

Table 1. Newcastle Landfill January 2006 Groundwater Monitoring Results

Analyte	Units	GWQS	MCL	MW-1 1/30/2006	MW-2 1/30/2006	MW-3 1/30/2006	MW-5 1/30/2006	MW-5D 1/30/2006	SW-6 1/30/2006	SW-7 1/30/2006	Trip Blank 1/30/2006	
Field Parameters												
pH	s.u.	6.5-8.5 **		7.03	7.14	7.06	6.50	--	7.52	8.23	--	
Specific Conductivity	µmhos/cm		700 **	912	552	871	740	--	898	137	--	
Temperature	C			9.92	10.65	10.42	13.42	--	11.75	8.04	--	
Conventional Parameters												
Ammonia-N	mg/L			0.076	0.350	0.385	0.040	0.055	0.108	0.042	--	
Chloride	mg/L	250 **	250 **	3.3	9.6	7.1	7.0	6.7	5.2	3.2	--	
COD	mg/L			5.00 U	16.5	7.48	6.48	5.14	49.0	552	--	
Hardness	mg/L			520	220	140	360	360	280	47	--	
Nitrate-N	mg/L	10 *	10 *	0.010 U	0.014	0.012	1.00 U	1.00 U	0.596	2.26	--	
Nitrate-Nitrite	mg/L			0.010 U	0.014	0.012	1.00 U	1.00 U	0.596	2.28	--	
Nitrite-N	mg/L		1 *	0.010 U	0.010 U	0.010 U	1.00 U	0.010 U	0.010 U	0.021	--	
Sulfate	mg/L	250 **	250 **	269	15.2	46.9	134	128	108	18.8	--	
TDS	mg/L	500 **	500 **	710	381	535	506	469	596	106	--	
TOC	mg/L			1.50 U	5.32	3.02	2.02	1.99	2.87	5.57	--	
Dissolved Metals												
Antimony	mg/L		0.006 *	0.002 U	0.002 U	--	--					
Arsenic	mg/L	0.00005 ***	0.01 *	0.002	0.001	0.004	0.030	0.031	0.003	--	--	
Beryllium	mg/L		0.004 *	0.001 U	0.001 U	--	--					
Cadmium	mg/L	0.01 *	0.005 *	0.002 U	0.002 U	--	--					
Calcium	mg/L			138	55.8	29.4	82.9	83.4	55.9	11.8	--	
Chromium	mg/L	0.05 *	0.1 *	0.005 U	0.005 U	--	--					
Copper	mg/L	1 **	1.3 ** TT	0.002 U	0.002 U	--	--					
Iron	mg/L	0.3 **	0.3 **	1.19	0.33	1.59	4.56	4.60	0.20	0.07	--	
Lead	mg/L	0.05 *	0.015 ** TT	0.001 U	0.001 U	--	--					
Magnesium	mg/L			42.1	18.7	16.0	37.5	37.5	32.8	4.23	--	
Manganese	mg/L	0.05 **	0.05 **	0.109	0.110	0.068	0.560	0.561	0.283	0.022	--	
Mercury	mg/L	0.002 *	0.002 *	0.0001 U	0.0001 U	--	--					
Nickel	mg/L		0.1 *	0.01 U	0.01 U	0.01 U	0.02	0.02	0.01 U	--	--	
Selenium	mg/L	0.01 *	0.05 *	0.002 U	0.002 U	--	--					
Silver	mg/L	0.05 *	0.1 **	0.003 U	0.003 U	--	--					
Thallium	mg/L		0.002 *	0.001 U	0.001 U	--	--					
Zinc	mg/L	5 **	5 **	0.006 U	0.041	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	--	
Volatile Organics												
1,1,1-Trichloroethane	ug/L	200 *	200 *	0.2 U	0.2 U	--	0.2 U					
1,1,2,2-Tetrachloroethane	ug/L			0.2 U	0.2 U	--	0.2 U					
1,1,2-Trichloro-1,2,2-Trifluoroethane	ug/L			0.2 U	0.2 U	--	0.2 U					
1,1,2-Trichloroethane	ug/L		5 *	0.2 U	0.2 U	--	0.2 U					
1,1-Dichloroethane	ug/L	1 ***		0.2 U	0.2 U	--	0.2 U					

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Volatile Organics (continued)												
1,1-Dichloroethylene	ug/L		7 *	0.2 U	0.2 U	--	0.2 U					
1,2-Dichloroethane	ug/L	0.5 ***	5 *	0.2 U	0.2 U	--	0.2 U					
1,2-Dichloropropane	ug/L	0.6 ***	5 *	0.2 U	0.2 U	--	0.2 U					
2-Butanone (Methyl Ethyl Ketone)	ug/L			1.0 U	1.0 U	--	1.0 U					
2-Chloroethyl Vinyl ether	ug/L			0.5 U	0.5 U	--	0.5 U					
2-Hexanone	ug/L			1.0 U	1.0 U	--	1.0 U					
4-Methyl-2-pentanone	ug/L			1.0 U	1.0 U	--	1.0 U					
Acetone	ug/L			1.0 U	1.0 U	1.0 U	5.4	5.4	2.0	--	1.0 U	
Benzene	ug/L	1 ***	5 *	0.2 U	0.2 U	--	0.2 U					
Bromodichloromethane	ug/L	0.3 ***	100 * THM	0.2 U	0.2 U	--	0.2 U					
Bromoform	ug/L	5 ***	100 * THM	0.2 U	0.2 U	--	0.2 U					
Bromomethane	ug/L			0.2 U	0.2 U	--	0.2 U					
Carbon disulfide	ug/L			0.2 U	0.2 U	--	0.2 U					
Carbon tetrachloride	ug/L	0.3 ***	5 *	0.2 U	0.2 U	--	0.2 U					
Chlorobenzene	ug/L		100 *	0.2 U	0.2 U	--	0.2 U					
Chloroethane	ug/L			0.2 U	0.2 U	--	0.2 U					
Chloroform	ug/L	7 ***	100 * THM	0.2 U	0.2 U	--	0.2 U					
Chloromethane	ug/L			0.2 U	0.2 U	--	0.2 U					
cis-1,2-Dichloroethene	ug/L		70 *	0.2 U	0.2 U	--	0.2 U					
cis-1,3-Dichloropropene	ug/L			0.2 U	0.2 U	--	0.2 U					
Dibromochloromethane	ug/L		100 * THM	0.2 U	0.2 U	--	0.2 U					
Ethylbenzene	ug/L		700 *	0.2 U	0.2 U	--	0.2 U					
m,p-xylene	ug/L		10000 * XYL	0.4 U	0.4 U	--	0.4 U					
Methylene chloride	ug/L	5 ***	5 *	0.3 U	0.3 U	--	0.3 U					
o-xylene	ug/L		10000 * XYL	0.2 U	0.2 U	--	0.2 U					
Styrene	ug/L		100 *	0.2 U	0.2 U	--	0.2 U					
Tetrachloroethylene	ug/L	0.8 ***	5 *	0.2 U	0.2 U	--	0.2 U					
Toluene	ug/L		1000 *	0.2 U	0.2 U	--	0.2 U					
trans-1,2-Dichloroethene	ug/L		100 *	0.2 U	0.2 U	--	0.2 U					
trans-1,3-Dichloropropene	ug/L			0.2 U	0.2 U	--	0.2 U					
Trichloroethene	ug/L	3 ***	5 *	0.2 U	0.2 U	--	0.2 U					
Trichlorofluoromethane	ug/L			0.2 U	0.2 U	--	0.2 U					
Vinyl Acetate	ug/L			0.2 U	0.2 U	--	0.2 U					
Vinyl Chloride	ug/L	0.02 ***	2 *	0.2 U	0.2 U	--	0.2 U					
Semi-Volatile Organics												
1,2,4-Trichlorobenzene	ug/L		70 *	1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	
1,2-Dichlorobenzene	ug/L		600 *	1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	
1,3-Dichlorobenzene	ug/L			1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	
1,4-Dichlorobenzene	ug/L	4 ***	75 *	1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	
2,2'-oxybis(1-chloropropane)	ug/L			1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	

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Semi-Volatile Organics (continued)												
2,4,5-Trichlorophenol	ug/L			5.0 U	5.0 U	5.2 U	5.4 U	5.3 U	5.3 U	--	--	
2,4,6-Trichlorophenol	ug/L	4 ***		5.0 U	5.0 U	5.2 U	5.4 U	5.3 U	5.3 U	--	--	
2,4-Dichlorophenol	ug/L			5.0 U	5.0 U	5.2 U	5.4 U	5.3 U	5.3 U	--	--	
2,4-Dimethylphenol	ug/L			1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	
2,4-Dinitrophenol	ug/L			10 U	10 U	10 U	11 U	10 U	10 U	--	--	
2,4-Dinitrotoluene	ug/L	0.1 ***		5.0 U	5.0 U	5.2 U	5.4 U	5.3 U	5.3 U	--	--	
2,6-Dinitrotoluene	ug/L	0.1 ***		5.0 U	5.0 U	5.2 U	5.4 U	5.3 U	5.3 U	--	--	
2-Chloronaphthalene	ug/L			1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	
2-Chlorophenol	ug/L			1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	
2-Methyl-4,6-dinitrophenol	ug/L			10 U	10 U	10 U	11 U	10 U	10 U	--	--	
2-Methylnaphthalene	ug/L			1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	
2-Methylphenol	ug/L			1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	
2-Nitroaniline	ug/L			5.0 U	5.0 U	5.2 U	5.4 U	5.3 U	5.3 U	--	--	
2-Nitrophenol	ug/L			5.0 U	5.0 U	5.2 U	5.4 U	5.3 U	5.3 U	--	--	
3,3'-Dichlorobenzidine	ug/L	0.2 ***		5.0 U	5.0 U	5.2 U	5.4 U	5.3 U	5.3 U	--	--	
3-Nitroaniline	ug/L			5.0 U	5.0 U	5.2 U	5.4 U	5.3 U	5.3 U	--	--	
4-Bromophenyl phenyl ether	ug/L			1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	
4-Chloro-3-methylphenol	ug/L			5.0 U	5.0 U	5.2 U	5.4 U	5.3 U	5.3 U	--	--	
4-Chloroaniline	ug/L			5.0 U	5.0 U	5.2 U	5.4 U	5.3 U	5.3 U	--	--	
4-Chlorophenyl phenyl ether	ug/L			1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	
4-Methylphenol	ug/L			1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	
4-Nitroaniline	ug/L			5.0 U	5.0 U	5.2 U	5.4 U	5.3 U	5.3 U	--	--	
4-Nitrophenol	ug/L			5.0 U	5.0 U	5.2 U	5.4 U	5.3 U	5.3 U	--	--	
Acenaphthene	ug/L	0.01 ***PAH		1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	
Acenaphthylene	ug/L	0.01 ***PAH		1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	
Anthracene	ug/L	0.01 ***PAH		1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	
Benzo(a)anthracene	ug/L	0.01 ***PAH		1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	
Benzo(a)pyrene	ug/L	0.008 ***	0.2 *	1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	
Benzo(b)fluoranthene	ug/L	0.01 ***PAH		1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	
Benzo(g,h,i)perylene	ug/L	0.01 ***PAH		1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	
Benzo(k)fluoranthene	ug/L	0.01 ***PAH		1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	
Benzoic acid	ug/L			10 U	10 U	10 U	11 U	10 U	10 U	--	--	
Benzyl alcohol	ug/L			5.0 U	5.0 U	5.2 U	5.4 U	5.3 U	5.3 U	--	--	
Bis(2-chloroethoxy)methane	ug/L			1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	
Bis(2-chloroethyl)ether	ug/L	0.07 ***		1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	
Bis(2-ethylhexyl)phthalate	ug/L	6 ***	6 *	1.0 U	3.5	1.0 U	1.1 U	1.0 U	3.4	--	--	
Butyl benzyl phthalate	ug/L			1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	
Carbazole	ug/L	5 ***		1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	
Chrysene	ug/L	0.01 ***PAH		1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	
Dibenzo(a,h)anthracene	ug/L	0.01 ***PAH		1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	
Dibenzofuran	ug/L			1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--	

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Semi-Volatile Organics (continued)											
Diethyl phthalate	ug/L			1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--
Dimethyl phthalate	ug/L			1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--
Di-n-Butylphthalate	ug/L			1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--
Di-n-octylphthalate	ug/L			1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--
Fluoranthene	ug/L	0.01 ***PAH		1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--
Fluorene	ug/L	0.01 ***PAH		1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--
Hexachlorobenzene	ug/L	0.05 ***	1 *	1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--
Hexachlorobutadiene	ug/L			1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--
Hexachlorocyclopentadiene	ug/L		50 *	5.0 U	5.0 U	5.2 U	5.4 U	5.3 U	5.3 U	--	--
Hexachloroethane	ug/L			1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--
Indeno(1,2,3-cd)pyrene	ug/L	0.01 ***PAH		1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--
Isophorone	ug/L			1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--
Naphthalene	ug/L	0.01 ***PAH		1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--
Nitrobenzene	ug/L			1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--
N-Nitroso-di-n-propylamine	ug/L	0.01 ***		5.0 U	5.0 U	5.2 U	5.4 U	5.3 U	5.3 U	--	--
N-Nitrosodiphenylamine	ug/L	17 ***		1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--
Pentachlorophenol	ug/L		1 *	5.0 U	5.0 U	5.2 U	5.4 U	5.3 U	5.3 U	--	--
Phenanthrene	ug/L	0.01 ***PAH		1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--
Phenol	ug/L			1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--
Pyrene	ug/L	0.01 ***PAH		1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	--	--

Notes: GWQS = Water Quality Standards for Ground Waters of the State of Washington (173-200 WAC)
MCL = Maximum Contaminant Level, Washington State Drinking Water Regulations (Chapter 246-290 WAC)
* = Primary contaminant criteria
** = Secondary contaminant criteria
*** = Carcinogenic contaminant criteria
= Exceeds MCL or GWQS
U = Compound undetected at the specified reporting limit
-- = Not analyzed
TT = EPA action levels
THM = Primary MCL for the sum of all trihalomethanes
XYL = Primary MCL for the sum of all xylenes
PAH = Carcinogenic GWQS for the sum of all polycyclic aromatic hydrocarbons