

Attachment 3

TABLE 5A

Calculation of Leaching-Based Site Specific Levels (LSSLs) for Inorganics

Parameter of Interest	Chemical	Kd Distribution coefficient (L/kg)	H' Henry's Law constant (unitless)	RBGC (mg/L)	NDEP Worker BCL (mg/kg)	LBCL (DAF=1) ⁴ (mg/kg)	LBCL (DAF=20) ⁴ (mg/kg)	Quaternary Alluvium Average (13.5') Aquifer Thickness	
								DAF	LSSL ^{1,2,3} (mg/kg)
	Antimony	4.5E+01	--	6.0E-03	4.5E+02	3.0E-01	6.0E+00	2.7E+02	7.32E+01
	Arsenic	3.1E+01	--	1.0E-02	1.8E+00	1.0E+00	2.0E+01	1.5E+02	4.56E+01
	Barium	5.2E+01	--	2.0E+00	1.0E+05	8.2E+01	1.6E+03	2.3E+02	2.37E+04
	Boron	3.0E+00	--	7.3E+00	1.0E+05	2.3E+01	4.7E+02	1.7E+02	3.98E+03
	Cadmium	4.3E+03	--	5.0E-03	5.5E+02	4.0E-01	8.0E+00	3.0E+02	6.51E+03
	Chromium (Total)	8.5E+02	--	1.0E-01	4.1E+02	2.0E+00	4.0E+01	4.5E+01	3.82E+03
	Chromium (VI)	1.4E+01	--	1.0E-01	4.1E+02	2.0E+00	4.0E+01	4.5E+02	6.36E+02
	Cobalt	4.5E+01	--	1.1E-02	3.3E+02	4.9E-01	9.9E+00	1.7E+02	8.59E+01
	Lead	9.0E+02	--	1.5E-02	8.0E+02	1.4E+01	2.7E+02	2.3E+02	3.16E+03
	Magnesium	4.5E+00	--	2.1E+02	1.0E+05	9.7E+02	1.9E+04	6.2E+01	5.96E+04
	Manganese	6.5E+01	--	5.1E-01	1.4E+04	3.3E+01	6.7E+02	7.1E+01	2.38E+03
	Mercury	1.0E+01	4.7E-01	2.0E-03	1.8E+02	1.0E-01	2.1E+00	6.9E+02	1.41E+01
	Molybdenum	2.0E+01	--	1.8E-01	5.7E+03	3.6E+00	7.3E+01	4.7E+02	1.70E+03
	Nickel	1.9E+03	--	7.3E-01	2.0E+04	7.0E+00	1.4E+02	2.2E+02	3.05E+05
	Thallium	9.6E+01	--	2.0E-03	8.0E+01	4.0E-01	8.0E+00	3.3E+02	6.38E+01
Perchlorate	Perchlorate	2.8E-07	--	1.8E-02	7.9E+02	3.6E-03	7.2E-02	1.7E+01	4.24E-02

Notes:

- 1 - Leaching-based, site-specific levels (LSSLs) are calculated using dilution attenuation factors (DAFs) calculated in Attachment 3, Table 4A, and the following site-specific soil properties from Attachment 3, Table 1A: water-filled porosity, $\theta_w=0.22$; air-filled porosity, $\theta_a=0.18$; and dry bulk density, $\rho_b=1.61$ kg/L.
- 2 - $LSSL = RBGC * DAF * (K_d + (\theta_w + \theta_a * H) / \rho_b)$
- 3 - LSSL not calculated for chemicals without a detection above the LBCL (DAF=20) or without an RBGC.
- 4 - The generic LBCL is used for chemicals without an established LBCL. Where applicable, the adjusted LBCL is used based on the NDEP approved hierarchy for RBGCs is used (See Attachment 3 Table 2A).

Abbreviations:

- LSSL = Leaching-based, site-specific levels
- RBGC = Risk-based groundwater concentration
- DAF = Dilution attenuation factor
- NE = Value not established
- LBCL = Leaching-based basic comparison levels
- f_{oc} = fraction of organic carbon
- BCL = Basic comparison level