Decommissioned 2/18/03					Decommissioned 2/18/03				
LG-6	5.0-10.0	Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08				
LG-8	5.0-8.0	Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08				
LG-9a	4.0-9.0	Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08				
LG-9b	12.0-17.0	Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08				
LG-9c	20.0-25.0	Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08				
LG-10a	4.0-9.0	Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08				
LG-10b	11.0-16.0	Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08				
LG-10c	18.0-23.0	Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08				
LG-13	4.0-10.0	Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08				
LG-14	4.0-8.0	0.1	0.1	20.9	-		0.0	0.2	21.7	-		0.0	0.2	21.7	-		0.0	0	20.7	-	
LG-15	4.0-10.0	54.2	21.2	8.1	-		0.0	0.2	12.6	-		55.2	9.4	7.3	-		22.4	13.7	12.5	-	
LG-16	4.0-10.0	0.0	0.9	17.2	-		0.0	0.1	21.5	-		0.0	0.0	21.7	-		0.1	0.0	20.1	-	
LG-17	4.0-9.0	Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08				
LG-18	4.0-9.0	Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08					Decommissioned 2/21/08				
LG-19	5.0-12.5	Decommissioned 11/1/03					Decommissioned 11/1/03					Decommissioned 11/1/03					Decommissioned 11/1/03				
LG-20	4.0-9.0	Decommissioned 11/1/03					Decommissioned 11/1/03					Decommissioned 11/1/03					Decommissioned 11/1/03				
LG-82																					
LG-83																					
LG-84																					
West Boundary																					
LG-21	3.0-5.0	0.0	0.0	20.4	-		0.0	0.2	21.4	-		0.0	0.1	21.7	-		0.2	0.0	19.9	-	
LG-22	3.0-5.0	Damaged					Damaged					Damaged					Damaged				
LG-23	3.0-5.0	0.0	0.1	20.4	-		0.0	0.1	21.2	-		0.0	0.1	21.7	-		0.2	0.0	20	-	
LG-24	3.0-8.0	0.0	0.0	20.4	-		0.0	0.1	21.2	-		0.0	0.1	21.7	-		0.2	0.0	19.9	-	
LG-25	3.0-8.0	0.0	0.2	20.4	-		0.0	0.1	20.9	-		0.0	0.1	21.7	-		0.2	0.0	19.7	-	
LG-26	3.0-8.0	0.0	0.1	20.4	-		0.0	0.1	21.3	-		0.0	0.1	21.8	-		0.2	0.0	20.1	-	
LG-27	3.0-8.0	0.0	0.0	20.1	-		0.0	0.2	21.4	-		0.0	0.1	21.8	-		0.2	0.8	19.7	-	
LG-28	3.0-8.0	0.0	3.6	15.8	-		0.0	0.7	20.7	-		0.0	0.3	21.6	-		0.2	1.2	18.8	-	
LG-29	3.0-8.0	Damaged					Damaged					Damaged					Damaged				
LG-30	5.0-10.0	0.0	2.1	17.1	-		0.0	2.0	20.0	-		0.0	0.4	21.4	-		0.2	2.1	18.2	-	
LG-31	7.0-12.0	0.0	0.3	20.1	-		0.0	0.3	21.6	-		0.0	0.1	21.9	-		0.2	2.4	17.1	-	
LG-32	3.0-8.0	0.0	5.0	15.8	-		0.0	1.2	21.1	-		0.0	0.1	21.9	-		0.2	9.5	11.2	-	
LG-33	7.0-12.0	0.0	0.1	20.4	-		0.0	0.2	22.1	-		0.0	0.1	21.9	-		0.2	0.1	19.7	-	
LG-34	3.0-8.0	0.0	0.0	20.2	-		0.0	0.3	22.1	-		0.0	0.4	21.8	-		0.1	3.4	15.9	-	
LG-35	4.0-9.0	0.0	3.8	12.7	-		0.0	1.8	18.0	-		0.0	1.0	19.8	-		0.2	9.0	13	-	
LG-36	9.0-14.0	Decommissioned 08/1/07					Decommissioned 08/1/07					Decommissioned 08/1/07					Decommissioned 08/1/07				
LG-37	7.0-12.0	Decommissioned 08/1/07					Decommissioned 08/1/07					Decommissioned 08/1/07					Decommissioned 08/1/07				
LG-38	7.0-12.0	Decommissioned 08/1/07					Decommissioned 08/1/07					Decommissioned 08/1/07					Decommissioned 08/1/07				
LG-39	7.0-12.0	Decommissioned 08/1/07					Decommissioned 08/1/07					Decommissioned 08/1/07					Decommissioned 08/1/07				
LG-40	7.0-12.0	Decommissioned 08/1/07					Decommissioned 08/1/07					Decommissioned 08/1/07					Decommissioned 08/1/07				
Upgradient West Bounda																					
LG-56	10.0-25.0	0.0	3.3	2.6	-		0.0	6.4	12.4	-		0.0	0.1	21.3	-		0.1	13.6	3.6	-	
LG-57	10.0-35.0	2.8	7.9	8.2	-		0.3	0.8	20.6	-		0.0	0.1	21.3	-		2.1	11.1	3.4	-	
LG-58	8.0-28.0	0.0	4.9	12.1	-		0.0	2.9	17.2	-		0.0	0.1	21.4	-		0.2	1.5	18	-	
LG-76	20.0-35.0	0.0	0.7	10.4	-		0.0	0.6	21.3	-		0.0	0.1	21.4	-		0.2	3.6	14.2	-	
LG-77	15.0-35.0	9.4	29.2	1.5	-		1.4	3.4	19.8	-		Damaged - Broken Stopcock					7.1	11.4	12.7	-	
LG-78	10.0-25.0	0.0	0.1	21.3	-		0.0	1.7	18.3	-		0.0	0.1	21.4	-		0.2	9.3	8.2	-	
Northern Landfill Bounda																					
LG-1	3.5-6	Decommissioned 7/11/10					Decommissioned 7/11/10					Decommissioned 7/11/10					Decommissioned 7/11/10				
LG-11	3.5-5.5	Monument filled					Monument filled					Monument filled					Monument filled				
LG-12	3.5-5.5	Sample port filled with dirt					Sample port filled with dirt					Sample port filled with dirt					Sample port filled with dirt				
LG-41	5.0-10.0	0.0	11.2	0.6	-		0.0	0.2	21.3	-		0.0	6.3	9.8	-		0.2	13.2	5	-	
LG-42	8.0-13.0	Decommissioned 7/11/10					Decommissioned 7/11/10					Decommissioned 7/11/10					Decommissioned 7/11/10				
LG-43	3.0-8.0	0.0	0.2	20.1	-		0.0	0.2	21.4	-		0.7	0.7	20.5	-		0.1	0.7	19.7	-	
LG-44	3.0-8.0	Covered by building demo debris					Covered by building demo debris					Covered by building demo debris					Covered by building demo debris				
LG-45	3.0-8.0	Covered by building demo debris					Covered by building demo debris					Covered by building demo debris					Covered by building demo debris				
LG-46	10.0-15.0	7.4	13.7	0.0	-		18.7	6.5	16.7	-		6.0	0.1	19.6	-		8.2	3.8	17.9	-	
LG-47	5.0-10.0	Under soil/sediments, could not locate					Under soil/sediments, could not locate					Under soil/sediments, could not locate					Under soil/sediments, could not locate				
LG-55	6.0-16.0	Could not locate in field					Could not locate in field					Could not locate in field					Could not locate in field				
LG-59	5.0-15.0	0.0	5.4	16.0	-		0.0	1.6	20.8	-		0.0	3.8	15.8	-		Buried under fill				
LG-60	5.0-15.0	Monument damaged					Monument damaged					Monument damaged					Monument damaged				
LG-61	5.0-15.0	0.0	1.7	18.6	-		0.0	0.2	21.5	-		0.0	0.2	21.7	-		0.1	0	20.2	-	
LG-62	5.0-15.0	0.0	1.7	19.0	-		0.0	0.3	21.4	-		0.0	0.2	21.7	-		Buried under fill				
LG-67	5.0-12.0	0.0	0.3	20.8	-		0.0	0.2	21.2	-		0.0	0.1	21.6	-		Buried under fill				
LG-68	2.0-5.0	0.0	0.0	20.8	-		9.7	3.9	10.5	-		0.0	0.0	21.6	-		Buried under fill				
LG-69	2.0-5.0	Buried under fill					Buried under fill					Buried under fill					Buried under fill				
LG-70	3.0-7.0	Valve damaged					Valve damaged					Valve damaged					Valve damaged				
Utility Trenches																					
I-5 (west end)																					
LG-48	3.0-6.0	Buried under fill					Buried under fill					Buried under fill					Buried under fill				
LG-49	2.5 to 6	Decommissioned 6/20/08					Decommissioned 6/20/08					Decommissioned 6/20/08					Decommissioned 6/20/08				
LG-50	4.0-12.0	Monument tilted / damaged					Monument tilted / damaged					Monument tilted / damaged					Monument tilted / damaged				
LG-51	3.0-5.0	Buried under fill					Buried under fill					Buried under fill					Buried under fill				
LG-63	3.0-4.0	Decommissioned 6/20/08					Decommissioned 6/20/08					Decommissioned 6/20/08					Decommissioned 6/20/08				
LG-64	4.0-7.0	Decommissioned 6/20/08					Decommissioned 6/20/08					Decommissioned 6/20/08					Decommissioned 6/20/08				
LG-65	5.0-15.0	Decommissioned 6/20/08					Decommissioned 6/20/08					Decommissioned 6/20/08					Decommissioned 6/20/08				
LG-66	5.0-8.0	Buried under bridge pier					Buried under bridge pier					Buried under bridge pier					Buried under bridge pier				
LG-74	5.0-7.0	Buried under fill					Buried under fill					Buried under fill					Buried under fill				
LG-75	3.0-5.0	Decommissioned					Decommissioned					Decommissioned					Decommissioned				
LG-79	2.0-4.0	Monument damaged					Monument damaged					Monument damaged					Monument damaged				
LG-80	2.0-4.0	Monument damaged					Monument damaged					Monument damaged					Monument damaged				
LG-81	6.75-11.75	Monument damaged					Monument damaged					Monument damaged					Monument damaged				
LG-82																					
LG-83																					
LG-84																					
LG-85																					
LG-86																					
LG-87																					
Eclipse (east end)																					
LG-52	3.0-8.0	Damaged 1/04					Damaged 1/04					Damaged 1/04					Damaged 1/04				
LG-53	2.5-4.0	Buried under fill					Buried under fill					Buried under fill					Buried under fill				
LG-54	3.0-6.0	Bur																			

Table 1A
Everett Landfill - Recent Gas Probe Monitoring

Screen Interval	Date 11/20/15					Date 1/14/16				
	CH4 %	CO2 %	O2 %	Pressure H2O	Water Depth (ft)	CH4 %	CO2 %	O2 %	Pressure H2O	Water Depth (ft)
Landfill Interior										
LG-2a	4.0-9.0	Damaged				Damaged				
LG-2b	12.0-17.0	Damaged				Damaged				
LG-2c	20.0-25.0	Damaged				Damaged				
LG-3a	7.0-12.0	Decommissioned 2/21/08				Decommissioned 2/21/08				
LG-3b	15.0-20.0	Decommissioned 2/21/08				Decommissioned 2/21/08				
LG-5	3.5-6.5	Decommissioned 2/18/03				Decommissioned 2/18/03				
LG-6	5.0-10.0	Decommissioned 2/21/08				Decommissioned 2/21/08				
LG-8	5.0-8.0	Decommissioned 2/21/08				Decommissioned 2/21/08				
LG-9a	4.0-9.0	Decommissioned 2/21/08				Decommissioned 2/21/08				
LG-9b	12.0-17.0	Decommissioned 2/21/08				Decommissioned 2/21/08				
LG-9c	20.0-25.0	Decommissioned 2/21/08				Decommissioned 2/21/08				
LG-10a	4.0-9.0	Decommissioned 2/21/08				Decommissioned 2/21/08				
LG-10b	11.0-16.0	Decommissioned 2/21/08				Decommissioned 2/21/08				
LG-10c	18.0-23.0	Decommissioned 2/21/08				Decommissioned 2/21/08				
LG-13	4.0-10.0	Decommissioned 2/21/08				Decommissioned 2/21/08				
LG-14	4.0-8.0	0.2	0.2	20.2	-	0.0	0.1	21.2	-	
LG-15	4.0-10.0	72.3	21	0.5	-	68.7	10.1	6.0	-	
LG-16	4.0-10.0	0.2	0.2	21.4	-	0.0	0.1	21.0	-	
LG-17	4.0-9.0	Decommissioned 2/21/08				Decommissioned 2/21/08				
LG-18	4.0-9.0	Decommissioned 2/21/08				Decommissioned 2/21/08				
LG-19	5.0-12.5	Decommissioned 11/1/03				Decommissioned 11/1/03				
LG-20	4.0-9.0	Decommissioned 11/1/03				Decommissioned 11/1/03				
LG-82						44.2	6	8.3		
LG-83						79.2	15.3	0.4		
LG-84						70	14.8	2.4		
West Boundary										
LG-21	3.0-5.0	0.0	0.0	22.2	-	0.0	0.1	21.3	-	
LG-22	3.0-5.0	Damaged				Damaged				
LG-23	3.0-5.0	0.0	0.0	22.1	-	0.0	0.2	21.2	-	
LG-24	3.0-8.0	0.0	0.0	22	-	0.0	0.2	21.2	-	
LG-25	3.0-8.0	0.0	1.0	21.4	-	0.0	0.3	18.5	-	
LG-26	3.0-8.0	0.0	0.3	21.9	-	0.0	0.3	21.4	-	
LG-27	3.0-8.0	0.0	0.4	21.7	-	0.0	0.3	21.3	-	
LG-28	3.0-8.0	0.0	1.2	19.2	-	0.0	1.3	19.7	-	
LG-29	3.0-8.0	Damaged				Damaged				
LG-30	5.0-10.0	0.0	0.5	21.7	-	0.0	2.7	18.7	-	
LG-31	7.0-12.0	0.0	1.2	21.1	-	0.0	2.3	18.8	-	
LG-32	3.0-8.0	0.0	1.5	21	-	0.0	6.8	11.8	-	
LG-33	7.0-12.0	0.0	0.2	21.8	-	0.0	0.3	21.3	-	
LG-34	3.0-8.0	0.0	0.3	21.7	-	0.0	2.7	18.5	-	
LG-35	4.0-9.0	0.0	0.3	21.5	-	0.0	1.1	15.7	-	
LG-36	9.0-14.0	Decommissioned 08/1/07				Decommissioned 08/1/07				
LG-37	7.0-12.0	Decommissioned 08/1/07				Decommissioned 08/1/07				
LG-38	7.0-12.0	Decommissioned 08/1/07				Decommissioned 08/1/07				
LG-39	7.0-12.0	Decommissioned 08/1/07				Decommissioned 08/1/07				
LG-40	7.0-12.0	Decommissioned 08/1/07				Decommissioned 08/1/07				
Upgradient West Boundary										
LG-56	10.0-25.0	Monument damaged				Monument damaged				
LG-57	10.0-35.0	0.0	0.9	21.4	-	0.0	1.6	20.4	-	
LG-58	8.0-28.0	0.0	0	22.4	-	0.0	0.2	21.2	-	
LG-76	20.0-35.0	0.0	0.7	21.8	-	0.0	0.3	21.3	-	
LG-77	15.0-35.0	10.0	30.8	7.2	-	9.5	25.0	8.9	-	
LG-78	10.0-25.0	0.0	0.2	21.8	-	0.0	0.2	21.3	-	
Northern Landfill Boundary										
LG-1	3.5-6	Decommissioned 7/11/10				Decommissioned 7/11/10				
LG-11	3.5-5.5	Monument filled				Monument filled				
LG-12	3.5-5.5	Sample port filled with dirt				Sample port filled with dirt				
LG-41	5.0-10.0	0.0	4.3	16.9	-	0.0	7.3	10.8	-	
LG-42	8.0-13.0	Decommissioned 7/11/10				Decommissioned 7/11/10				
LG-43	3.0-8.0	0.0	0.6	21.2	-	0.0	0.6	21	-	
LG-44	3.0-8.0	Covered by building demo debris				Covered by building demo debris				
LG-45	3.0-8.0	Covered by building demo debris				Covered by building demo debris				
LG-46	10.0-15.0	2.0	2.0	20.3	-	3.4	6.3	18.5	-	
LG-47	5.0-10.0	Under soil/sediments, could not locate				Under soil/sediments, could not locate				
LG-55	6.0-16.0	0.0	14.8	3.2	-	0.0	8.7	10.3	-	
LG-59	5.0-15.0	Buried under fill				Buried under fill				
LG-60	5.0-15.0	Monument damaged				Monument damaged				
LG-61	5.0-15.0	0.0	3.9	13	-	0.0	0.2	21.2	-	
LG-62	5.0-15.0	0.0	0.3	20.2	-	0.0	0.3	21.0	-	
LG-67	5.0-12.0	0.0	0.0	21.3	-	0.0	0.1	21.2	-	
LG-68	2.0-5.0	Buried under fill				Buried under fill				
LG-69	2.0-5.0	Buried under fill				Buried under fill				
LG-70	3.0-7.0	Buried under fill				Buried under fill				
Utility Trenches										
I-5 (west end)										
LG-48	3.0-6.0	Buried under fill				Buried under fill				
LG-49	2.5 to 6	Decommissioned 6/20/08				Decommissioned 6/20/08				
LG-50	4.0-12.0	Monument tilted / damaged				Monument tilted / damaged				
LG-51	3.0-5.0	Buried under fill				Buried under fill				
LG-63	3.0-4.0	Decommissioned 6/20/08				Decommissioned 6/20/08				
LG-64	4.0-7.0	Decommissioned 6/20/08				Decommissioned 6/20/08				
LG-65	5.0-15.0	Decommissioned 6/20/08				Decommissioned 6/20/08				
LG-66	5.0-8.0	Buried under bridge pier				Buried under bridge pier				
LG-74	5.0-7.0	Buried under fill				Buried under fill				
LG-75	3.0-5.0	Decommissioned				Decommissioned				
LG-79	2.0-4.0	Monument damaged				Monument damaged				
LG-80	2.0-4.0	Monument damaged				Monument damaged				
LG-81	6.75-11.75	Monument damaged				Monument damaged				
LG-82										
LG-83										
LG-84										
LG-85						0.0	8.0	5.8	-	
LG-86						0.0	6.9	8.9	-	
LG-87						0.0	2.3	18.9	-	
Eclipse (east end)										
LG-52	3.0-8.0	Damaged 1/04				Damaged 1/04				
LG-53	2.5-4.0	Buried under fill				Buried under fill				
LG-54	3.0-6.0	Buried under fill				Buried under fill				
LG-71	4.0-6.0	Under stagnant water				Under stagnant water				
LG-72	2.5-4.0	Under stagnant water				Under stagnant water				
LG-73	4.0-6.0	Under stagnant water				Under stagnant water				

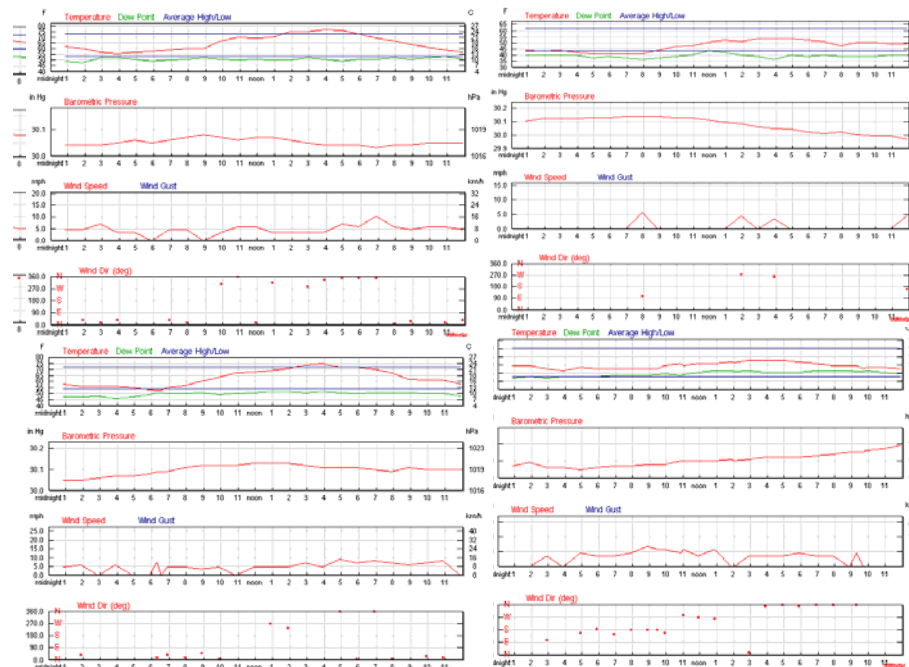


Table 2
Everett Landfill - Gas Monitoring at Structures

ON-SITE STRUCTURES

Structure/Address	8/12/1999	10/5/1999	11/8/1999	1/12/2000	2/9/2000	3/9/2000	3/9/2000	4/6/2000	5/3/2000	6/8/2000	7/10/2000	5/3/2000	6/8/2000	7/10/2000	8/10/2000	9/27/2000	10/25/2000	12/12/2000	9/27/2000	10/25/2000	12/12/2000	2/2/2001	5/15/2001	7/25/2001
sample location	Methane %	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm
Everett Animal Shelter																								
2732 36th Street																								
lawn sprinkler vault (N side of bldg.)	0.0	20		15	0	20	20	20	40	20	0	40	20	0	0	0	0	0	0	0	0	0	0	0
roof drains	0.0	0 - 20		0-20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Women's public restroom (floor drain)**	0.0	1,200	1160-2500	2140	0-40	4260	4260	4260	2420	0	0	2420	0	0	0	0	0	0	0	0	0	0	60	0
Men's public restroom (floor drain)**				1000	0-120	0	0	0	140	0	40	140	0	40	0	0	0	0	0	0	0	0	0	0
employee restroom (floor drains)	0.0	0	0	0	0	0	0	60	w=0,m=40	0	0	w=0,m=40	0	0	0	0	0	0	0	0	0	0	0	0
floor crack in storage room adj. to cat room	-	160	500	110	1140	420	420	220	3400	140	0	3400	140	0	0	0	0	0	0	0	0	0	1040	80
breathing zone in storage room adj. to cat room	-	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	660	0
telephone storage room	-	0	0	0	40	0	0	0	20	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0
Snohomish County Transfer Station																								
lunch room	0.0	0	0	0	0	0	0	240	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
restrooms	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
changing bldg	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
valve control vault	1.0			5000	260	2820	2820	8300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scale vault (south side)						3400	3400	1380	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scale Vault (north side)					2500	1020	1020	40	240	40	100	240	40	100	60	100	60	70	100	60	70	150		0

OFF-SITE STRUCTURES

GTS Drywall Supply Co.																								
2931 36th Street																								
roof drains (W, N, E sides of bldg)	0.0	0.0	0	0	0			0															0	
roof drain (SW corner of bldg)**	0.0	1200	0	0	0			0														0		
toilets	0.0	0.0		0	0			0														0		
floor cracks	0.0	0.0	0	0	0			0														0		
foundation cracks	0.0	0.0	0	0	0			0														0		
boiler pipe penetrations	0.0	0		0	0			0														0		
Everett Gospel Mission																								
3711 Smith Avenue																								
lawn sprinkler vault (N side of bldg)	0.0	60	40	20	0			0														0		0
floor cracks	0.0	0	0	0	0			0														0		0
foundation cracks	0.0	0		0	0			0														0		0
boiler pipe penetrations	0.0	0	0	0	0			0														0		0
food storage room	-	0	0	0-20	0			0														0		0
Cascade Wholesale																								
2410 38th Street																								
lawn sprinkler vault (E side of bldg)	0.0	20	20	10	0			0														0		0
roof drains	0.0	0		0	0			0														0		0
sewer	0.0	0		0	0			0														0		0
restrooms		0	0	0	0			0														0		0
floor cracks inside bldg		0-20	0	0-20	0-120			0														0		0
H & R Mechanical Systems Inc.																								
2407 38th Street																								
roof drains	0.0	0	0	0	0			0														0		0
cracks in pavement	0.0	0	0	0	0			0														0		0
floor cracks		0	0	0	0			0														0		0
Sno Valley Process Solutions																								
2420 38th Street																								
roof drains		0		0	0			0														0		0
cracks in pavement		0		0	0			0														0		0
floor cracks		0		0	0-60			0														0		0
Ron May Towing																								
2406 39th Street																								
bathrooms			0	0	20			60														0		0
exterior drains			0	0	0			0														0		0
Diversified Recycling/Car Wash Chemical Co.																								
2931 36th Street																								
boiler room					0			0														0		0
bathrooms					0			0														0		0
closet					0			0														0		0
beam/floor cracks					0			0														0		0
drainage pipe					0			0														0		0
roof drains outside building																								
warehouse breathing space																								
south sensor																								
north sensor																								

Table 2
Everett Landfill - Gas Monitoring at Structures

ON-SITE STRUCTURES

All sampling after & including 11/12/02 measured with Foxboro FID, Model OVA 128

Structure/Address	5/24/2002	7/17/2002	11/1/2002	11/12/2002	11/13/2002	11/14/2002	1/27/2003	5/8/2003	7/16/2003	10/9/2003	1/16/2004	4/7/2004	7/8/2004	10/13/2004	3/24/2005	7/13/2005	10/12/2005	1/24/2006	6/2/2006	8/18/2006	10/19/2006	1/16/2007	5/4/2007
sample location	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm
Everett Animal Shelter																							
2732 36th Street																							
lawn sprinkler vault (N side of bldg.)	80	40	20				0	0	0	0	0	0	1.2	0	0	0	0	0	0	0	0	0	0
roof drains	0	0	0				0	0	0	0	35.6	0.4	2	0	0	0	0	1.2	0	0	0	0	0
Women's public restroom (floor drain)**	40	20	20	12	0	0	0	0	0	0	84.2	0.8	1.2	0	0	0	0	0.8	0	0	0	0	0
Men's public restroom (floor drain)**	20	20	20	15	0	0	0	0	0	0	5.9	0.9	1.6	0	0	0	0	0.5	0	0	0	0	0
employee restroom (floor drains)	0	0	40	0	0	0	0	0	0	0	0	1.1	0.5	0	0	0	0	1.5	0	0	0	9.1	0
floor crack in storage room adj. to cat room	480	0	40	0	0	0	0	0	0	0	0	0.8	1.1	0	0	0	0	0.7	0	0	0	0	0
breathing zone in storage room adj. to cat room	200	0	60	6	0	0	0	0	0	0	0	0	1.9	0	0	0	0	1.5	0	0	0	0	0
telephone storage room	40	80	20	0	0	0	0	0	10.3	0	0	1.2	1.9	0	0	0	0	3	0	0	0	0	0
Snohomish County Transfer Station																							
lunch room	200	0	120	40	60	60	0	0	94.4	23.2	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station
restrooms	140	0	140	80	60	80	84	84	112.2	37.4	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed
changing bldg	0	0	20	0	0	0	0	0	5.4	0													
valve control vault	9000	140	440	0	0	0	500	>3637	0	0													
Scale vault (south side)	1240	3020	920	0	10	10	110	1900	0	0													
Scale Vault (north side)	7400	780	2200	200	200	450	520	720	368.2	65.7													
OFF-SITE STRUCTURES																							
GTS Drywall Supply Co.																							
2931 36th Street																							
roof drains (W, N, E sides of bldg)		0	vac	vac	vac	vac	vac	vac	vac	vac	vac	vac	vac	vac	vac	vac	vac	vac	vac	vac	vac	vac	vac
roof drain (SW corner of bldg)**		0																					
toilets		vac																					
floor cracks		0																					
foundation cracks		0																					
boiler pipe penetrations		vac																					
Everett Gospel Mission																							
3711 Smith Avenue																							
lawn sprinkler vault (N side of bldg)	40	60	120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0
floor cracks	0	0	20						0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0
foundation cracks	0	0	20						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
boiler pipe penetrations	0	0	0						2.4	0	63.6	1	2.5	0.5	0	0	0	1.5	0	0	63.4	28.2	14.6
food storage room	20	0	20						0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Cascade Wholesale																							
2410 38th Street																							
lawn sprinkler vault (E side of bldg)	60	20	20	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
roof drains	80	0	0				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
sewer	60	0	40				0	0	0	0	0.4	0	0	0	0	0	0	0	0	0	0	0	0
restrooms	0	0	140	0	0	0	0	0	7.6	0	0	0	23.6	0	0	0	0	8.5	0	0	0	0	0
floor cracks inside bldg	0	0	140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H & R Mechanical Systems Inc.																							
2407 38th Street																							
roof drains	0	0	vac	vac	vac	vac	vac	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
cracks in pavement	0	0						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
floor cracks	0	0						0	0	0	0	0	0	6.6	0	0	0	5	0	0	37.2	0	0
Sno Valley Process Solutions																							
2420 38th Street																							
roof drains	0	20	0				0	0	vac	vac	vac	0	0	0	0	0	0	0	0	0	0	0	0
cracks in pavement	0	0	0				0	0				0	0	0	0	0	0	0	0	0	0	0	0
floor cracks	0	0	20				0	0				18.9	5.9	6.6	0	0	0	3	0	3.7	10.7	0	0
Ron May Towing																							
2406 39th Street																							
bathrooms	0	0	140	0	0	0	0	0	0	0	0	0	0	4.4	0	0	0	0	0	0	0	0	0
exterior drains	0	20	0				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diversified Recycling/Car Wash Chemical Co.																							
2931 36th Street																							
boiler room	40	0	0				0	0	9	0	0	1.3	0	0	0	0	0	3.2	0	0	0	0	0
bathrooms	0	0	20				0	0	9.4	0	0	0.6	0.1	7.6	0	0	0	2.8	0	0	0	0	0
closet	0	0	20				0	0	8.1	0	9	0.2	0	3.5	0	0	0	4.1	0	0	0	0	0
beam/floor cracks	0	0	0				0	0	2.1	0	0	0	0	0	0	0	0	0.5	0	0	0	0	0
drainage pipe	0	40	0				0	0	0	0	0	0	0	0	0	0	0	1.2	0	0	0	0	0
roof drains outside building														804	0	0	0	0	0	0	0	0	0
warehouse breathing space														14.6	29.2	4.2	7	0.8	0	0	0	0	0
south sensor														7.2	5.5	0	1.1	0.8	0	0	0	0	0
north sensor														7.5	0	0	0.3	1.1	0	0	0	0	0

Table 2
Everett Landfill - Gas Monitoring at Structures

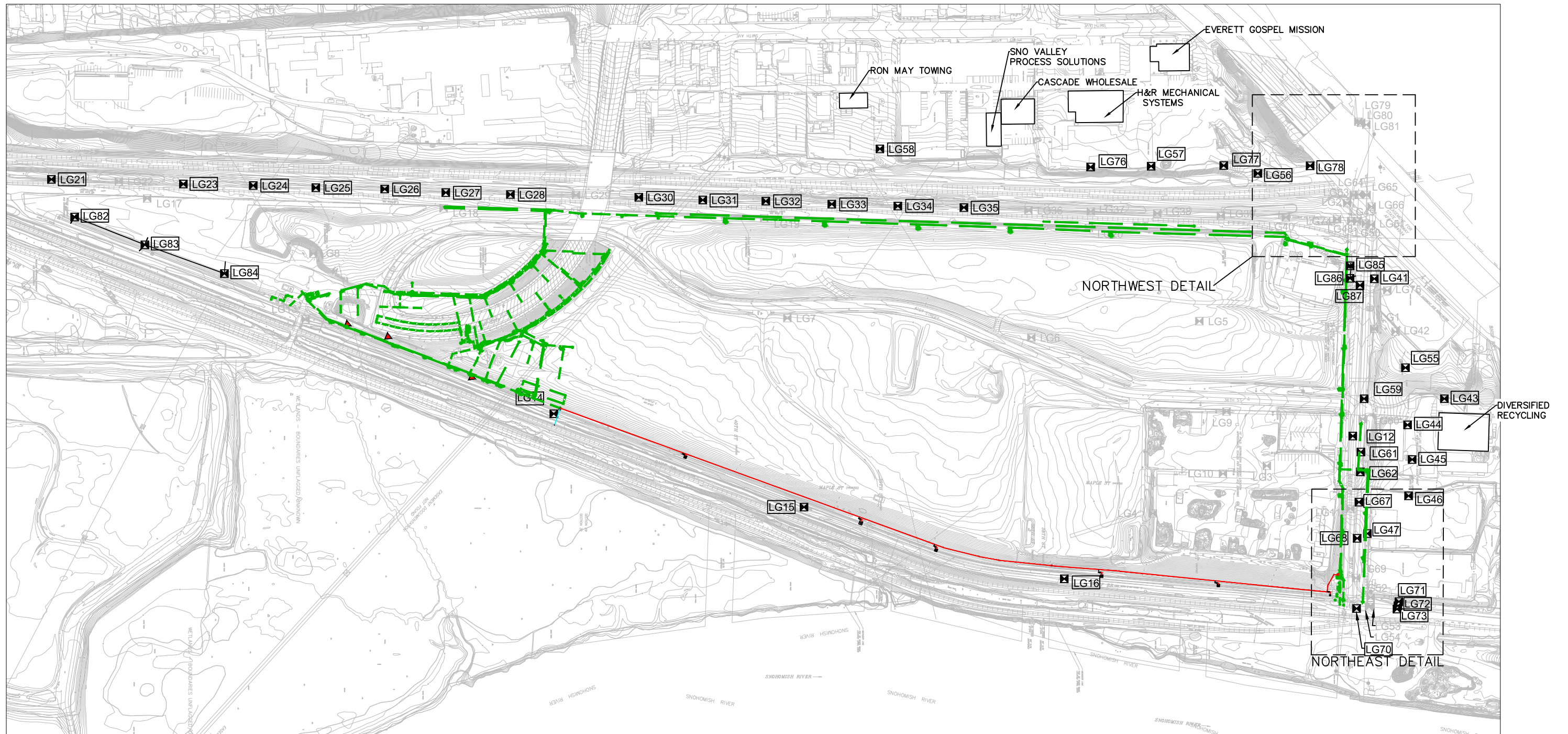
ON-SITE STRUCTURES

Structure/Address	7/9/2007	10/24/2007	2/1/2008	4/28/2008	6/13/2008	10/23/2008	1/16/2009	4/30/2009	7/10/2009	10/29/2009	1/20/2010	4/7/2010	7/8/2010	11/2/2010	1/26/2011	4/6/2011	7/12/2011	10/11/2011	12/27/2011	6/5/2012***	9/10/2012
sample location	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm
Everett Animal Shelter																					
2732 36th Street																					
lawn sprinkler vault (N side of bldg.)	0	0	0	0	0	0	0	animal shelter closed	animal shelter closed	animal shelter closed	animal shelter closed	animal shelter closed	animal shelter closed	animal shelter closed	animal shelter closed	animal shelter closed	animal shelter closed	animal shelter closed	animal shelter closed	animal shelter closed	animal shelter closed
roof drains	0	0	0	0	0	0	0.1														
Women's public restroom (floor drain)**	0	0	0	0	0	0	0														
Men's public restroom (floor drain)**	0	0	0.4	0	0	0	0														
employee restroom (floor drains)	0	0	0	0	0	0	1.1														
floor crack in storage room adj. to cat room	0	0	0	0	0	0	0														
breathing zone in storage room adj. to cat room	0	0	0	0	0	0	0														
telephone storage room	0	1.1*	0	0	0	1.3*	1.4														
Snohomish County Transfer Station																					
lunch room	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station
restrooms																					
changing bldg	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed
valve control vault																					
Scale vault (south side)																					
Scale Vault (north side)																					
OFF-SITE STRUCTURES																					
GTS Drywall Supply Co.																					
2931 36th Street	vac	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd
roof drains (W, N, E sides of bldg)																					
roof drain (SW corner of bldg)**																					
toilets																					
floor cracks																					
foundation cracks																					
boiler pipe penetrations																					
Everett Gospel Mission																					
3711 Smith Avenue																					
lawn sprinkler vault (N side of bldg)	0	0	0	0	0	0	0.4	0	0	0	1.8	0	1.2	0	0	0	13.3	0	0	20	0
floor cracks	0	0	0	0	0	0	0.9	0	0	0.1	0.3	0	1.8	0.6	0.5	1.9	0	0	0	0	1
foundation cracks	0	0	0	0	0	0	0.2	0	1.1	0	0.6	0	1.7	0	7.8	0	0	0	0	20	2
boiler pipe penetrations	25.2	0	22.1	20.4	18.1	4.8	0.4	2.4	1.3	0.6	1.1	14.2	7.5	2.2	0.7	2.2	0	2.6	5.8	0	1.4
food storage room	0	0	0	0	0	0	0.9	0	0	35.9	1.3	0	2.9	0.7	0.5	2.1	0	0	1	0	0
Cascade Wholesale																					
2410 38th Street																					
lawn sprinkler vault (E side of bldg)	0	0	0	0	0	0	1.3	0	0	0	6.1	0	1.2	0	0	0	0	0	0	60	1
roof drains	0	0	0	0	0	0	0.3	0	0	0	0	0	1.2	0	0	0	0	0	0	0.4	1.6
sewer	0	0	0.4	0	0	0	0.3	0	0	0	3.4	0	0.9	0	0	1.1	0	0	0	0	1.7
restrooms	0	0	1.2	0	0	0	0	0	0	0	1.8	0	2.5	0	0.5	0.4	8.3	0	1.4	20	1.9
floor cracks inside bldg	0	0	1.2	0	0	0	0.4	0	0	0	0.8	0	2.4	0.2	1	0	2.9	0	1.2	20	1.8
H & R Mechanical Systems Inc.																					
2407 38th Street																					
roof drains	0	0	1.7	0	0	0	0	0	0	0	4.7	0	1.9	0	0	0	0	0	0	0.4	20
cracks in pavement	0	0	9.7	0	0	0	0	0	0	0	5.6	0	1.7	0.2	0	0	0	0	0	0.3	10
floor cracks	0	0	2.6	0	0	0	7.5	0	0	0	0.5	0	4.4	0.2	0.5	0.4	0	0	0	0.6	10
Sno Valley Process Solutions																					
2420 38th Street																					
roof drains	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.2	0	0	0	0	0	0	1.5
cracks in pavement	0	0	1.7	0	0	0	0	0	1.2	0	0	0	0.8	0	0	0	0	0	0	0	1.3
floor cracks	0	0	1.2	0	0	0	1.2	0	2.2	0	2.2	0	3	0.7	0	0.3	0	0	1.1	0	1.5
Ron May Towing																					
2406 39th Street																					
bathrooms	0	9.8	7.8	6.5	5.1	1.3	0.2	2.4	0.9	7.3	0.3	0	2.3	0.9	0.5	0.5	18.6	0	0.5	20	0.4
exterior drains	0	0	0.2	0.8	0.2	0	0	0	0	0	0	0	1.2	0.2	16.3	1.4	0	0	0	0.1	20
Diversified Recycling/Car Wash Chemical Co.																					
2931 36th Street																					
boiler room	0	0	1	0	0	0	0	0	0	4.3	0	0	0.4	0.7	1.2	0.3	2.1	0	0.9	0	0
bathrooms	0	0	0.5	0	0	0	0	0	0	2.2	0	0	0.2	0.5	1	1.3	0	0	0	0.7	0.5
closet	0	0	0.3	0	0	0	0	0	0	3.1	1.2	0	0.8	0.4	1.3	0.8	0	0	0	0.8	0
beam/floor cracks	0	0	0.6	0	0	0	0	0	0	3.8	0	0	0	0	0	0	0	0	0	0.6	1.2
drainage pipe	0	0	0	0	0	0	0	0	0	1.3	0	0	0	0	0	0	0	0	0	0.5	0
roof drains outside building	0	0	0	0	0	0	0	0	0	5.6	0	0	0	0.5	0	0	33.8	0	32.2	0	0
warehouse breathing space	0	0	0	0	0	0	0	0	0	2.7	2.7	0	0.7	1.1	0	0.1	0	0	0	0.9	0
south sensor	0	0	0	0	0	0	0	0	0	NA	3.5	3.9	0	1.5	1	0.5	0.2	0	0	1	0
north sensor	0	0	0	0	0	0	0	0	0	NA	3.5	3.4	0	1.5	1	0.6	0.5	0	0	1.2	1.4

Table 2
Everett Landfill - Gas Monitoring at Structures

ON-SITE STRUCTURES

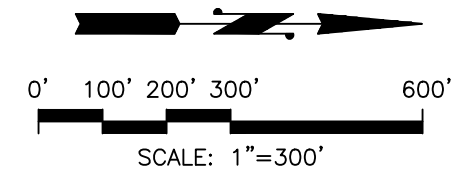
Structure/Address	10/23/2012***	1/16/2013	4/26/2013***	7/26/2013	10/24/2013	1/30/2014	5/7/2014	7/22/2014	11/6/2014	1/22/2015	4/23/2015	7/27/2015	11/20/2015	1/4/2016	4/13/2016	7/25/2016	11/7/2016	2/7/2017
sample location	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm	Methane ppm
Everett Animal Shelter																		
2732 36th Street																		
lawn sprinkler vault (N side of bldg.)	animal shelter	animal shelter	animal shelter	animal shelter	animal shelter	animal shelter	animal shelter	animal shelter	animal shelter	animal shelter	animal shelter	animal shelter	animal shelter	animal shelter	animal shelter	animal shelter	animal shelter	animal shelter
roof drains	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed
Women's public restroom (floor drain)**																		
Men's public restroom (floor drain)**																		
employee restroom (floor drains)																		
floor crack in storage room adj. to cat room																		
breathing zone in storage room adj. to cat room																		
telephone storage room																		
Snohomish County Transfer Station																		
lunch room	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station	transfer station
restrooms	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed
changing bldg																		
valve control vault																		
Scale vault (south side)																		
Scale Vault (north side)																		
OFF-SITE STRUCTURES																		
GTS Drywall Supply Co.																		
2931 36th Street	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd
roof drains (W, N, E sides of bldg)																		
roof drain (SW corner of bldg)**																		
toilets																		
floor cracks																		
foundation cracks																		
boiler pipe penetrations																		
Everett Gospel Mission																		
3711 Smith Avenue																		
lawn sprinkler vault (N side of bldg)	0	0	0	0	0	0	0	0	0	0.3	0	0	0	0	0	0.1	0	0
floor cracks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
foundation cracks	0	0	0	1	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0
boiler pipe penetrations	10	0	0	2	0	0	0	0	0.1	0	0	0	0	0.4	0	0.1	0	0
food storage room	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cascade Wholesale																		
2410 38th Street																		
lawn sprinkler vault (E side of bldg)	0	0	0	0	0	0	0	0	1.4	0	0	0	0	0	0	0	0	0
roof drains	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
sewer	20	1.5	10	12	0	0	0.1	20.5	1.5	0.2	0.2	0.1	0.1	1.9	0.2	0	0	1.8
restrooms	0	1.1	0	1.2	0	0	0	0	0	0	0	0	0	0.8	0.2	0	0	0.2
floor cracks inside bldg	0	0	0	1	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0
H & R Mechanical Systems Inc.																		
2407 38th Street																		
roof drains	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
cracks in pavement	0	0	0	0	0	0	0	0	0.2	3	0	0	0	0	0	0	0	0
floor cracks	0	NA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sno Valley Process Solutions																		
2420 38th Street																		
roof drains	0	0	0	0	0	0	0	0	0.3	0	0	0	0	0	0.1	0	0	0
cracks in pavement	0	0	0	0	0	0	0	0	0	5.7	0	0	0	0	0	0	0	0
floor cracks	0	0	0	0	0	0	0	0	0.4	0	0	0	0	0	0	0	0	0
Ron May Towing																		
2406 39th Street																		
bathrooms	0	0	0	0.2	0	0	0	0	0.5	0	0	0.1	0.1	0	0	0.1	0	0.3
exterior drains	0	0	0	0	0	0	0	1.1	1.3	0	0	0	0	0	0.1	0	0	0
Diversified Recycling/Car Wash Chemical Co.																		
2931 36th Street																		
boiler room	0	0	0	0	0	0	recycling center closed	recycling center closed	0	0	0	0	0	0	0	0	0	0
bathrooms	0	0	0	0.4	0	0			0	0	0	0	0	0	0	0	0	0
closet	0	0	0	0	0	0			0	0	0	0	0	0	0	0	0	0
beam/floor cracks	0	0	0	0	0	0			0	0	0	0	0	0	0	0	0	0
drainage pipe	0	0	0	0.4	0	0			0	0	0	0	0	0	0	0	0	0
roof drains outside building	0	0	10	2.4	0	0			0	0	0	0	0	0	0	0	0	0
warehouse breathing space	0	0	0	0	0	0			0	0	0	0	0	0	0	0	0	0
south sensor	0	0	0	0	0	0				bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd	bldg demo'd
north sensor	0	0	0	0	0	0												



LEGEND

- LANDFILL GAS HEADER
- LANDFILL GAS COLLECTION TRENCH
- ☒ LG28 EXISTING LFG GAS PROBS
- ☒ LG36 DECOMMISSIONED, ABANDONED OR DAMAGED LFG PROBS
- DETAIL SECTIONS SEE FIGURE 2

BASE MAP PROVIDED BY:



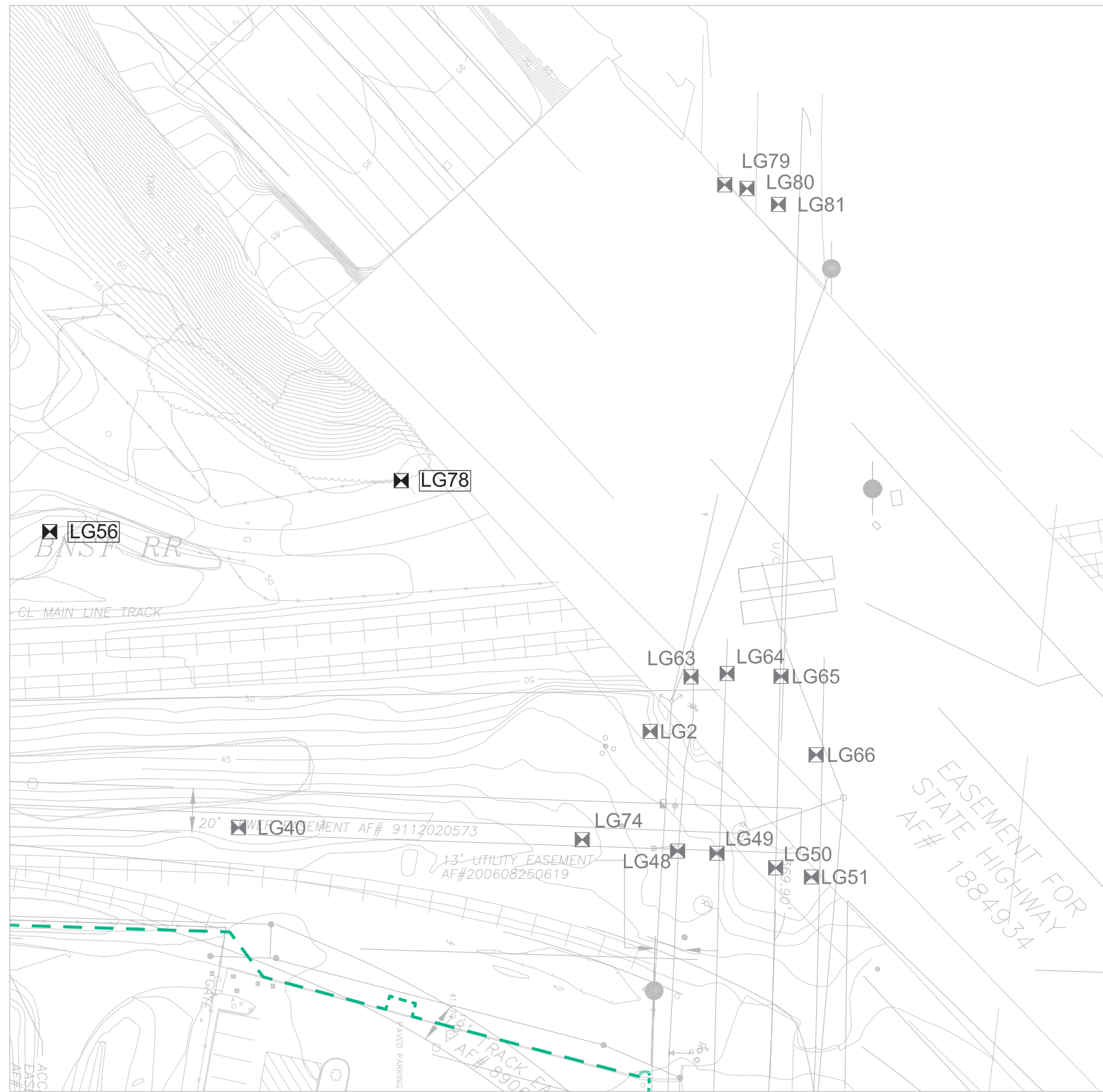
HWA GEOSCIENCES INC.

EVERETT LANDFILL
EVERETT, WASHINGTON

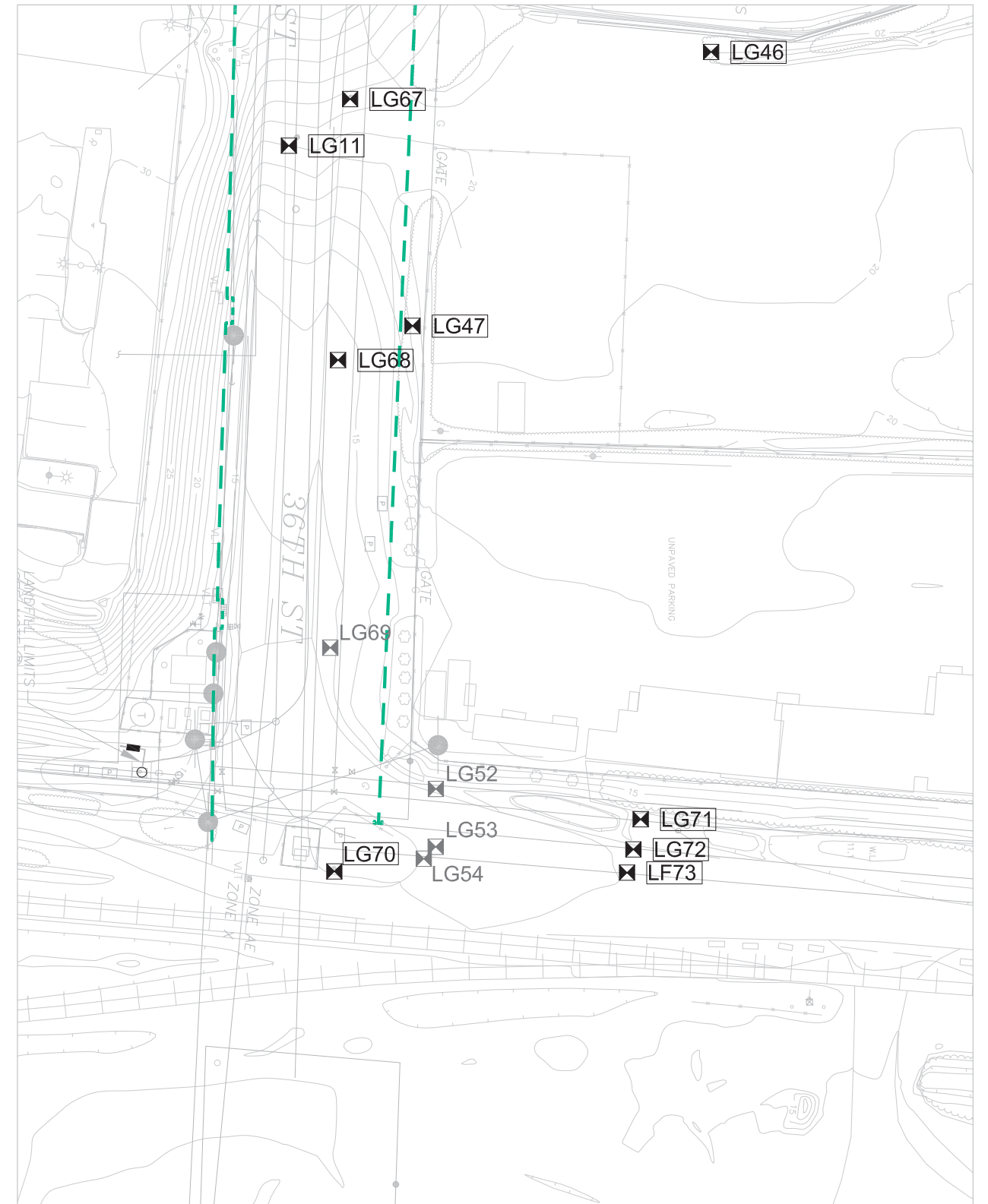
LANDFILL GAS PROBE
LOCATION MAP

DRAWN BY
EFK
CHECKED BY
AS
DATE
01.11.16

FIGURE NO.
1
PROJECT NO.
1998-165
TASK-660



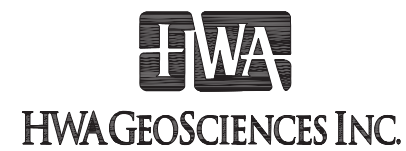
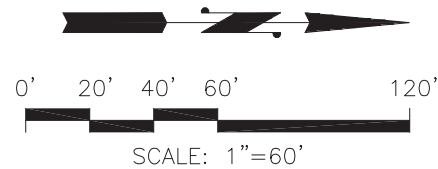
NORTHWEST CORNER



NORTHEAST CORNER

LEGEND

- - - LANDFILL GAS COLLECTION TRENCH
- X LG28 EXISTING LFG GAS PROBS
- X LG36 DECOMMISSIONED, ABANDONED OR DAMAGED LFG PROBS



EVERETT LANDFILL
EVERETT, WASHINGTON

**LANDFILL GAS PROBE
LOCATION MAP,
DETAIL**

DRAWN BY	EFK	FIGURE NO.	2
CHECKED BY	AS	PROJECT NO.	
DATE	04.16.14	1998-165	TASK-670

