HWA GeoSciences Inc.
Geotechnical Engineering • Hydrogeology • Geoenvironmental Services • Inspection and Testing

January 14, 2016
HWA Project No. 98165-660

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

Attention: Mark Sadler

Subject: **Performance Monitoring Annual Report 2015**
Everett Landfill/Tire Fire Site
Everett, Washington

Dear Mark,

This letter presents the annual report for the period of August 1, 2014 to July 31, 2015, for ground water monitoring at the Everett Landfill/Tire Fire Site (herein referred to as Landfill), per the Compliance Monitoring and Contingency Plan.

GROUND WATER MONITORING

HWA collected ground water samples semi-annually, in early February and in late July 2015. Figure 1 shows the location of the ground water sampling locations. Sampling locations included:

- Six deep aquifer network monitoring wells: MW-11R, MW-21R (upgradient), MW-29R, MW-30, MW-31 (downgradient), and MW-37. Well MW-29 was damaged some time prior to January 2012 and the replacement monitoring well, MW-29R, was installed in July 2015.
- Three deep point-of-compliance monitoring wells: MW-36, MW-38, and MW-39R. Well MW-39 was covered by installation of a new trail some time after January 2013 and the replacement monitoring well, MW-39R, was installed in July 2015.

ANALYSIS

Samples were submitted to ALS Environmental (ALS, formerly CCI Analytical Laboratories) in Everett, Washington and the City of Everett Environmental Laboratory (EEL) for the following analyses:

- Semi-volatile organic compounds (SVOCs), including: bis(2-ethylhexyl)phthalate (submitted to CCI);
- Dissolved metals, including: arsenic, iron, manganese, nickel, and zinc (submitted to EEL); and

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- Chloride (submitted to EEL).

RESULTS

Table 1 summarizes the ground water analytical results. Appendix A contains copies of the CCI and EEL laboratory reports and HWA's data verification quality control/quality assurance report.

Referring to Table 1, in the 2015 monitoring period site-specific ground water cleanup levels were exceeded for iron in well MW-31, consistent with all previous results from this well. No exceedances were recorded for samples collected from any of the other performance monitoring wells during the 2015 monitoring period.

The duplicate sample collected in February 2015 from MW-21R (the upgradient well) exhibited a bis(2-ethylhexyl)phthalate concentration of 16 micrograms per liter (ug/L), which is above the cleanup level of 10 ug/L. The primary sample from that well did not contain any bis(2-ethylhexyl)phthalate above the laboratory reporting limit of 2 ug/L, nor did any of the other samples collected during that event, suggesting some problem with the duplicate sample, either in the lab or in the field. Based on this anomaly, and the fact that MW-21R is the upgradient (presumed clean) well, no action was taken based on this result.

NEW ACTIVITY

New activity for 2015 included the following:

- Preparation and approval by Ecology of a new sampling and analysis plan (HWA GeoSciences Inc., *Everett Landfill/Tire Fire Site 2015 Ground Water Sampling and Analysis Plan*, May 22, 2015)
- Drilling and installation of new wells MW39R and MW29R to replace damaged wells MW-39 and MW-29
- Drilling and installation of hydraulic control piezometer MW-46 near the leachate collector trench

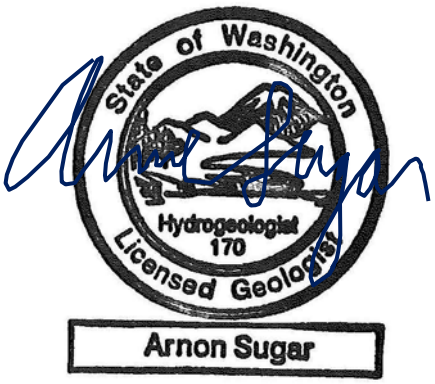
GROUND WATER GRADIENT

Table 2 lists ground water depths and elevations. Based on numerous past studies, ground water in the deep aquifer flows to the east, towards the Snohomish River, with gradients ranging from 0.01 to 0.02 ft/ft. Although ground water levels are still being measured in all wells sampled, ground water gradients are no longer mapped and interpreted, per the 2015 SAP. Shallow and deep ground water gradients have already been established over many years of monitoring, and most of the remaining wells are located in a line parallel to the river, making estimation of the gradient direction and magnitude difficult.

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

Sincerely,

HWA GEOSCIENCES INC.



Nicole Kapise
Senior Environmental Geologist

Arnie Sugar, LG, LHG
Principal Hydrogeologist

Attachment A - Laboratory Reports and QA/QC Report

Table 1
Performance Monitoring
Ground Water Analytical Results
Everett Landfill

			Dissolved Metals					Conventional	SVOC
	Chemical Name		Arsenic	Iron	Manganese	Nickel	Zinc	Chloride	bis (2-Ethylhexyl) phthalate
	Unit		(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mg/L)	(ug/L)
Sample Location	Sample Type	C.L. / Date	25	23687	4040	10	76.6	230	10
MW-11R	NET	7/9/2001	6 U	**9223**	**1430**	5 U	8 U	**11.8**	1 U
MW-11R		10/3/2001	6 U	**7945**	**1553**	2 U	8 U	**18.0**	1 U
MW-11R		1/18/2002	6 U	**9439**	**1910**	2 U	**10.453**	**11.6**	4 U
MW-11R		4/10/2002	6 U	**8742**	**2025**	4 U	8 U	**13.8**	4 U
MW-11R		7/11/2002	4 U	**32**	**440**	4 U	8 U	**13.3**	4 U
MW-11R		10/9/2002	**4**	**12400**	**2210**	4 U	8 U	**19.8**	4 U
MW-11R		1/13/2003	4 U	**3970**	**97**	**4.6**	**8**	**40.3**	1 U
MW-11R		4/23/2003	4 U	**11000**	**1810**	4 U	8 U	**20.2**	1 U
MW-11R		10/9/2003	4 U	**12800**	**1860**	4 U	8 U	**38.4**	2.8 B
MW-11R		4/6/2004	2 U	**10200**	**1260**	2 U	8 U	**8.8**	1 U
MW-11R		7/15/2005	2 U	**12500**	**1260**	2 U	8 U	**8.0**	10 U
MW-11R		2/1/2006	4 U	**11800**	**1240**	2 U	8 U	**14.0**	10 U
MW-11R		7/10/2006	4 U	**13500**	**1700**	2 U	8 U	**13.0**	2 U
MW-11R		1/10/2007	4 U	**12400**	**1560**	4 U	8 U	**18.3**	2 U
MW-11RD		1/10/2007	4 U	**12700**	**1600**	4 U	8 U	**18.3**	2 U
MW-11R		7/17/2007	4 U	**11800**	**1600**	4 U	8 U	**15.6**	2 U
MW-11R		1/24/2008	2 U	**11500**	**1490**	4 U	8 U	**12.6**	10 U
MW-11R		6/18/2008	1.4 U	**12300**	**1410**	0.5 U	5 U	**11.5**	2 U
MW-11RD		6/18/2008	1.4 U	**12400**	**1420**	0.5 U	5 U	**11.4**	2 U
MW-11R		1/21/2009	1.7 U	**12200**	**1430**	0.5 U	5 U	**10.7**	2 U
MW-11R		7/10/2009	**1.2**	**14100**	**1410**	1 U	10 U	**14.5**	2 U
MW-11R		1/29/2010	**1.9**	**10800**	**1300**	1 U	10 U	**12.9**	2 U
MW-11R		7/28/2010	0.6 U	**9860**	**992**	0.5 U	5 U	**7.4**	2 U
MW-11R		1/20/2011	1.4 J	**11300**	**1250**	1 U	10 U	**10.8**	2 U
MW-11R		7/19/2011	1 U	**7960**	**716**	1 U	10 U	**8.8**	2 U
MW-11RD		7/19/2011	1 U	**7980**	**720**	1 U	10 U	**8.8**	2 U
MW-11R		1/23/2012	NS	NS	NS	NS	NS	NS	NS
MW-11R		7/11/2012	2.3	**7600**	**535**	0.5 U	5 U	**4.1**	2 U
MW-11R		1/22/2013	1.5 J	**3320**	**294**	1 U	10 U	**3.5**	2 U
MW-11R		7/18/2013	0.6 J	**5800**	**444**	0.5 U	5 U	**3.9**	**2.6**
MW-11R		1/31/2014	0.8 J	**6260**	**446**	0.5 U	5 U	**8.3**	2 U
MW-11R		7/25/2014	0.6 J	**5920**	**400**	0.5 U	5 U	**4.9**	2 U
MW-11R		2/9/2015	1 U	**5630**	**433**	1 U	10 U	**3.1**	2 U
MW-11R		7/29/2015	1 U	**5600**	**509**	1 U	10 U	**3.4**	2 U
MW-21	NET	7/3/2001	6 U	**15**	**234**	5 U	8 U	**18.1**	1 U
MW-21		10/2/2001	6 U	**25**	**147**	**7.8**	8 U	**19.7**	1 U
MW-21		1/18/2002	6 U	**49**	**199**	**9.06**	8 U	**20.0**	4 U
MW-21		4/9/2002	6 U	**37**	**222**	**8.82**	8 U	**18.2**	4 U
MW-21		7/9/2002	4 U	**17**	**166**	**7.6**	8 U	**21.1**	4 U
MW-21		10/9/2002	4 U	**15**	**241**	**8.2**	8 U	**16.3**	4 U
MW-21		1/14/2003	4 U	**22**	**205**	**8.3**	8 U	**19.7**	1 U
MW-21		4/22/2003	4 U	**25**	**159**	**8.4**	8 U	**20.2**	1 U
MW-21		10/9/2003	4 U	**17**	**245**	**9.1**	8 U	**16.0**	1 U
MW-21		4/5/2004	2 U	**36**	**293**	**9.9**	8 U	**17.9**	1 U
MW-21		7/14/2005	2 U	**22**	**189**	**8.6**	8 U	**18.0**	10 U
MW-21		1/31/2006	4 U	**49**	**132**	**7.9**	**9**	**18.0**	10 U
MW-21R	NET	1/21/2009	**22.3**	**2470**	**1210**	**2.3**	8 U	**13.7**	2 U
MW-21R		7/9/2009	**31**	**7950**	**1970**	1 U	10 U	**9.1**	2 U
MW-21RD		7/9/2009	**30.4**	**7910**	**1940**	1 U	10 U	**9.4**	2 U
MW-21R		1/28/2010	**16.9**	**7510**	**1410**	1 U	10 U	**12.6**	2 U
MW-21R		7/28/2010	**23.7**	**8580**	**1660**	0.5 U	5 U	**9.1**	2 U
MW-21R		1/20/2011	**24.2**	**11400**	**1720**	1 U	10 U	**10.0**	2 U
MW-21R		7/19/2011	**25**	**11700**	**1830**	1 U	10 U	**8.5**	2 U
MW-21R		1/23/2012	**24.6**	**11400**	**2080**	1 U	10 U	**8.4**	2 U
MW-21R		7/18/2012	**6.8**	**8820**	**1600**	0.6 J	5 U	**11.1**	2 U
MW-21R		1/22/2013	1.0 J	**290**	**50**	1 U	10 U	**10.4**	2 U
MW-21R		7/18/2013	0.7 J	**98**	**121**	0.7 J	5 U	**12.2**	2 U
MW-21R		2/1/2014	**20.6**	**10300**	**1860**	0.5 U	5 U	**7.4**	2 U
MW-21R		7/25/2014	**15.0**	**9220**	**1280**	0.5 U	5 U	**9.6**	2 U
MW-21R		2/10/2015	**21**	**13700**	**1720**	1 U	10 U	**10.2**	2 U
MW-21RD		2/10/2015	**24.2**	**14000**	**1730**	1 U	10 U	**10.5**	**16**
MW-21R		7/30/2015	1.8 J	42 J	3 J	1 U	10 U	**10.9**	2 U
MW-28	NET	7/6/2001	**8**	**7972**	**247**	5 U	8 U	**4.5**	1 U
MW-28		10/5/2001	**8**	**5414**	**161**	2 U	8 U	**4.8**	1 U
MW-28		1/23/2002	**8.52**	**9332**	**273**	2 U	8 U	**4.8**	4 U
MW-28		4/15/2002	**8.18**	**7644**	**239**	4 U	8 U	**4.7**	4 U
MW-28		7/9/2002	**13**	**8220**	**231**	4 U	8 U	**5.3**	4 U
MW-28D		7/9/2002	**12**	**8260**	**233**	4 U	8 U	**5.3**	4 U
MW-28		10/14/2002	**8**	**7490**	**217**	4 U	8 U	**5.1**	4 U
MW-28		1/16/2003	**8**	**9190**	**257**	4 U	8 U	**5.4**	1 U
MW-28		4/24/2003	**8**	**7350**	**239**	4 U	8 U	**5.0**	1 U
MW-28		10/14/2003	**8**	**8020**	**225**	4 U	8 U	**5.2**	**5.6**
MW-28		4/12/2004	**7**	**7450**	**248**	2 U	8 U	**4.9**	1 U
MW-28		7/19/2005	**8**	**8750**	**265**	2 U	8 U	**5.0**	10 U

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Performance Monitoring
Ground Water Analytical Results
Everett Landfill

			Dissolved Metals					Conventional	SVOC
	Chemical Name		Arsenic	Iron	Manganese	Nickel	Zinc	Chloride	bis (2-Ethylhexyl) phthalate
	Unit		(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mg/L)	(ug/L)
Sample Location	Sample Type	C.L. / Date	25	23687	4040	10	76.6	230	10
MW-28		2/3/2006	**8**	**8950**	**244**	2 U	8 U	**5.0**	10 U
MW-28		7/11/2006	**8**	**6440**	**200**	2 U	**10**	**5.2**	2 U
MW-28		1/10/2007	**8**	**8960**	**250**	4 U	8 U	**5.3**	2 U
MW-28		7/18/2007	**7**	**6110**	**240**	4 U	8 U	**5.6**	2 U
MW-28		1/29/2008	**9**	**7300**	**230**	4 U	8 U	**5.2**	10 U
MW-28D		1/29/2008	**7**	**6420**	**220**	4 U	8 U	**5.1**	10 U
MW-28		6/19/2008	**10.2**	**9000**	**236**	0.5 U	5 U	**4.9**	2 U
MW-29	NET	7/10/2001	6 U	**3930**	**378**	5 U	8 U	**9.8**	1 U
MW-29		10/3/2001	6 U	**288**	**186**	2 U	8 U	**10.1**	1 U
MW-29		1/24/2002	6 U	**4472**	**376**	2 U	8 U	**10.1**	4 U
MW-29		4/12/2002	6 U	**4593**	**372**	4 U	8 U	**9.7**	4 U
MW-29		7/10/2002	4 U	**5240**	**361**	4 U	8 U	**10.4**	4 U
MW-29		10/11/2002	4 U	**4580**	**367**	4 U	8 U	**10.7**	4 U
MW-29		1/17/2003	4 U	**4480**	**346**	4 U	8 U	**11.3**	**1.1**
MW-29		4/30/2003	4 U	**4800**	**356**	4 U	8 U	**10.4**	**2**
MW-29		10/13/2003	4 U	**4670**	**373**	4 U	8 U	**10.4**	1 U
MW-29		4/9/2004	2 U	**5180**	**400**	2 U	8 U	**11.6**	1 U
MW-29		7/18/2005	2 U	**4310**	**394**	2 U	8 U	**10.0**	10 U
MW-29		2/3/2006	**5**	**4030**	**319**	2 U	8 U	**11.0**	10 U
MW-29		7/11/2006	4 U	**3320**	**360**	2 U	**8**	**10.4**	2 U
MW-29		1/12/2007	4 U	**4040**	**350**	4 U	8 U	**11.0**	2 U
MW-29		7/18/2007	4 U	**4270**	**380**	4 U	8 U	**11.4**	2 U
MW-29		1/29/2008	2 U	**4140**	**370**	4 U	8 U	**10.5**	10 U
MW-29		6/18/2008	0.5 U	**4650**	**352**	0.5 U	5 U	**10.7**	2 U
MW-29		1/22/2009	0.5 U	**7210**	**361**	0.5 U	5 U	**11.4**	2 U
MW-29		7/10/2009	1 U	**7010**	**380**	**1.3**	10 U	**10.7**	2 U
MW-29		1/28/2010	1 U	**4550**	**355**	1 U	10 U	**9.7**	2 U
MW-29		7/30/2010	0.6 J	**4270**	**326**	0.5 U	5 U	**9.1**	2 U
MW-29		1/21/2011	1 U	**5520**	**358**	1 U	10 U	**10.0**	2 U
MW-29		7/18/2011	1 U	**4420**	**341**	1 U	10 U	**9.3**	**2.4**
MW-29		1/23/2012	NS	NS	NS	NS	NS	NS	NS
MW-29		7/18/2012	NS	NS	NS	NS	NS	NS	NS
MW-29		1/22/2013	NS	NS	NS	NS	NS	NS	NS
MW-29R		7/29/2015	2.6 J	**1800**	**473**	3.6 J	10 U	**108**	7.7
MW-30	NET	7/5/2001	**8**	**4653**	**573.75**	5 U	8 U	**27.1**	1 U
MW-30		10/3/2001	6 U	**254**	**186**	2 U	8 U	**26.5**	1 U
MW-30		1/25/2002	**9.34**	**6578**	**548.08**	2 U	8 U	**23.7**	4 U
MW-30		4/11/2002	**11.14**	**6253**	**506.64**	4 U	8 U	**23.1**	4 U
MW-30		7/10/2002	4 U	**222**	**324**	4 U	8 U	**23.9**	4 U
MW-30		10/10/2002	**11**	**5810**	**484**	4 U	8 U	**19.4**	4 U
MW-30		1/16/2003	**11**	**6240**	**505**	4 U	8 U	**19.6**	1 U
MW-30		4/29/2003	**9**	**5850**	**500**	4 U	8 U	**19.7**	1 U
MW-30		10/13/2003	**10**	**5380**	**478**	4 U	8 U	**17.0**	1 U
MW-30		4/8/2004	**11**	**5160**	**495**	2 U	8 U	**18.4**	1 U
MW-30		7/14/2005	**9**	**5070**	**480**	2 U	8 U	**21.0**	10 U
MW-30		2/3/2006	**13**	**5290**	**460**	2 U	8 U	**20.0**	10 U
MW-30		7/11/2006	4 U	**4070**	**450**	2 U	8 U	**17.4**	2 U
MW-30		1/12/2007	**7**	**5780**	**490**	4 U	8 U	**16.8**	2 U
MW-30		7/18/2007	**5**	**3690**	**400**	4 U	8 U	**14.6**	2 U
MW-30		1/29/2008	**9**	**5240**	**480**	4 U	8 U	**13.2**	10 U
MW-30		6/18/2008	0.7 U	47 J	**116**	0.5 U	5 U	**16.8**	2 U
MW-30		1/22/2009	**5.6**	**4130**	**475**	0.5 U	5 U	**23.5**	2 U
MW-30		7/10/2009	**6.6**	**3630**	**346**	1 U	10 U	**12.9**	2 U
MW-30		1/28/2010	**7.2**	**4310**	**421**	1 U	10 U	**15.3**	2 U
MW-30		7/30/2010	**7**	**5250**	**406**	0.5 U	5 U	**15.7**	2 U
MW-30		1/21/2011	**8.5**	**5420**	**428**	1 U	10 U	**11.9**	2 U
MW-30		7/18/2011	**8.2**	**4940**	**417**	1 U	10 U	**12.3**	2 U
MW-30		1/24/2012	**7.2**	**5000**	**445**	1 U	10 U	**12.8**	2 U
MW-30		7/18/2012	1.7 J	**2340**	**691**	0.5 U	5 U	**13.5**	2 U
MW-30D		7/18/2012	1.8 J	**2380**	**688**	0.5 U	5 U	**13.0**	2 U
MW-30		1/22/2013	**6.7**	**4730**	**424**	1 U	10 U	**13.8**	2 U
MW-30D		1/22/2013	**6.8**	**4710**	**423**	1 U	10 U	**12.9**	2 U
MW-30		7/18/2013	**4.3**	**3530**	**386**	0.5 U	5 U	**14.7**	**2.4**
MW-30D		7/18/2013	**4.8**	**3820**	**394**	0.5 U	5 U	**14.9**	2 U
MW-30		1/31/2014	**8.2**	**6300**	**428**	0.5 U	5 U	**11.1**	2 U
MW-30		7/28/2014	1.2 J	**790**	**116**	0.5 U	5 U	**11.0**	2 U
MW-30		2/9/2015	b	**7110**	**447**	1 U	10 U	**10.7**	2 U
MW-30		7/29/2015	1 U	**320**	**25**	1 U	10 U	**9.8**	2 U
MW-31	NET	7/5/2001	6 U	**43672**	**1261.8**	5 U	8 U	**149.8**	1 U
MW-31		10/3/2001	6 U	**29424**	**866.99**	**3.9**	8 U	**150.0**	1 U
MW-31		1/22/2002	6 U	**39542**	**1206.2**	**5.83**	8 U	**137.5**	**6**
MW-31		4/10/2002	6 U	**38227**	**1178**	4 U	8 U	**136.9**	4 U
MW-31		7/11/2002	4 U	**41700**	**1190**	4 U	8 U	**132.0**	4 U
MW-31		10/10/2002	4 U	**42000**	**1190**	**4.4**	8 U	**150.0**	4 U

Table 1
Performance Monitoring
Ground Water Analytical Results
Everett Landfill

			Dissolved Metals					Conventional	SVOC
	Chemical Name		Arsenic	Iron	Manganese	Nickel	Zinc	Chloride	bis (2-Ethylhexyl) phthalate
	Unit		(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mg/L)	(ug/L)
Sample Location	Sample Type	C.L. / Date	25	23687	4040	10	76.6	230	10
MW-31D		10/10/2002	4 U	**41800**	**1180**	4 U	8 U	**151.0**	4 U
MW-31		1/16/2003	4 U	**38400**	**1150**	**4.5**	8 U	**13.5**	1 U
MW-31		4/29/2003	4 U	**38800**	**1130**	4 U	8 U	**131.0**	**320**
MW-31		10/13/2003	4 U	**41300**	**1230**	**4.4**	8 U	**147.0**	1 U
MW-31		4/8/2004	**3**	**35600**	**1220**	**4.7**	8 U	**120.0**	1.5 B
MW-31		7/14/2005	2 U	**33400**	**1150**	**3.9**	8 U	**127.0**	10 U
MW-31		2/3/2006	4 U	**31800**	**1150**	**2.9**	8 U	**130.0**	10 U
MW-31		7/12/2006	4 U	**36100**	**1160**	**3**	8 U	**132.0**	2 U
MW-31		1/12/2007	4 U	**34300**	**1170**	**4**	**16**	**134.0**	2 U
MW-31		7/17/2007	4 U	**37100**	**1180**	**7**	8 U	**149.0**	2 U
MW-31		1/29/2008	2 U	**32200**	**1160**	4 U	8 U	**138.0**	10 U
MW-31		6/18/2008	1.8 U	**39500**	**1160**	**3.2**	5 U	**132.0**	2 U
MW-31		1/22/2009	1.5 U	**32400**	**1080**	**3**	5 U	**149.7**	2 U
MW-31		7/10/2009	**1.3**	**40300**	**1170**	**3.2**	10 U	**148.0**	2 U
MW-31		1/28/2010	**1.3**	**31200**	**1130**	**3.2**	10 U	**147.0**	2 U
MW-31		7/30/2010	1.4 J	**38600**	**1150**	**3**	5 U	**143.0**	2 U
MW-31D		7/30/2010	1.3 J	**37600**	**1110**	**3.2**	5 U	**144.0**	2 U
MW-31		1/21/2011	1.4 J	**36500**	**1160**	3 J	10 U	**157.0**	2 U
MW-31D		1/21/2011	1.4 J	**36300**	**1160**	3 J	10 U	**161.0**	2 U
MW-31		7/18/2011	1.5 J	**39600**	**1210**	3.9 J	10 U	**132.0**	2 U
MW-31		1/24/2012	1.4 J	**34500**	**1190**	3.4 J	10 U	**143.0**	2 U
MW-31		7/18/2012	1.5 J	**39700**	**1150**	3.2	5 U	**138.0**	2 U
MW-31		1/22/2013	1.6 J	**42100**	**1210**	3.5 J	10 U	**134.0**	**2.7**
MW-31		7/19/2013	1.5 J	**39900**	**1180**	**3.1**	7 J	**149.0**	**3**
MW-31		1/31/2014	1.5 J	**44300**	**1220**	**3.3**	5 U	**139.0**	2 U
MW-31		7/28/2014	1.6 J	**48100**	**1170**	**3.3**	5 U	**150.0**	2 U
MW-31		2/9/2015	2.5 J	**70400**	**1180**	3.8 J	10 U	**144.0**	2 U
MW-31		7/29/2015	2 J	**59600**	**1220**	3.1 J	10 U	**148.0**	2 U
MW-31D		7/29/2015	2 J	**58800**	**1220**	3.7 J	10 U	**149.0**	2 U
MW-33	BG	7/5/2001	6 U	14 U	**54**	5 U	8 U	**20.4**	1 U
MW-33		10/2/2001	NS	NS	NS	NS	NS	NS	NS
MW-33		1/17/2002	6 U	14 U	**27**	**3.67**	**42.197**	**8.7**	4 U
MW-33		4/9/2002	6 U	14 U	**20**	**4.36**	**32.115**	**8.3**	4 U
MW-33		7/8/2002	4 U	14 U	**16**	4 U	**462.59**	**5.3**	4 U
MW-33		10/8/2002	4 U	14 U	**3**	4 U	**23**	**7.9**	4 U
MW-33		1/21/2003	4 U	14 U	**1**	4 U	**26**	**7.8**	**1.1**
MW-33		4/22/2003	4 U	14 U	1 U	4 U	**48**	**7.2**	1 U
MW-33		10/7/2003	4 U	14 U	1 U	4 U	**19**	**8.5**	1 U
MW-33		4/5/2004	2 U	14 U	1 U	**3**	**15**	**8.3**	1 U
MW-33		7/18/2005	2 U	14 U	1 U	**3**	**19**	**12.0**	10 U
MW-33		1/31/2006	4 U	14 U	1 U	**2.7**	**18**	**8.0**	10 U
MW-33		7/10/2006	4 U	14 U	1 U	**3**	**11**	**6.6**	2 U
MW-33		1/12/2007	4 U	14 U	b	**6**	**33**	**7.2**	2 U
MW-33		7/20/2007	4 U	14 U	1	4 U	**70**	**6.2**	2 U
MW-33		1/30/2008	2 U	14 U	1 U	4 U	**68**	**5.3**	10 U
MW-33		6/19/2008	0.6 U	30 U	2 U	**3.2** U	**29**	**5.1**	2 U
MW-35	BG	7/5/2001	6 U	14 U	**109**	**5** U	**8** U	**46.3**	1 U
MW-35		10/2/2001	6 U	14 U	**19**	**2.3**	**48.845**	**47.1**	1 U
MW-35		1/17/2002	6 U	14 U	**6**	**2.97**	8 U	**43.1**	4 U
MW-35		4/9/2002	6 U	**47**	**2**	4 U	8 U	42.5	4 U
MW-35		7/8/2002	4 U	14 U	1 U	4 U	8 U	42.5	4 U
MW-35		10/8/2002	4 U	14 U	1 U	4 U	8 U	43.8	4 U
MW-35		1/14/2003	4 U	14 U	1 U	4 U	8 U	48.6	1 U
MW-35		4/22/2003	4 U	14 U	1 U	4 U	8 U	44.2	1 U
MW-35		10/7/2003	4 U	**25**	1 U	4 U	8 U	45.0	1 U
MW-35		4/5/2004	2 U	14 U	1 U	2 U	8 U	45.0	1 U
MW-35		7/18/2005	2 U	14 U	1 U	2 U	8 U	44.0	10 U
MW-35		2/1/2006	4 U	14 U	1 U	2 U	8 U	42.0	10 U
MW-36	POC	7/6/2001	**14.7**	**12552**	**728**	5 U	8 U	**69.3**	1 U
MW-36		10/8/2001	**9**	**12067**	**543**	2 U	8 U	**59.1**	1 U
MW-36		1/22/2002	**8.46**	**15896**	**648**	2.85	8 U	**41.6**	4 U
MW-36		4/10/2002	6 U	**24681**	**663**	4 U	8 U	**96.5**	4 U
MW-36		7/11/2002	**10**	**15300**	**670**	4 U	8 U	**44.5**	4 U
MW-36		10/9/2002	**9**	**16500**	**687**	4 U	8 U	**44.0**	4 U
MW-36		1/15/2003	**8**	**17300**	**705**	4 U	8 U	**40.4**	1 U
MW-36		4/23/2003	**6**	**14700**	**693**	4 U	8 U	**41.0**	1 U
MW-36		10/9/2003	**7**	**16400**	**728**	4 U	8 U	**36.8**	2.9 B
MW-36		4/6/2004	**9**	**17100**	**778**	2 U	8 U	**52.5**	1 U
MW-36		7/15/2005	**8**	**18000**	**852**	2 U	8 U	**38.9**	10 U
MW-36		2/1/2006	4 U	**255**	**26.1**	2 U	**43**	**2.2**	10 U
MW-36		7/13/2006	**14**	**18200**	**850**	**2**	**9**	**35.5**	2 U
MW-36		1/12/2007	**9**	**17600**	**850**	4 U	8 U	**29.1**	2 U
MW-36		7/20/2007	**9**	**18300**	**870**	4 U	8 U	**34.4**	2 U
MW-36		1/25/2008	**6**	**11600**	**890**	4 U	**26**	**28.3**	10 U

Table 1
Performance Monitoring
Ground Water Analytical Results
Everett Landfill

			Dissolved Metals					Conventional	SVOC
	Chemical Name		Arsenic	Iron	Manganese	Nickel	Zinc	Chloride	bis (2-Ethylhexyl) phthalate
	Unit		(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mg/L)	(ug/L)
Sample Location	Sample Type	C.L. / Date	25	23687	4040	10	76.6	230	10
MW-36		6/19/2008	**5**	**15000**	**690**	1.1 U	9 U	**28.6**	2 U
MW-36		1/22/2009	1.7 U	**1000**	**390**	**2.7**	**29**	**8.8**	2 U
MW-36D		1/22/2009	0.9 U	**420**	**300**	**2.4**	**28**	**12.0**	2 U
MW-36		7/9/2009	**3.1**	**18100**	**742**	1 U	10 U	**29.8**	2 U
MW-36		1/29/2010	**3.8**	**6820**	**759**	**2.3**	36	**23.2**	2 U
MW-36		7/29/2010	**4.1**	**15800**	**685**	0.9 J	5 U	**40.3**	2 U
MW-36		1/20/2011	**4.5**	**16400**	**685**	1 U	10 U	**32.3**	2 U
MW-36		7/19/2011	**4.7**	**16100**	**698**	1.1 J	10 U	**32.6**	2 U
MW-36		1/23/2012	**5.6**	**16000**	**724**	1 U	10 U	**27.5**	2 U
MW-36D		1/23/2012	**5.6**	**16000**	**728**	1 U	10 U	**28.5**	2 U
MW-36		7/18/2012	**4.8**	**14800**	**677**	0.8 J	5 U	**29.4**	2 U
MW-36		1/22/2013	**4.4**	**14200**	**850**	2.5 J	22 J	**25.7**	2 U
MW-36		7/18/2013	**6.3**	**15800**	**745**	0.9 J	6 J	**26.0**	2 U
MW-36		1/31/2014	**5.6**	**14800**	**757**	0.8 J	5 U	**22.4**	2 U
MW-36		7/25/2014	**5.4**	**12300**	**650**	0.9 J	5 U	**33.0**	2 U
MW-36		2/10/2015	**6.6**	**18700**	**765**	1 U	10 U	**27.0**	2 U
MW-36		7/29/2015	1 U	40 U	1 U	1 U	10 U	**210.0**	2 U
MW-37	POC	7/6/2001	6 U	**22907**	**700**	5 U	8 U		1 U
MW-37		10/8/2001	6 U	**20327**	**599**	2 U	8 U	**87.0**	1 U
MW-37	no	1/22/2002	6 U	**22525**	**678**	**2.87**	**8.1**	**92.3**	4 U
MW-37	longer	4/10/2002	**9.4**	**16182**	**665**	4 U	8 U	**48.3**	4 U
MW-37	sampled	7/11/2002	4 U	**25400**	**688**	4 U	8 U	**92.3**	4 U
MW-37		10/9/2002	4 U	**25500**	**664**	4 U	**11**	**112.0**	4 U
MW-37		1/15/2003	4 U	**26800**	**694**	4 U	8 U	**114.0**	1 U
MW-37		4/23/2003	4 U	**23100**	**598**	4 U	8 U	**117.0**	1 U
MW-37		10/8/2003	4 U	**22700**	**651**	4 U	8 U	**190.0**	1 U
MW-37		4/6/2004	**3**	**25100**	**724**	2 U	8 U	**157.0**	1 U
MW-37		7/15/2005	2 U	**26500**	**807**	2 U	8 U	**248.0**	10 U
MW-37		2/1/2006	4 U	**29900**	**956**	2 U	8 U	**461.0**	10 U
MW-37		7/13/2006	4 U	**26500**	**840**	2 U	**61**	**257.0**	2 U
MW-37D		7/13/2006	4 U	**26800**	**840**	2 U	8 U	**298.0**	2 U
MW-37		7/29/2015	1.2 J	**2710**	**491**	1.3 J	10 U	**31.0**	2 U
MW-38	POC	7/6/2001	6 U	**3022**	**384**	5 U	8 U	**17.1**	1 U
MW-38		10/8/2001	6 U	**4066**	**287**	2 U	8 U	**20.6**	1 U
MW-38		1/23/2002	6 U	**3653**	**272**	2 U	**8.3**	**15.4**	4 U
MW-38		4/12/2002	6 U	**3665**	**263**	4 U	8 U	**15.4**	**5.4**
MW-38		7/11/2002	4 U	**3480**	**262**	4 U	8 U	**19.4**	4 U
MW-38		10/15/2002	4 U	**2290**	**234**	4 U	8 U	**19.2**	4 U
MW-38		1/15/2003	4 U	**4200**	**284**	4 U	8 U	**20.9**	1 U
MW-38		4/23/2003	4 U	**1560**	**219**	4 U	8 U	**16.2**	1 U
MW-38		10/8/2003	4 U	**4070**	**296**	4 U	8 U	**23.8**	1 U
MW-38		4/6/2004	2 U	**3690**	**279**	2 U	8 U	**22.1**	1 U
MW-38		7/15/2005	2 U	**4850**	**331**	2 U	8 U	**27.0**	10 U
MW-38		2/2/2006	4 U	**4130**	**289**	2 U	8 U	**24.0**	10 U
MW-38		7/10/2006	4 U	**4230**	**290**	2 U	8 U	**24.4**	2 U
MW-38		1/10/2007	4 U	**4120**	**300**	4 U	8 U	**26.4**	2 U
MW-38		7/20/2007	4 U	**1680**	**260**	4 U	8 U	**22.5**	2 U
MW-38		1/25/2008	2 U	**2470**	**230**	4 U	**31**	**16.5**	10 U
MW-38		6/19/2008	0.5 U	**6240**	**325**	0.5 U	5 U	**39.2**	2 U
MW-38		1/22/2009	0.5 U	**420**	**39**	1.2 U	**600**	**8.9**	2 U
MW-38		2/26/2009					**36**		
MW-38		7/9/2009	1 U	**3220**	**259**	1 U	**52**	**22.4**	2 U
MW-38		1/29/2010	1 U	**3300**	**267**	1 U	10 U	**16.2**	2 U
MW-38		7/29/2010	0.5 U	**3480**	**253**	0.5 U	5 U	**17.1**	2 U
MW-38		1/20/2011	1 U	**3610**	**265**	1 U	10 U	**13.9**	2 U
MW-38		7/18/2011	1 U	**4020**	**272**	1 U	10 U	**22.4**	2 U
MW-38		1/24/2012	1 U	**4000**	**301**	1 U	10 U	**17.1**	2 U
MW-38		7/18/2012	0.5 U	71 J	**107**	0.5 U	17 J	**16.2**	2 U
MW-38		1/22/2013	1 U	**3530**	**287**	1 U	10 U	**12.8**	2 U
MW-38		7/192013	0.5 U	**4190**	**288**	0.5 U	7 J	**30.4**	**2.1**
MW-38		2/6/2014	0.5 U	**3420**	**264**	0.5 U	5 U	**12.8**	2 U
MW-38		7/28/2014	0.5 U	**550**	**136**	0.5 U	7 J	**15.0**	2 U
MW-38		2/9/2015	1 U	**2720**	**236**	2 J	11 J	**10.5**	2 U
MW-38		7/29/2015	1 U	40 U	**213**	1 U	14 J	**11.1**	2 U
MW-39	POC	7/6/2001	6 U	**420**	**206**	5 U	30	**49.8**	1 U
MW-39		10/8/2001	6 U	**916**	**236**	2 U	8 U	**45.7**	1 U
MW-39		1/23/2002	6 U	**1365**	**398**	2 U	8 U	**7.9**	**6.5**
MW-39		4/12/2002	6 U	**1638**	**384**	4 U	8 U	**6.8**	**7.2**
MW-39		7/9/2002	**8**	**2520**	**430**	4 U	**12**	**6.2**	**4.8**
MW-39		10/15/2002	**4**	**2740**	**398**	4 U	8 U	**5.6**	4 U
MW-39		1/15/2003	4 U	**2870**	**353**	4 U	8 U	**6.5**	1 U
MW-39		4/24/2003	4 U	**2080**	**363**	4 U	8 U	**5.1**	**74**
MW-39		10/8/2003	4 U	**3690**	**366**	4 U	8 U	**5.6**	1 U
MW-39		4/6/2004	**4**	**3730**	**323**	2 U	8 U	**5.3**	1 U

Table 1
Performance Monitoring
Ground Water Analytical Results
Everett Landfill

			Dissolved Metals					Conventional	SVOC
	Chemical Name		Arsenic	Iron	Manganese	Nickel	Zinc	Chloride	bis (2-Ethylhexyl) phthalate
	Unit		(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mg/L)	(ug/L)
Sample Location	Sample Type	C.L. / Date	25	23687	4040	10	76.6	230	10
MW-39		7/15/2005	2 U	**18.2**	**300**	2 U	**16**	**6.0**	10 U
MW-39		2/2/2006	**6**	**3780**	**269**	2 U	8 U	**5.0**	10 U
MW-39		7/10/2006	4 U	**990**	**220**	2 U	**17**	**4.3**	2 U
MW-39		1/10/2007	4 U	**6980**	**280**	4 U	8 U	**5.4**	2 U
MW-39		7/19/2007	4 U	**5310**	**270**	4 U	8 U	**5.7**	2 U
MW-39D		7/19/2007	4 U	**5490**	**280**	4 U	8 U	**5.9**	2 U
MW-39		1/24/2008	**3**	**5560**	**260**	4 U	8 U	**5.8**	10 U
MW-39		6/18/2008	b	**4320**	**282**	0.5 U	5 U	**5.3**	2 U
MW-39		1/22/2009	1.5 U	**1950**	**252**	0.5 U	9 U	**6.1**	2 U
MW-39		7/9/2009	**1.1**	**1960**	**154**	1 U	10 U	**5.9**	2 U
MW-39		1/29/2010	**2.1**	**4930**	**239**	1 U	10 U	**6.3**	2 U
MW-39D		1/29/2010	**2.2**	**5030**	**240**	1 U	10 U	**6.2**	2 U
MW-39		7/29/2010	1.5 J	**2990**	**224**	0.5 U	5 U	**6.1**	2 U
MW-39		1/20/2011	2.5 J	**5750**	**249**	1 U	10 U	**6.3**	2 U
MW-39		7/18/2011	1.6 J	**3210**	**212**	1 U	10 U	**5.6**	2 U
MW-39		1/24/2012	2.6 J	**6150**	**246**	1 U	10 U	**5.4**	2 U
MW-39		7/18/2012	**2.1**	**5430**	**234**	0.5 U	5 U	**5.9**	2 U
MW-39		1/22/2013	NS	NS	NS	NS	NS	NS	NS
MW-39R		7/29/2015	2 J	130 J	229	2 J	10 U	5.0	8.1
MW-40		7/10/2006	4 U	**20100**	**450**	2 U	8 U		
MW-40		1/9/2007	4 U	**6060**	**940**	4 U	8 U	**225.0**	2 U
MW-40		7/19/2007	4 U	**4080**	**730**	4 U	8 U	**24.1**	2 U
MW-40		1/30/2008	2 U	**12200**	**1190**	4 U	8 U	**166.0**	10 U
MW-41		7/10/2006	4 U	**5360**	**970**	2 U	8 U		
MW-41		1/9/2007	4 U	**5780**	**1030**	4 U	8 U	**1610.0**	2 U
MW-41		7/19/2007	4 U	**4710**	**990**	4 U	8 U	**1880.0**	2 U
MW-41		1/30/2008	2 U	**1090**	**2710**	4 U	40 U	**6120.0**	10 U
MW-42		7/10/2006	**24**	**7290**	**430**	2 U	8 U	**8.4**	2 U
MW-42D		7/15/2006	**23**	**7280.0**	**420**	0 U	8 U	**4.0**	2 U
MW-42		1/9/2007	**22**	**7300.0**	**410**	4 U	8 U	**3.8**	2 U
MW-42		7/19/2007	**21**	**7040.0**	**390**	4 U	8 U	**4.5**	2 U
MW-42		1/30/2008	**22**	**7090.0**	**390**	4 U	8 U	**3.9**	10 U

NOTES:
Bold Analyte detected
Highlighted Analyte exceeds cleanup level
NET = network well for Performance and Confirmational Monitoring
BG = upgradient background well
POC = deep aquifer point of compliance monitoring well
C.L. = cleanup level
ug/L = micrograms per liter
mg/L = milligrams per liter
U = not detected at reporting limit shown
J = estimated concentration
NS = Not sampled
BKG = background (established after 3 year evaluation monitoring period)
B = likely laboratory contamination, analyte detected in field blank
D = duplicate sample collected

Table 2
Ground Water Elevations
Everett Landfill

Well	Type	Date	Water Depth	Water Elevation
MW-05	S, INT	7/2/2001	13.57	11.71
MW-05		10/1/2001	12.44	12.84
MW-05		1/16/2002	10.75	14.53
MW-05		4/8/2002	10.97	14.31
MW-05		7/3/2002	14.15	11.13
MW-05		10/7/2002	14.63	10.65
MW-05		1/16/2003	13.32	11.96
MW-05		4/21/2003	10.97	14.31
MW-05		10/6/2003	15.12	10.16
MW-05		4/2/2004	14.17	11.11
		Decommissioned 1/05		
MW-08	INT	7/2/2001	19.42	7.59
MW-08		10/1/2001	22.43	4.58
MW-08		1/16/2002	19.57	7.44
MW-08		4/8/2002	19.74	7.27
MW-08		7/3/2002	21.82	5.19
MW-08		10/7/2002	22.99	4.02
MW-08		1/16/2003	17.24	9.77
MW-08		4/21/2003	20.50	6.51
MW-08		10/6/2003	23.88	3.13
MW-08		4/2/2004	21.45	5.56
		Decommissioned 1/05		
MW-11R	NET	1/16/2002	6.25	6.47
MW-11R		4/8/2002	6.60	6.12
MW-11R		4/8/2002	6.60	6.12
MW-11R		7/3/2002	8.68	4.04
MW-11R		10/7/2002	10.56	2.16
MW-11R		1/16/2003	3.12	9.60
MW-11R		4/21/2003	5.77	6.95
MW-11R		10/6/2003	3.61	9.11
MW-11R		4/2/2004	8.62	4.10
MW-11R		7/13/2005	8.10	4.62
MW-11R		2/7/2006	4.34	8.38
MW-11R		7/10/2006	7.84	4.88
MW-11R		1/8/2007	2.89	9.83
MW-11R		7/16/2007	11.76	0.96
MW-11R		1/23/2008	4.48	8.24
MW-11R		6/17/2008	9.45	3.27
MW-11R		1/13/2009	5.53	7.19
MW-11R		7/8/2009	NR	----
MW-11R		1/26/2010	4.88	7.84
MW-11R		7/28/2010	7.05	5.67
MW-11R		1/21/2011	4.73	7.99
MW-11R		7/15/2011	9.27	3.45
MW-11R		1/23/2012	NR	----
MW-11R		7/19/2012	14.65	0.42
MW-11R		1/23/2013	11.52	2.68
MW-11R		7/18/2013	11.00	3.20
MW-11R		1/31/2014	9.08	3.20
MW-11R		7/25/2014	16.82	-2.62
MW-11R		2/9/2015	11.63	2.57
MW-11R		7/28/2015	11.59	2.61
MW-14	S, INT	7/2/2001	17.85	8.40
MW-14		10/1/2001	20.38	5.87
MW-14		1/16/2002	18.20	8.05
MW-14		4/8/2002	18.45	7.80
MW-14		7/3/2002	20.36	5.89
MW-14		10/7/2002	20.35	5.90
MW-14		1/16/2003	19.52	6.73
MW-14		4/21/2003	18.16	8.09

Table 2
Ground Water Elevations
Everett Landfill

Well	Type	Date	Water Depth	Water Elevation
MW-14		10/6/2003	20.39	5.86
MW-14		4/2/2004	20.15	6.10
		Decommissioned 1/05		
MW-17	S, INT	7/2/2001	11.32	13.89
MW-17		10/1/2001	2.91	22.30
MW-17		1/16/2002	NR	----
MW-17		4/8/2002	NR	----
MW-17		7/3/2002	NR	----
MW-17		10/7/2002	NR	----
MW-17		1/16/2003	NR	----
MW-17		4/21/2003	13.91	12.44
MW-17		10/6/2003	17.40	7.76
MW-17		4/2/2004	16.95	9.40
		Decommissioned 1/05		
MW-21	NET	7/2/2001	17.19	25.33
MW-21		10/1/2001	17.23	24.96
MW-21		1/16/2002	16.51	25.68
MW-21		4/8/2002	16.39	25.80
MW-21		7/3/2002	16.72	25.47
MW-21		10/7/2002	17.19	25.00
MW-21		1/16/2003	17.10	25.09
MW-21		4/21/2003	16.93	25.26
MW-21		10/6/2003	17.78	24.41
MW-21		4/2/2004	17.52	24.67
MW-21		7/13/2005	17.79	24.40
MW-21		2/7/2006	17.00	25.19
		Abandoned, 2006		
MW-21R	NET	1/13/2009	13.78	25.58
MW-21R		7/8/2009	14.26	25.10
MW-21R		1/26/2010	13.94	25.42
MW-21R		7/28/2010	13.06	26.30
MW-21R		1/21/2011	13.08	26.28
MW-21R		7/15/2011	12.66	26.70
MW-21R		1/23/2012	13.05	26.31
MW-21R		7/19/2012	12.55	26.81
MW-21R		1/23/2013	11.78	27.58
MW-21R		7/18/2013	12.19	27.17
MW-21R		2/1/2014	12.32	27.04
MW-21R		7/25/2014	12.36	27.00
MW-21R		2/10/2015	11.95	27.41
MW-21R		7/30/2015	12.61	26.75
MW-22	S, NET	7/2/2001	10.98	16.79
MW-22		10/1/2001	10.93	16.84
MW-22		1/16/2002	11.04	16.73
MW-22		4/8/2002	10.94	16.83
MW-22		7/3/2002	11.01	16.76
MW-22		10/7/2002	11.05	16.72
MW-22		1/16/2003	10.99	16.78
MW-22		4/21/2003	10.94	16.83
MW-22		10/6/2003	11.01	16.76
MW-22		4/2/2004	10.95	16.82
MW-22		7/13/2005	10.99	16.78
MW-22		2/7/2006	10.87	16.90
MW-22		7/10/2006	10.84	16.93
MW-22		1/8/2007	10.79	16.98
MW-22		7/16/2007	8.43	19.34
MW-22		1/23/2008	10.68	17.09
MW-22		6/17/2008	10.78	16.99
MW-22		1/13/2009	10.63	17.14
MW-22		7/8/2009	NR	----

Table 2
Ground Water Elevations
Everett Landfill

Well	Type	Date	Water Depth	Water Elevation
MW-22		1/26/2010	NR	----
MW-22		7/28/2010	NR	----
MW-22		1/21/2011	NR	----
MW-22		7/15/2011	10.50	17.27
MW-22		1/23/2012	13.13	14.64
MW-22		7/19/2012	NR	----
MW-22		1/23/2013	15.56	12.21
MW-22		7/18/2013	15.78	11.99
MW-22		2/1/2014	15.81	11.96
MW-22		7/28/2014	21.65	6.12
MW-22		2/10/2015	15.43	12.34
MW-23	S, INT	7/2/2001	19.44	12.05
MW-23		10/1/2001	19.70	11.79
MW-23		1/16/2002	18.71	12.78
MW-23		4/8/2002	18.69	12.80
MW-23		7/3/2002	19.58	11.91
MW-23		10/7/2002	19.74	11.75
MW-23		1/16/2003	18.90	12.59
MW-23		4/21/2003	18.42	13.07
MW-23		10/6/2003	19.72	11.77
MW-23		4/2/2004	18.93	12.56
		Decommissioned 1/05		
MW-24	S, NET	7/2/2001	8.14	9.76
MW-24		10/1/2001	9.52	8.38
MW-24		1/16/2002	6.66	11.24
MW-24		4/8/2002	7.33	10.57
MW-24		7/3/2002	8.68	9.22
MW-24		10/7/2002	16.73	1.17
MW-24		1/16/2003	7.29	10.61
MW-24		4/21/2003	6.95	10.95
MW-24		10/6/2003	11.14	6.76
MW-24		4/2/2004	7.61	10.29
MW-24		7/13/2005	8.68	9.22
MW-24		2/7/2006	6.97	10.93
MW-24		7/10/2006	8.26	9.64
MW-24		1/8/2007	7.71	10.19
MW-24		7/16/2007	6.66	11.24
MW-24		1/23/2008	7.36	10.54
MW-24		6/17/2008	7.57	10.33
MW-24		1/13/2009	7.04	10.86
MW-24		7/8/2009	8.65	9.25
MW-24		1/26/2010	6.90	11.00
MW-24		7/28/2010	8.26	9.64
MW-24		1/21/2011	5.90	12.00
MW-24		7/15/2011	7.82	10.08
MW-24		1/24/2012	7.50	10.40
MW-24		7/19/2012	7.66	10.24
MW-24		1/23/2013	7.35	10.55
MW-24		7/18/2013	4.12	New TOC
MW-24		1/31/2014	2.58	New TOC
MW-24		7/28/2014	3.15	New TOC
MW-24		2/9/2015	2.55	New TOC
MW-25	S, NET	7/2/2001	8.46	7.92
MW-25		10/1/2001	8.65	7.73
MW-25		1/16/2002	6.76	9.62
MW-25		4/8/2002	7.57	8.81
MW-25		7/3/2002	8.22	8.16
MW-25		10/7/2002	9.05	7.33
MW-25		1/16/2003	6.98	9.40
MW-25		4/21/2003	7.00	9.38

Table 2
Ground Water Elevations
Everett Landfill

Well	Type	Date	Water Depth	Water Elevation
MW-25		10/6/2003	9.17	7.21
MW-25		4/2/2004	7.94	8.44
MW-25		7/13/2005	8.19	8.19
MW-25		2/7/2006	6.78	9.60
MW-25		7/10/2006	8.13	8.25
MW-25		1/8/2007	5.78	10.60
MW-25		7/16/2007	7.02	9.36
MW-25		1/23/2008	6.30	10.08
MW-25		6/17/2008	6.66	9.72
MW-25		1/13/2009	6.27	10.11
MW-25		7/8/2009	8.06	8.32
MW-25		1/26/2010	5.86	10.52
MW-25		7/28/2010	7.99	8.39
MW-25		1/21/2011	4.90	11.48
MW-25		7/15/2011	7.54	8.84
MW-25		1/24/2012	5.33	11.05
MW-25		7/19/2012	6.90	9.48
MW-25		1/23/2013	6.20	10.18
MW-25		7/18/2013	3.70	NEW TOC
MW-25		1/31/2014	1.32	NEW TOC
MW-25		7/28/2014	3.54	NEW TOC
MW-25		2/9/2015	2.02	NEW TOC
MW-26	S, NET	7/2/2001	10.31	6.13
MW-26		10/1/2001	10.20	6.24
MW-26		1/16/2002	6.11	10.33
MW-26		4/8/2002	6.35	10.09
MW-26		7/3/2002	10.29	6.15
MW-26		10/7/2002	10.43	6.01
MW-26		1/16/2003	6.55	9.89
MW-26		4/21/2003	6.42	10.02
MW-26		10/6/2003	10.47	5.97
MW-26		4/2/2004	9.81	6.63
MW-26		7/13/2005	10.07	6.37
MW-26		2/7/2006	9.27	7.17
MW-26		7/10/2006	11.02	5.42
MW-26		1/8/2007	7.94	8.50
MW-26		7/16/2007	9.16	7.28
MW-26		1/23/2008	9.60	6.84
MW-26		6/17/2008	9.85	6.59
MW-26		1/13/2009	8.43	8.01
MW-26		7/8/2009	9.64	6.80
MW-26		1/26/2010	8.85	7.59
MW-26		7/28/2010	9.05	7.39
MW-26		1/21/2011	4.10	12.34
MW-26		7/15/2011	8.08	8.36
MW-26		1/23/2012	5.52	10.92
MW-26		1/23/2013	4.90	11.54
MW-26		7/18/2013	4.17	NEW TOC
MW-27	S, NET	7/2/2001	8.30	8.11
MW-27		10/1/2001	7.77	8.64
MW-27		1/17/2002	9.20	7.21
MW-27		4/8/2002	6.62	9.79
MW-27		7/3/2002	6.81	9.60
MW-27		10/7/2002	6.00	10.41
MW-27		1/16/2003	6.46	9.95
MW-27		4/21/2003	6.75	9.66
MW-27		10/6/2003	7.87	8.54
MW-27		4/2/2004	5.49	10.92
MW-27		7/13/2005	5.94	10.47
MW-27		2/7/2006	6.90	9.51

Table 2
Ground Water Elevations
Everett Landfill

Well	Type	Date	Water Depth	Water Elevation
MW-27		7/10/2006	6.96	9.45
MW-27		1/8/2007	6.09	10.32
MW-27		7/16/2007	6.02	10.39
MW-27		1/23/2008	6.84	9.57
MW-27		6/17/2008	7.03	9.38
MW-27		Decommissioned 11/08		
MW-28	NET	7/2/2001	9.98	6.65
MW-28		10/1/2001	10.35	6.28
MW-28		1/17/2002	8.67	7.96
MW-28		4/8/2002	9.01	7.62
MW-28		7/3/2002	10.52	6.11
MW-28		10/7/2002	11.72	4.91
MW-28		1/16/2003	6.46	10.17
MW-28		4/21/2003	9.45	7.18
MW-28		10/6/2003	9.62	7.01
MW-28		4/2/2004	10.15	6.48
MW-28		7/13/2005	10.25	6.38
MW-28		2/7/2006	7.61	9.02
MW-28		7/10/2006	12.71	3.92
MW-28		1/8/2007	6.78	9.85
MW-28		7/16/2007	10.51	6.12
MW-28		1/23/2008	9.12	7.51
MW-28		6/17/2008	10.00	6.63
		Decommissioned 11/08		
MW-29	NET	7/2/2001	8.44	7.52
MW-29		10/1/2001	8.75	7.21
MW-29		1/16/2002	7.36	8.6
MW-29		4/8/2002	7.75	8.21
MW-29		7/3/2002	9.06	6.90
MW-29		10/7/2002	10.21	5.75
MW-29		1/16/2003	5.92	10.04
MW-29		4/21/2003	7.05	8.91
MW-29		10/6/2003	7.60	8.36
MW-29		4/2/2004	8.60	7.36
MW-29		7/13/2005	8.56	7.40
MW-29		2/7/2006	5.94	10.02
MW-29		7/10/2006	11.27	4.69
MW-29		1/8/2007	5.08	10.88
MW-29		7/16/2007	8.54	7.42
MW-29		1/23/2008	7.41	8.55
MW-29		6/17/2008	8.50	7.46
MW-29		1/13/2009	6.03	9.93
MW-29		7/8/2009	9.64	6.32
MW-29		1/26/2010	5.12	10.84
MW-29		7/28/2010	10.05	5.91
MW-29		1/21/2011	3.84	12.12
MW-29		7/15/2011	5.63	10.33
MW-29		1/23/2012	NR	----
		Well damaged		
MW-29R		7/28/2015	7.64	No TOC Survey
MW-30	NET	7/2/2001	7.95	7.95
MW-30		10/1/2001	13.29	2.61
MW-30		1/16/2002	9.06	6.84
MW-30		4/8/2002	9.09	6.81
MW-30		7/3/2002	11.70	4.20
MW-30		10/7/2002	12.87	3.03
MW-30		1/16/2003	5.92	9.98
MW-30		4/21/2003	11.07	4.83
MW-30		10/6/2003	6.08	9.82

Table 2
Ground Water Elevations
Everett Landfill

Well	Type	Date	Water Depth	Water Elevation
MW-30		4/2/2004	11.38	4.52
MW-30		7/13/2005	11.51	4.39
MW-30		2/7/2006	7.25	8.65
MW-30		7/10/2006	15.37	0.53
MW-30		1/8/2007	6.37	9.53
MW-30		7/16/2007	13.18	2.72
MW-30		1/23/2008	7.21	8.69
MW-30		6/17/2008	13.11	2.79
MW-30		1/13/2009	8.40	7.50
MW-30		7/8/2009	NR	----
MW-30		1/26/2010	8.37	7.53
MW-30		7/28/2010	10.17	5.73
MW-30		1/21/2011	6.12	9.78
MW-30		7/15/2011	11.28	4.62
MW-30		1/24/2012	8.00	7.90
MW-30		7/19/2012	13.90	2.00
MW-30		1/23/2013	8.85	7.05
MW-30		7/18/2013	6.65	NEW TOC
MW-30		1/31/2014	5.22	NEW TOC
MW-30		7/28/2014	11.87	NEW TOC
MW-30		2/9/2015	4.66	NEW TOC
MW-30		7/28/2015	13.31	NEW TOC
MW-31	NET	7/2/2001	11.45	6.96
MW-31		10/1/2001	15.77	2.64
MW-31		1/16/2002	12.32	6.09
MW-31		4/8/2002	12.36	6.05
MW-31		7/3/2002	15.00	3.41
MW-31		10/7/2002	16.61	1.80
MW-31		1/16/2003	8.61	9.80
MW-31		4/21/2003	13.16	5.25
MW-31		10/6/2003	9.08	9.33
MW-31		4/2/2004	14.63	3.78
MW-31		7/13/2005	14.20	4.21
MW-31		2/7/2006	10.20	8.21
MW-31		7/10/2006	18.57	-0.16
MW-31		1/8/2007	9.06	9.35
MW-31		7/16/2007	18.76	-0.35
MW-31		1/23/2008	12.58	5.83
MW-31		6/17/2008	16.24	2.17
MW-31		1/13/2009	11.34	7.07
MW-31		7/8/2009	18.93	-0.52
MW-31		1/26/2010	10.97	7.44
MW-31		7/28/2010	13.10	5.31
MW-31		1/21/2011	9.69	8.72
MW-31		7/15/2011	14.31	4.10
MW-31		1/24/2012	11.95	6.46
MW-31		7/19/2012	17.55	0.86
MW-31		1/23/2013	12.05	6.36
MW-31		7/18/2013	14.72	NEW TOC
MW-31		1/31/2014	9.35	NEW TOC
MW-31		7/28/2014	11.86	NEW TOC
MW-31		2/9/2015	7.38	NEW TOC
MW-31		7/28/2015	14.47	NEW TOC
MW-32	INT	7/2/2001	4.62	17.55
MW-32		10/1/2001	5.55	16.62
MW-32		1/17/2002	2.69	19.48
MW-32		4/8/2002	2.80	19.37
MW-32		7/3/2002	4.54	17.63
MW-32		10/7/2002	4.85	17.32
MW-32		1/16/2003	3.72	18.45

Table 2
Ground Water Elevations
Everett Landfill

Well	Type	Date	Water Depth	Water Elevation
MW-32		4/21/2003	2.54	19.63
MW-32		10/6/2003	4.52	17.65
MW-32		4/2/2004	5.10	17.07
		Decommissioned 1/05		
MW-33	BG	7/2/2001	48.54	25.76
MW-33		10/1/2001	NR	NR
MW-33		1/16/2002	48.34	25.96
MW-33		4/8/2002	48.16	26.14
MW-33		7/3/2002	48.43	25.87
MW-33		10/7/2002	NR	----
MW-33		1/17/2003	49.06	25.24
MW-33		4/21/2003	48.67	25.63
MW-33		10/6/2003	47.20	27.10
MW-33		4/2/2004	49.25	25.05
MW-33		7/13/2005	NR	----
MW-33		2/7/2006	NR	----
MW-33		7/10/2006	NR	----
MW-33		1/8/2007	NR	----
MW-33		7/16/2007	NR	----
MW-33		1/23/2008	47.97	26.33
MW-33		6/17/2008	NR	----
MW-33		1/13/2009	48.15	26.15
MW-33		7/8/2009	NR	----
MW-33		1/26/2010	48.37	25.93
MW-33		7/28/2010	48.02	26.28
MW-33		1/21/2011	NR	----
MW-33		7/15/2011	46.92	27.38
MW-33		1/23/2012	47.56	26.74
MW-33		7/19/2012	46.84	27.46
MW-33		1/23/2013	46.05	28.25
MW-33		7/18/2013	46.50	27.80
MW-33		2/1/2014	NR	----
MW-33		7/25/2014	46.60	27.70
MW-33		2/10/2015	46.33	27.97
MW-34	S, BG	7/2/2001	17.18	57.19
MW-34		10/1/2001	17.59	56.78
MW-34		1/16/2002	16.78	57.59
MW-34		4/8/2002	16.46	57.91
MW-34		7/3/2002	16.74	57.63
MW-34		10/7/2002	17.17	57.20
MW-34		1/16/2003	17.04	57.33
MW-34		4/21/2003	16.92	57.45
MW-34		10/6/2003	17.76	56.61
MW-34		4/2/2004	16.97	57.40
MW-34		7/13/2005	17.31	57.06
MW-34		2/7/2006	17.04	57.33
MW-34		7/10/2006	17.28	57.09
MW-34		1/8/2007	16.84	57.53
MW-34		7/16/2007	16.63	57.74
MW-34		1/23/2008	16.42	57.95
MW-34		6/17/2008	NR	----
MW-34		1/13/2009	16.50	57.87
MW-34		7/8/2009	NR	----
MW-34		1/26/2010	16.82	57.48
MW-34		7/28/2010	16.71	57.59
MW-34		1/21/2011	NR	----
MW-34		7/15/2011	16.15	58.15
MW-34		1/23/2012	16.61	57.69
MW-34		7/19/2012	16.24	58.06
MW-34		1/23/2013	15.85	58.45

Table 2
Ground Water Elevations
Everett Landfill

Well	Type	Date	Water Depth	Water Elevation
MW-34		7/18/2013	16.15	58.15
MW-34		2/1/2014	16.45	57.85
MW-34		7/25/2014	16.60	57.70
MW-34		2/10/2015	16.17	58.13
MW-35	BG	7/2/2001	48.43	24.82
MW-35		10/1/2001	48.89	24.36
MW-35		1/16/2002	48.32	24.93
MW-35		4/8/2002	48.11	25.14
MW-35		7/3/2002	48.46	24.79
MW-35		10/7/2002	48.85	24.40
MW-35		1/16/2003	48.89	24.36
MW-35		4/21/2003	48.77	24.48
MW-35		10/6/2003	49.38	23.87
MW-35		4/2/2004	49.24	24.01
MW-35		7/13/2005	49.53	23.72
MW-35		2/7/2006	49.06	24.19
MW-35		7/10/2006	49.02	24.23
		Abandoned, 2006		
MW-36	POC	7/2/2001	9.79	1.13
MW-36		10/1/2001	9.98	0.94
MW-36		1/16/2002	5.10	5.82
MW-36		4/8/2002	4.92	6.00
MW-36		7/3/2002	6.95	3.97
MW-36		10/7/2002	9.11	1.81
MW-36		1/16/2003	1.78	9.14
MW-36		4/21/2003	8.10	2.82
MW-36		10/6/2003	9.97	0.95
MW-36		4/2/2004	7.46	3.46
MW-36		7/13/2005	5.89	5.03
MW-36		2/7/2006	2.68	8.24
MW-36		7/10/2006	12.40	-1.48
MW-36		1/8/2007	1.07	9.85
MW-36		7/16/2007	6.82	4.10
MW-36		1/23/2008	3.53	7.39
MW-36		6/17/2008	7.98	2.94
MW-36		1/13/2009	3.34	7.58
MW-36		7/8/2009	11.44	-0.52
MW-36		1/26/2010	3.14	7.78
MW-36		7/28/2010	5.65	5.27
MW-36		1/21/2011	3.75	7.17
MW-36		7/15/2011	7.86	3.06
MW-36		1/23/2012	4.26	6.66
MW-36		7/19/2012	7.33	3.59
MW-36		1/23/2013	4.62	6.30
MW-36		7/18/2013	3.45	7.47
MW-36		1/31/2014	4.03	6.89
MW-36		7/28/2014	8.00	2.92
MW-36		2/10/2015	0.70	10.22
MW-36		7/29/2015	5.83	5.09
MW-37	POC	7/2/2001	12.41	1.87
MW-37		10/1/2001	13.77	0.51
MW-37		1/16/2002	8.30	5.98
MW-37		4/8/2002	7.99	6.29
MW-37		7/3/2002	10.12	4.16
MW-37		10/7/2002	12.55	1.73
MW-37		1/16/2003	5.27	9.01
MW-37		4/21/2003	12.10	2.18
MW-37		10/6/2003	12.89	1.39
MW-37		4/2/2004	10.82	3.46

Table 2
Ground Water Elevations
Everett Landfill

Well	Type	Date	Water Depth	Water Elevation
MW-37		7/13/2005	9.02	5.26
MW-37		2/7/2006	5.79	8.49
MW-37		7/10/2006	16.15	-1.87
MW-37		1/8/2007	4.50	9.78
MW-37		7/16/2007	10.32	3.96
MW-37		1/23/2008	5.90	8.38
MW-37		6/17/2008	12.38	1.90
MW-37		1/13/2009	5.55	8.73
MW-37		7/8/2009	15.27	-0.99
MW-37		1/26/2010	6.77	7.51
MW-37		7/28/2010	8.82	5.46
MW-37		1/21/2011	7.13	7.15
MW-37		7/15/2011	11.94	2.34
MW-37		1/23/2012	NR	----
MW-37		7/29/2015	2.56	11.72
MW-38	POC	7/2/2001	10.16	3.46
MW-38		10/1/2001	12.49	1.13
MW-38		1/16/2002	7.91	5.71
MW-38		4/8/2002	7.18	6.44
MW-38		7/3/2002	9.71	3.91
MW-38		10/7/2002	9.34	4.28
MW-38		1/16/2003	5.00	8.62
MW-38		4/21/2003	11.25	2.37
MW-38		10/6/2003	5.55	8.07
MW-38		4/2/2004	10.19	3.43
MW-38		7/13/2005	8.47	5.15
MW-38		2/7/2006	5.59	8.03
MW-38		7/10/2006	15.25	-1.63
MW-38		1/8/2007	4.17	9.45
MW-38		7/16/2007	9.12	4.50
MW-38		1/23/2008	6.75	6.87
MW-38		6/17/2008	12.82	0.80
MW-38		1/13/2009	8.06	5.56
MW-38		7/8/2009	14.34	-0.72
MW-38		1/26/2010	6.27	7.35
MW-38		7/28/2010	8.43	5.19
MW-38		1/21/2011	6.53	7.09
MW-38		7/15/2011	10.85	2.77
MW-38		1/24/2012	5.53	8.09
MW-38		7/19/2012	10.58	3.04
MW-38		1/23/2013	6.85	6.77
MW-38		7/18/2013	13.00	0.62
MW-38		1/31/2014	9.33	4.29
MW-38		7/28/2014	13.86	-0.24
MW-38		2/9/2015	2.82	10.80
MW-38		7/28/2015	13.26	0.36
MW-39	POC	7/2/2001	6.91	6.99
MW-39		10/1/2001	9.02	4.88
MW-39		1/16/2002	6.69	7.21
MW-39		4/8/2002	7.48	6.42
MW-39		7/3/2002	8.72	5.18
MW-39		10/7/2002	9.90	4.00
MW-39		1/16/2003	6.31	7.59
MW-39		4/21/2003	7.85	6.05
MW-39		10/6/2003	10.44	3.46
MW-39		4/2/2004	8.34	5.56
MW-39		7/13/2005	8.46	5.44
MW-39		2/7/2006	5.91	7.99
MW-39		7/10/2006	9.67	4.23
MW-39		1/8/2007	5.02	8.88

Table 2
Ground Water Elevations
Everett Landfill

Well	Type	Date	Water Depth	Water Elevation
MW-39		7/16/2007	7.49	6.41
MW-39		1/23/2008	7.47	6.43
MW-39		6/17/2008	8.63	5.27
MW-39		1/13/2009	6.08	7.82
MW-39		7/8/2009	10.35	3.55
MW-39		1/26/2010	5.13	8.77
MW-39		7/28/2010	8.05	5.85
MW-39		1/21/2011	5.00	8.90
MW-39		7/15/2011	7.43	6.47
MW-39		1/24/2012	5.23	8.67
MW-39		7/19/2012	10.28	3.62
MW-39		1/23/2013	6.85	7.05
MW-39		7/18/2013	NR	--
MW-39		1/31/2014	NR	--
MW-39		7/25/2014	NR	--
MW-39R		7/28/2015	12.68	No TOC Survey
MW-40	BGM	7/19/2005	14.86	-0.65
MW-40		2/7/2006	7.75	6.46
MW-40		7/10/2006	9.84	4.37
MW-40		1/8/2007	6.38	7.83
MW-40		7/16/2007	15.23	-1.02
MW-40		1/23/2008	8.01	6.20
		Decommissioned 2/08		
MW-41	BGM	7/19/2005	16.40	-2.01
MW-41		2/7/2006	7.98	6.42
MW-41		7/10/2006	9.68	4.72
MW-41		1/8/2007	6.83	7.57
MW-41		7/16/2007	14.71	-0.32
		Decommissioned 2/08		
MW-42	BGM	7/19/2005	1.25	16.04
MW-42		2/7/2006	1.84	15.45
MW-42		7/10/2006	3.80	13.49
MW-42		1/8/2007	1.52	15.77
MW-42		7/16/2007	3.24	14.49
MW-42		1/23/2008	1.40	15.89
MW-42		6/17/2008	1.72	15.57
		Decommissioned 2/08		

NOTES:

NR = no reading, well decommissioned, damaged, or not located

S = shallow well (all others are in deep aquifer)

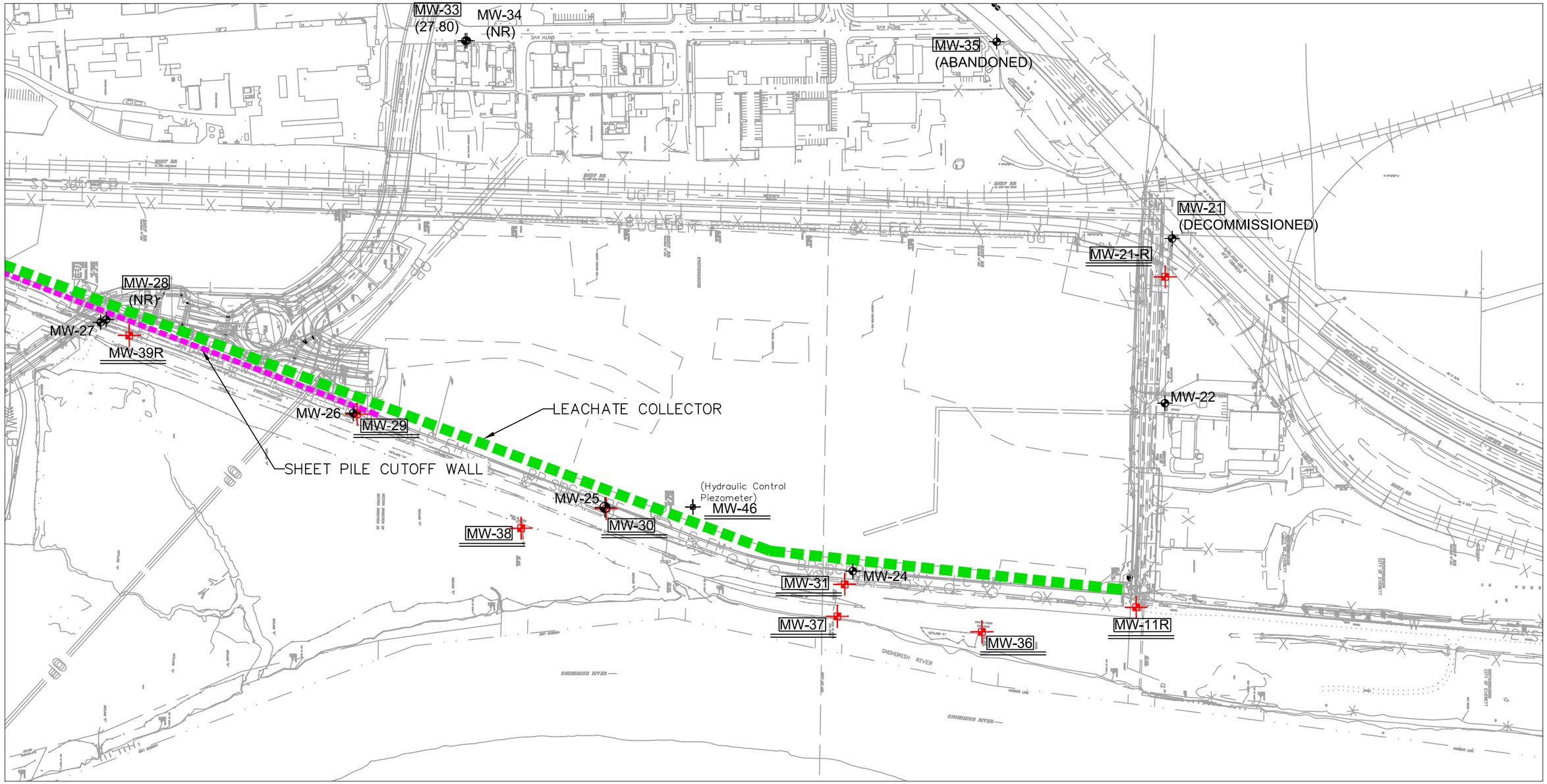
INT = Interior, well located in interior of site; will be abandoned after Evaluation Monitoring

NET = Network well for Performance and Confirmational Monitoring

BG =Upgradient background well

BGM= background metals well

POC = deep aquifer point of compliance monitoring well



LEGEND

MW–12 ⌖ SHALLOW MONITORING WELLS

[MW–12] ⌖ DEEP MONITORING WELLS

MW–12 ⌖ WELLS TO BE MONITORED

0’ 100’ 200’ 300’ 600’

SCALE: 1”=300’

BASE MAP PROVIDED BY:

HWA GEOSCIENCES INC.

EVERETT LANDFILL
EVERETT, WASHINGTON

GROUNDWATER MONITORING WELLS

DRAWN BY	EFK
CHECK BY	AG
DATE:	01.11.16
FIGURE #	1
PROJECT #	98165-660

S:\1998 PROJECTS\98165 EVERETT LANDFILL\CAD\NBB GW.DWG <FIG 1 GW Monitoring Well 1-11-16> Plotted: 1/13/2016 3:38 PM

APPENDIX A

LABORATORY REPORTS AND QA/QC REPORTS

CITY OF EVERETT
ENVIRONMENTAL LABORATORY

PROJECT #

00043832

Client:

Program: Contract - HWA - Landfill

Contact:

Date Received: 02/10/15

Data Release: CK

Date Reported: 3/19/2015

Department	Analysis	Units	DL	Method	PQL	BG80885 MW-38 2/8/2015	BG80886 MW-30 2/9/2015	BG80887 MW-31 2/9/2015	BG80888 MW-11R 2/9/2015
METALS	Dis. Arsenic	µg/L	1.0	200.8	4.0	<1.0	9.4	2.5 J	<1.0
	Dis. Iron	µg/L	40	200.8	160	2720	7110	70400	5630
	Dis. Manganese	µg/L	1.0	200.8	4.0	236	447	1180	433
	Dis. Nickel	µg/L	1.0	200.8	4.0	2.0 J	<1.0	3.8 J	<1.0
	Dis. Zinc	µg/L	10	200.8	40	11 J	<10	<10	<10
NUTRIENTS	Chloride	mg/L	0.2	4500-CL-E	0.8	10.5	10.7	144	3.1

Department	Analysis	Units	DL	Method	PQL	BG80889 DUP 1 2/10/2015	BG80890 MW-36 2/10/2015	BG80891 MW-21R 2/10/2015
METALS	Dis. Arsenic	µg/L	1.0	200.8	4.0	24.2	6.6	21.0
	Dis. Iron	µg/L	40	200.8	160	14000	18700	13700
	Dis. Manganese	µg/L	1.0	200.8	4.0	1730	765	1720
	Dis. Nickel	µg/L	1.0	200.8	4.0	<1.0	<1.0	<1.0
	Dis. Zinc	µg/L	10	200.8	40	<10	<10	<10
NUTRIENTS	Chloride	mg/L	0.2	4500-CL-E	0.8	10.5	27.0	10.2

DATA REPORTING QUALIFIERS

DL = Detection Limit
PQL = Practical Quantitation Limit (= 4xDL)
J = Analyte concentration less than PQL
SA = See Attached
ND = No Data

When Dissolved Metals > Total Metals note possible filtering process contamination
P/A (used for Total Coliform results) P= Coliforms present, A = Coliforms absent
Y/N (used for E. Coli Results) Y= E. Coli present, N=E. Coli absent
E = Estimated Value. Count from plates not within ideal range.
R = Sample was re-analyzed after holding time.

448 43832

HWA GeoSciences Inc.

21312 30th Drive SE, Suite 110, Bothell, Washington 98021-7010
Tel 425.774.0106 Fax 425.774.2714 www.hwageo.com

Chain of Custody and Laboratory Anaylsis Request

DATE: 2/10/15
PAGE: 1 of 1

PROJECT NAME: Everett Landfill #: 98165-660
SAMPLERS NAME: N. Vielsen PHONE: 206-450-0552
SAMPLERS SIGNATURE: Norm Vielsen DATE: 2/10/15
HWA CONTACT: Arnie Sager PHONE: 425 774-0106

ANALYSIS REQUESTED

TURNAROUND TIME
☐ DAYS
☒ STANDARD

HWA SAMPLE ID	DATE	TIME	MATRIX	LAB ID	# OF BOTTLE	Dissolved As, Fe, Mn	Ni, Zn	Chloride	EDD	REMARKS
MW-34	2/9/15	11:15	W	BG 80885						All Samples Field Filtered
MW-30	2/9/15	14:00	W	BG 80886						
MW-31	2/9/15	15:27	W	BG 80887						
MW-11R	2/9/15	16:46	W	BG 80888						
~~Dup~~ Dup 1	2/10/15	8:30	W	BG 80889						
MW-36	2/10/15	8:50	W	BG 80890						
MW-21R	2/10/15	10:26	W	BG 80891						

PRINT NAME	SIGNATURE	COMPANY	DATE	TIME	REMARKS
Relinquished by: Norm Vielsen	Norm Vielsen	HWA	2/10/15	12:54	
Received by: [illegible]		GEL	2/10/15	1255	
Relinquished by:					
Received by:					

DISTRIBUTION: WHITE - Return to HWA GeoSciences; YELLOW - Retain by Lab; PINK - Retain by Sampler

February 12, 2015

Mr. Arnie Sugar
HWA Geosciences Inc.
21312 - 30th Drive SE, Suite 110
Bothell, WA 98021-7010

Dear Mr. Sugar,

On February 10th, 8 samples were received by our laboratory and assigned our laboratory project number EV15020049. The project was identified as your 98165-660. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	HWA Geosciences Inc. 21312 - 30th Drive SE, Suite 110 Bothell, WA 98021-7010	DATE:	2/12/2015
		ALS JOB#:	EV15020049
		ALS SAMPLE#:	EV15020049-01
CLIENT CONTACT:	Arnie Sugar	DATE RECEIVED:	02/10/2015
CLIENT PROJECT:	98165-660	COLLECTION DATE:	2/9/2015 11:15:00 AM
CLIENT SAMPLE ID	MW-38	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	02/11/2015	GAP

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
Phenol-d5	EPA-8270	**49.3**	02/11/2015	GAP
Nitrobenzene-d5	EPA-8270	**77.9**	02/11/2015	GAP
Terphenyl-d14	EPA-8270	**92.5**	02/11/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	HWA Geosciences Inc. 21312 - 30th Drive SE, Suite 110 Bothell, WA 98021-7010	DATE:	2/12/2015
		ALS JOB#:	EV15020049
		ALS SAMPLE#:	EV15020049-02
CLIENT CONTACT:	Arnie Sugar	DATE RECEIVED:	02/10/2015
CLIENT PROJECT:	98165-660	COLLECTION DATE:	2/9/2015 2:00:00 PM
CLIENT SAMPLE ID	MW-30	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	02/11/2015	GAP

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
Phenol-d5	EPA-8270	**50.1**	02/11/2015	GAP
Nitrobenzene-d5	EPA-8270	**79.4**	02/11/2015	GAP
Terphenyl-d14	EPA-8270	**101**	02/11/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	HWA Geosciences Inc. 21312 - 30th Drive SE, Suite 110 Bothell, WA 98021-7010	DATE:	2/12/2015
		ALS JOB#:	EV15020049
		ALS SAMPLE#:	EV15020049-03
CLIENT CONTACT:	Arnie Sugar	DATE RECEIVED:	02/10/2015
CLIENT PROJECT:	98165-660	COLLECTION DATE:	2/9/2015 3:27:00 PM
CLIENT SAMPLE ID	MW-31	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	02/11/2015	GAP

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
Phenol-d5	EPA-8270	**59.4**	02/11/2015	GAP
Nitrobenzene-d5	EPA-8270	**79.2**	02/11/2015	GAP
Terphenyl-d14	EPA-8270	**95.8**	02/11/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Laboratory Group A Campbell Brothers Limited Company

CERTIFICATE OF ANALYSIS

CLIENT:	HWA Geosciences Inc. 21312 - 30th Drive SE, Suite 110 Bothell, WA 98021-7010	DATE:	2/12/2015
		ALS JOB#:	EV15020049
		ALS SAMPLE#:	EV15020049-04
CLIENT CONTACT:	Arnie Sugar	DATE RECEIVED:	02/10/2015
CLIENT PROJECT:	98165-660	COLLECTION DATE:	2/9/2015 4:46:00 PM
CLIENT SAMPLE ID	MW-11R	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	02/11/2015	GAP

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
Phenol-d5	EPA-8270	**51.2**	02/11/2015	GAP
Nitrobenzene-d5	EPA-8270	**80.2**	02/11/2015	GAP
Terphenyl-d14	EPA-8270	**101**	02/11/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Laboratory Group A Campbell Brothers Limited Company

CERTIFICATE OF ANALYSIS

CLIENT:	HWA Geosciences Inc. 21312 - 30th Drive SE, Suite 110 Bothell, WA 98021-7010	DATE:	2/12/2015
		ALS JOB#:	EV15020049
		ALS SAMPLE#:	EV15020049-05
CLIENT CONTACT:	Arnie Sugar	DATE RECEIVED:	02/10/2015
CLIENT PROJECT:	98165-660	COLLECTION DATE:	2/10/2015 8:30:00 AM
CLIENT SAMPLE ID	DUP 1	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Bis(2-Ethylhexyl)Phthalate	EPA-8270	**16**	2.0	1	ug/L	02/11/2015	GAP

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
Phenol-d5	EPA-8270	**36.7**	02/11/2015	GAP
Nitrobenzene-d5	EPA-8270	**72.9**	02/11/2015	GAP
Terphenyl-d14	EPA-8270	**86.9**	02/11/2015	GAP

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

CERTIFICATE OF ANALYSIS

CLIENT:	HWA Geosciences Inc. 21312 - 30th Drive SE, Suite 110 Bothell, WA 98021-7010	DATE:	2/12/2015
		ALS JOB#:	EV15020049
		ALS SAMPLE#:	EV15020049-06
CLIENT CONTACT:	Arnie Sugar	DATE RECEIVED:	02/10/2015
CLIENT PROJECT:	98165-660	COLLECTION DATE:	2/10/2015 8:50:00 AM
CLIENT SAMPLE ID	MW-36	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	02/11/2015	GAP

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
Phenol-d5	EPA-8270	**36.8**	02/11/2015	GAP
Nitrobenzene-d5	EPA-8270	**78.2**	02/11/2015	GAP
Terphenyl-d14	EPA-8270	**96.2**	02/11/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Laboratory Group A Campbell Brothers Limited Company

CERTIFICATE OF ANALYSIS

CLIENT:	HWA Geosciences Inc. 21312 - 30th Drive SE, Suite 110 Bothell, WA 98021-7010	DATE:	2/12/2015
		ALS JOB#:	EV15020049
		ALS SAMPLE#:	EV15020049-07
CLIENT CONTACT:	Arnie Sugar	DATE RECEIVED:	02/10/2015
CLIENT PROJECT:	98165-660	COLLECTION DATE:	2/10/2015 10:26:00 AM
CLIENT SAMPLE ID	MW-21R	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	02/11/2015	GAP

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
Phenol-d5	EPA-8270	**56.8**	02/11/2015	GAP
Nitrobenzene-d5	EPA-8270	**78.1**	02/11/2015	GAP
Terphenyl-d14	EPA-8270	**92.6**	02/11/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	HWA Geosciences Inc. 21312 - 30th Drive SE, Suite 110 Bothell, WA 98021-7010	DATE:	2/12/2015
		ALS JOB#:	EV15020049
		ALS SAMPLE#:	EV15020049-08
CLIENT CONTACT:	Arnie Sugar	DATE RECEIVED:	02/10/2015
CLIENT PROJECT:	98165-660	COLLECTION DATE:	2/10/2015 11:05:00 AM
CLIENT SAMPLE ID	Trip Blank	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	02/11/2015	GAP

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
Phenol-d5	EPA-8270	**62.5**	02/11/2015	GAP
Nitrobenzene-d5	EPA-8270	**87.1**	02/11/2015	GAP
Terphenyl-d14	EPA-8270	**98.7**	02/11/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	HWA Geosciences Inc. 21312 - 30th Drive SE, Suite 110 Bothell, WA 98021-7010	DATE:	2/12/2015
		ALS SDG#:	EV15020049
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Arnie Sugar		
CLIENT PROJECT:	98165-660		

LABORATORY BLANK RESULTS

MB-021115W - Batch 90486 - Water by EPA-8270

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Phenol	EPA-8270	U	2.0	1	ug/L	02/11/2015	GAP
Pyrene	EPA-8270	U	2.0	1	ug/L	02/11/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	ug/L	02/11/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Laboratory Group A Campbell Brothers Limited Company

CERTIFICATE OF ANALYSIS

CLIENT:	HWA Geosciences Inc. 21312 - 30th Drive SE, Suite 110 Bothell, WA 98021-7010	DATE: ALS SDG#: WDOE ACCREDITATION:	2/12/2015 EV15020049 C601
CLIENT CONTACT:	Arnie Sugar		
CLIENT PROJECT:	98165-660		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 90486 - Water by EPA-8270

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Phenol - BS	EPA-8270	**31.0**			02/11/2015	GAP
Phenol - BSD	EPA-8270	**33.9**	**9**		02/11/2015	GAP
Pyrene - BS	EPA-8270	**105**			02/11/2015	GAP
Pyrene - BSD	EPA-8270	**113**	**8**		02/11/2015	GAP

SQ1 - Spike outside of control limits with a high bias. Associated compounds non-detect. No corrective action taken.

APPROVED BY

Laboratory Director

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Everett, WA 98208
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http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV1502049

Date 2/10/15 Page 1 Of 1

PROJECT ID: 98165-660
REPORT TO COMPANY: HWA Geo Sciences
PROJECT MANAGER: Arnie Sugar
ADDRESS: 2312 30th Drive SE
Bothell, WA 98021
PHONE: 425-774-0106 FAX:
P.O. #: E-MAIL: asugar@hwageo.com
INVOICE TO COMPANY: Same as above
ATTENTION:
ADDRESS:

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA-8021	MTBE by EPA-8021 ☐ EPA-8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM ☐	PCB ☐ Pesticides ☐ by EPA 8081/8082	Metals-MTCA-5 ☐ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	OTHER (Specify): Bis(2-Ethylhexyl) phthalate	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. MW-38	2/9/15	11:15	W	1															X		
2. MW-30	2/9/15	14:00	W	2															X		
3. MW-31	2/9/15	15:27	W	3															X		
4. MW-11R	2/9/15	16:46	W	4															X		
5. Dup 1	2/10/15	8:30	W	5															X		
6. MW-36	2/10/15	8:50	W	6															X		
7. MW-21R	2/10/15	10:26	W	7															X		
8. Trip Blank	2/10/15	11:05	W	8															X		
9.																					
10.																					

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: 2/10/15 1:33
Received By: ALS 2/10/15 1:33
2. Relinquished By:
Received By:

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis
~~10~~ Standard | 5 | 3 | 2 | 1 | SAME DAY

Fuels & Hydrocarbon Analysis
5 Standard | 3 | 1 | SAME DAY

OTHER:
Specify:

*Turnaround request less than standard may incur Rush Charges

CITY OF EVERETT
ENVIRONMENTAL LABORATORY

PROJECT #
00044857

Client:	HWA Geosciences	Date Received:	07/30/15
Program:	Contract - HWA - Landfill	Data Release:	CM
Contact:	Jeff Thompson	Date Reported:	09/14/15

Department	Analysis	Units	DL	Method	PQL	BH22752 MW38 07/30/15	BH22753 MW31 07/30/15	BH22754 DUP72815 07/30/15	BH22755 MW30 07/30/15
METALS	Dis. Arsenic	µg/L	1.0	200.8	4.0	**<1.0**	**2.0 J**	**2.0 J**	**<1.0**
	Dis. Iron	µg/L	40	200.8	160	**<40**	**59600**	**58800**	**320**
	Dis. Manganese	µg/L	1.0	200.8	4.0	**213**	**1220**	**1220**	**24.7**
	Dis. Nickel	µg/L	1.0	200.8	4.0	**<1.0**	**3.1 J**	**3.7 J**	**<1.0**
	Dis. Zinc	µg/L	10	200.8	40	**14 J**	**<10**	**<10**	**<10**
NUTRIENTS	Chloride	mg/L	0.0	4500-CL-E	0.0	**11.1**	**148**	**149**	**9.8**

Department	Analysis	Units	DL	Method	PQL	BH22756 MW29R 07/30/15	BH22757 MW39R 07/30/15	BH22758 MW11R 07/30/15	BH22759 MW37 07/30/15
METALS	Dis. Arsenic	µg/L	1.0	200.8	4.0	**2.6 J**	**2.0 J**	**<1.0**	**1.2 J**
	Dis. Iron	µg/L	40	200.8	160	**1800**	**130 J**	**5600**	**2710**
	Dis. Manganese	µg/L	1.0	200.8	4.0	**473**	**229**	**509**	**491**
	Dis. Nickel	µg/L	1.0	200.8	4.0	**3.6 J**	**2.0 J**	**<1.0**	**1.3 J**
	Dis. Zinc	µg/L	10	200.8	40	**<10**	**<10**	**<10**	**<10**
NUTRIENTS	Chloride	mg/L	0.0	4500-CL-E	0.0	**108**	**5.0**	**3.4**	**31.0**

Department	Analysis	Units	DL	Method	PQL	BH22760 MW21 07/30/15	BH22761 MW36 07/30/15
METALS	Dis. Arsenic	µg/L	1.0	200.8	4.0	**1.8 J**	**<1.0**
	Dis. Iron	µg/L	40	200.8	160	**42 J**	**<40**
	Dis. Manganese	µg/L	1.0	200.8	4.0	**2.5 J**	**<1.0**
	Dis. Nickel	µg/L	1.0	200.8	4.0	**<1.0**	**<1.0**
	Dis. Zinc	µg/L	10	200.8	40	**<10**	**<10**
NUTRIENTS	Chloride	mg/L	0.0	4500-CL-E	0.0	**10.9**	**210**

DATA REPORTING QUALIFIERS

DL = Detection Limit
PQL = Practical Quantitation Limit (= 4xDL)
J = Analyte concentration less than PQL
SA = See Attached
ND = No Data

When Dissolved Metals > Total Metals note possible filtering process contamination
P/A (used for Total Coliform results) P= Coliforms present, A = Coliforms absent
Y/N (used for E. Coli Results) Y= E. Coli present, N=E. Coli absent
E = Estimated Value. Count from plates not within ideal range.
R = Sample was re-analyzed after holding time.

August 5, 2015

Mr. Jeff Thompson
HWA Geosciences Inc.
21312 - 30th Drive SE, Suite 110
Bothell, WA 98021-7010

Dear Mr. Thompson,

On July 30th, 10 samples were received by our laboratory and assigned our laboratory project number EV15070156. The project was identified as your Everett Landfill. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	HWA Geosciences Inc. 21312 - 30th Drive SE, Suite 110 Bothell, WA 98021-7010	DATE: ALS JOB#: ALS SAMPLE#:	8/5/2015 EV15070156 EV15070156-01
CLIENT CONTACT:	Jeff Thompson	DATE RECEIVED:	07/30/2015
CLIENT PROJECT:	Everett Landfill	COLLECTION DATE:	7/29/2015 9:30:00 AM
CLIENT SAMPLE ID	MW38	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	UG/L	08/03/2015	GAP

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
Phenol-d5	EPA-8270	**23.3**	08/03/2015	GAP
Nitrobenzene-d5	EPA-8270	**69.2**	08/03/2015	GAP
Terphenyl-d14	EPA-8270	**98.9**	08/03/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Group USA, Corp

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	HWA Geosciences Inc. 21312 - 30th Drive SE, Suite 110 Bothell, WA 98021-7010	DATE: ALS JOB#: ALS SAMPLE#:	8/5/2015 EV15070156 EV15070156-02
CLIENT CONTACT:	Jeff Thompson	DATE RECEIVED:	07/30/2015
CLIENT PROJECT:	Everett Landfill	COLLECTION DATE:	7/29/2015 11:30:00 AM
CLIENT SAMPLE ID	MW31	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	UG/L	08/03/2015	GAP

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
Phenol-d5	EPA-8270	**24.7**	08/03/2015	GAP
Nitrobenzene-d5	EPA-8270	**72.0**	08/03/2015	GAP
Terphenyl-d14	EPA-8270	**93.3**	08/03/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	HWA Geosciences Inc. 21312 - 30th Drive SE, Suite 110 Bothell, WA 98021-7010	DATE: ALS JOB#: ALS SAMPLE#:	8/5/2015 EV15070156 EV15070156-03
CLIENT CONTACT:	Jeff Thompson	DATE RECEIVED:	07/30/2015
CLIENT PROJECT:	Everett Landfill	COLLECTION DATE:	7/29/2015 11:45:00 AM
CLIENT SAMPLE ID	DUP 72815	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	UG/L	08/03/2015	GAP

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
Phenol-d5	EPA-8270	**26.3**	08/03/2015	GAP
Nitrobenzene-d5	EPA-8270	**70.0**	08/03/2015	GAP
Terphenyl-d14	EPA-8270	**96.0**	08/03/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Group USA, Corp

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	HWA Geosciences Inc. 21312 - 30th Drive SE, Suite 110 Bothell, WA 98021-7010	DATE: ALS JOB#: ALS SAMPLE#:	8/5/2015 EV15070156 EV15070156-04
CLIENT CONTACT:	Jeff Thompson	DATE RECEIVED:	07/30/2015
CLIENT PROJECT:	Everett Landfill	COLLECTION DATE:	7/29/2015 12:45:00 PM
CLIENT SAMPLE ID	MW30	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	UG/L	08/03/2015	GAP

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
Phenol-d5	EPA-8270	**23.3**	08/03/2015	GAP
Nitrobenzene-d5	EPA-8270	**69.1**	08/03/2015	GAP
Terphenyl-d14	EPA-8270	**97.8**	08/03/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Group USA, Corp

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	HWA Geosciences Inc. 21312 - 30th Drive SE, Suite 110 Bothell, WA 98021-7010	DATE: ALS JOB#: ALS SAMPLE#:	8/5/2015 EV15070156 EV15070156-05
CLIENT CONTACT:	Jeff Thompson	DATE RECEIVED:	07/30/2015
CLIENT PROJECT:	Everett Landfill	COLLECTION DATE:	7/29/2015 1:45:00 PM
CLIENT SAMPLE ID	MW29R	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Bis(2-Ethylhexyl)Phthalate	EPA-8270	**7.7**	2.0	1	UG/L	08/03/2015	GAP

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
Phenol-d5	EPA-8270	**26.3**	08/03/2015	GAP
Nitrobenzene-d5	EPA-8270	**78.3**	08/03/2015	GAP
Terphenyl-d14	EPA-8270	**104**	08/03/2015	GAP

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ALS Group USA, Corp

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	HWA Geosciences Inc. 21312 - 30th Drive SE, Suite 110 Bothell, WA 98021-7010	DATE: ALS JOB#: ALS SAMPLE#:	8/5/2015 EV15070156 EV15070156-06
CLIENT CONTACT:	Jeff Thompson	DATE RECEIVED:	07/30/2015
CLIENT PROJECT:	Everett Landfill	COLLECTION DATE:	7/29/2015 2:20:00 PM
CLIENT SAMPLE ID	MW39R	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Bis(2-Ethylhexyl)Phthalate	EPA-8270	**8.1**	2.0	1	UG/L	08/03/2015	GAP

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
Phenol-d5	EPA-8270	**19.0**	08/03/2015	GAP
Nitrobenzene-d5	EPA-8270	**68.8**	08/03/2015	GAP
Terphenyl-d14	EPA-8270	**78.8**	08/03/2015	GAP

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	HWA Geosciences Inc. 21312 - 30th Drive SE, Suite 110 Bothell, WA 98021-7010	DATE: ALS JOB#: ALS SAMPLE#:	8/5/2015 EV15070156 EV15070156-07
CLIENT CONTACT:	Jeff Thompson	DATE RECEIVED:	07/30/2015
CLIENT PROJECT:	Everett Landfill	COLLECTION DATE:	7/29/2015 4:45:00 PM
CLIENT SAMPLE ID	MW11R	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	UG/L	08/03/2015	GAP

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
Phenol-d5	EPA-8270	**21.7**	08/03/2015	GAP
Nitrobenzene-d5	EPA-8270	**71.1**	08/03/2015	GAP
Terphenyl-d14	EPA-8270	**88.1**	08/03/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Group USA, Corp

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	HWA Geosciences Inc. 21312 - 30th Drive SE, Suite 110 Bothell, WA 98021-7010	DATE: ALS JOB#: ALS SAMPLE#:	8/5/2015 EV15070156 EV15070156-08
CLIENT CONTACT:	Jeff Thompson	DATE RECEIVED:	07/30/2015
CLIENT PROJECT:	Everett Landfill	COLLECTION DATE:	7/29/2015 5:45:00 PM
CLIENT SAMPLE ID	MW37	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	UG/L	08/03/2015	GAP

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
Phenol-d5	EPA-8270	**25.1**	08/03/2015	GAP
Nitrobenzene-d5	EPA-8270	**74.7**	08/03/2015	GAP
Terphenyl-d14	EPA-8270	**100**	08/03/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Group USA, Corp

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CERTIFICATE OF ANALYSIS

CLIENT:	HWA Geosciences Inc. 21312 - 30th Drive SE, Suite 110 Bothell, WA 98021-7010	DATE: ALS JOB#: ALS SAMPLE#:	8/5/2015 EV15070156 EV15070156-09
CLIENT CONTACT:	Jeff Thompson	DATE RECEIVED:	07/30/2015
CLIENT PROJECT:	Everett Landfill	COLLECTION DATE:	7/29/2015 12:45:00 PM
CLIENT SAMPLE ID	MW36	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	UG/L	08/03/2015	GAP

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
Phenol-d5	EPA-8270	**23.8**	08/03/2015	GAP
Nitrobenzene-d5	EPA-8270	**70.1**	08/03/2015	GAP
Terphenyl-d14	EPA-8270	**101**	08/03/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Group USA, Corp

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	HWA Geosciences Inc. 21312 - 30th Drive SE, Suite 110 Bothell, WA 98021-7010	DATE: ALS JOB#: ALS SAMPLE#:	8/5/2015 EV15070156 EV15070156-10
CLIENT CONTACT:	Jeff Thompson	DATE RECEIVED:	07/30/2015
CLIENT PROJECT:	Everett Landfill	COLLECTION DATE:	7/30/2015 12:45:00 PM
CLIENT SAMPLE ID	MW21	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	2.0	1	UG/L	08/03/2015	GAP

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
Phenol-d5	EPA-8270	**23.8**	08/03/2015	GAP
Nitrobenzene-d5	EPA-8270	**71.0**	08/03/2015	GAP
Terphenyl-d14	EPA-8270	**99.7**	08/03/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Group USA, Corp

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	HWA Geosciences Inc. 21312 - 30th Drive SE, Suite 110 Bothell, WA 98021-7010	DATE: ALS SDG#: WDOE ACCREDITATION:	8/5/2015 EV15070156 C601
CLIENT CONTACT:	Jeff Thompson		
CLIENT PROJECT:	Everett Landfill		

LABORATORY BLANK RESULTS

MB-072715W - Batch 95682 - Water by EPA-8270

ANALYTE	METHOD	RESULTS	QUAL	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Phenol	EPA-8270	U		UG/L	2.0	07/29/2015	GAP
Pyrene	EPA-8270	U		UG/L	2.0	07/29/2015	GAP
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U		UG/L	2.0	07/29/2015	GAP

U - Analyte analyzed for but not detected at level above reporting limit.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp

CERTIFICATE OF ANALYSIS

CLIENT:	HWA Geosciences Inc. 21312 - 30th Drive SE, Suite 110 Bothell, WA 98021-7010	DATE: ALS SDG#: WDOE ACCREDITATION:	8/5/2015 EV15070156 C601
CLIENT CONTACT:	Jeff Thompson		
CLIENT PROJECT:	Everett Landfill		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 95682 - Water by EPA-8270

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Phenol - BS	EPA-8270	**32.1**			07/29/2015	GAP
Phenol - BSD	EPA-8270	**32.2**	**0**		07/29/2015	GAP
Pyrene - BS	EPA-8270	**96.2**			07/29/2015	GAP
Pyrene - BSD	EPA-8270	**102**	**6**		07/29/2015	GAP

APPROVED BY

Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp

ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV1507056

Date 7/29/15 Page 1 Of 1

PROJECT ID: Everett Land Fill
REPORT TO COMPANY: HWA
PROJECT MANAGER: Jeff Thompson
ADDRESS: 21312 30th Drive SE Suite 110
Bothell WA
PHONE: 425-774-0106 FAX:
P.O. #: 98165-600 E-MAIL: JThompson@hwageo.com
KStilson@hwageo.com
INVOICE TO COMPANY:
ATTENTION:
ADDRESS:

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA-8021	MTBE by EPA-8021 ☐ EPA-8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM ☐	PCB ☐ Pesticides ☐ by EPA 8081/8082	Metals-MTCA-5 ☐ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	OTHER (Specify)	SVOC	Bis 2-Ethyl Hexyl phthalate	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. MW38	7/29	930	GW	1																1			1	
2. MW31		1130	W	2																1			1	
3. DUP 72815		1195	W	3																1			1	
4. MW30		1245	W	4																1			1	
5. MW29R		145	W	5																1			1	
6. MW39R		220	W	6																1			1	
7. ~~to~~ MW11R		445	W	7																1			1	
8. MW37		545	W	8																1			1	
9. MW36		1295	W	9																1			1	
10. MW21	7/30	1245	W	10																1			1	

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: KStilson HWA 7/30/15
Received By: ALS 7/30/15 3:15
2. Relinquished By:
Received By:

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: (10) Standard | 5 | 3 | 2 | 1 | SAME DAY

Fuels & Hydrocarbon Analysis: 5 Standard | 3 | 1 | SAME DAY

OTHER:
Specify:

*Turnaround request less than standard may incur Rush Charges

QUALITY CONTROL REVIEW OF ANALYTICAL DATA

Sampling Location: Everett Landfill/Tire Fire Site, Everett, Washington
Samples collected by HWA GeoSciences, Inc. (HWA)
Sample Dates: February 9-10, 2015, and July 29-30, 2015

Ground Water Sample Locations:

- Monitoring wells MW-11R, MW-21R, MW-29R, MW-30, MW-31, MW-36, MW-37, MW-38, MW-39R

Analyses Performed:

- City of Everett Environmental Laboratory: dissolved metals by EPA Method 200.8; chloride by Standard Method 4500-CL-E
- ALS Environmental Laboratory Everett: Bis(2-Ethylhexyl)Phthalate by EPA Method 8270

Field QA/QC:

- Field sampling data sheets for both of the 2015 sampling events indicate that proper well micro-purging techniques were employed and sample bottles utilized
- A ground water field duplicate was collected on February 10, 2015 at well MW-21R (the upgradient well). All analytes were within a 14 percent relative percent difference (RPD) between the two samples, except for bis(2-ethylhexyl)phthalate, which was not detected above the laboratory reporting limit of 2 micrograms per liter (ug/L) in the primary sample and was detected at a concentration of 16 ug/L in the duplicate sample. No other samples collected during that event contained any bis(2-ethylhexyl)phthalate above the reporting limit of 2 ug/L, suggesting some (unresolved) problem with the duplicate sample, either in the lab or in the field. Based on this anomaly, and the fact that MW-21R is the upgradient (presumed clean) well, no action was taken based on this result.

  A ground water field duplicate was collected on July 29, 2015 at well MW-31. All analytes were within a 1.3 percent relative percent difference between the two samples.

  The duplicate data is summarized in the table below:

Sample ID	bis(2-ethylhexyl)phthalate (µg/L)	DISS Arsenic (µg/L)	DISS Iron (µg/L)	DISS Manganese (µg/L)	DISS Nickel (µg/L)	DISS Zinc (µg/L)	Chloride (mg/L)
MW-21R	<2.0	21	13700	1720	<1.0	<10	10.2
Dup 1	16	24.2	14000	1730	<1.0	<10	10.5
RPD		**-14.16**	**-2.17**	**-0.58**			**-2.90**
MW-31	<2.0	2.0J	59600	1220	3.1J	<10	148
Dup 72815	<2.0	2.0J	58800	1220	3.7J	<10	149
RPD			**1.35**	**0**			**-0.67**

- One trip blank collected on February 10, 2015 was submitted for SVOC bis(2-ethylhexyl)phthalate analysis. The contaminant of concern was not detected. The trip blank data is summarized in the table below:

Sample ID	bis(2-ethylhexyl)phthalate (µg/L)	DISS Arsenic (µg/L)	DISS Iron (µg/L)	DISS Manganese (µg/L)	DISS Nickel (µg/L)	DISS Zinc (µg/L)	Chloride (mg/L)
Trip Blank	<2.0	N/A	N/A	N/A	N/A	N/A	N/A

- No field blanks were collected during the 2015 sampling events, as all sampling equipment used was disposable.
- No other internal QA/QC issues were noted

Laboratory QA/QC:

- The City of Everett Environmental Laboratory did not provide any QA/QC data with their analytical data; thus HWA cannot evaluate the validity of the reported data
- ALS used laboratory method blanks, surrogate spikes in field samples, spike blank/ spike blank duplicates (SB/SBD), method blanks, and relative percent difference (RPD) calculations between SB/SBDs to maintain quality control during analyses

Holding Times:

- All samples were submitted to the two laboratories and were analyzed within standard holding times

SVOCs by GC/MS:

- No bis(2-ethylhexyl)phthalate was detected in the laboratory method blank above the laboratory reporting limit
- Surrogate, SB and SBD recoveries were all within control limits
- SB/SBD RPDs were all within control limits

Laboratory Flags:

- The only data flags noted were for estimated concentrations (J flags) of dissolved arsenic, iron, nickel, manganese, and zinc reported a concentration close to the City of Everett Environmental Laboratory's reporting limits

Summary:

HWA's review of the analytical data determined them to be acceptable for their intended use; a caveat to HWA's review is the lack of laboratory QC data for the analyses performed by the City of Everett Environmental Laboratory.