

Attachment 3
TABLE 3A
Inorganic Chemical Properties for Soil-Water Partition Equation
for Calculating Leaching-Based, Site-Specific Levels (LSSLs)

Parameter of Interest	Chemical	RBGC (mg/L)	RBGC Key	Kd Distribution coefficient (L/kg)	Kd Ref	Ref Soil pH ¹	H' Henry's Law constant	H' Ref
Metals	Aluminum	3.65E+01	N	1.50E+03	Kd a	NA	--	--
	Antimony	6.00E-03	M	4.50E+01	Kd c	NA	--	--
	Arsenic	1.00E-02	M	3.10E+01	Kd d	8	--	--
	Barium	2.00E+00	M	5.20E+01	Kd d	8	--	--
	Beryllium	4.00E-03	M	1.00E+05	Kd d	8	--	--
	Boron	7.30E+00	N	3.00E+00	Kd a	NA	--	--
	Cadmium	5.00E-03	M	4.30E+03	Kd d	8	--	--
	Chromium (Total)	1.00E-01	M	8.50E+02	Kd a	NA	--	--
	Chromium (VI)	1.00E-01	M	1.40E+01	Kd d	8	--	--
	Cobalt	1.10E-02	N	4.50E+01	Kd a	NA	--	--
	Copper	1.30E+00	N	3.50E+01	Kd a	NA	--	--
	Iron	2.56E+01	N	2.50E+01	Kd a	NA	--	--
	Lead	1.50E-02	--	9.00E+02	Kd a	NA	--	--
	Magnesium	2.07E+02	N	4.50E+00	Kd a	NA	--	--
	Manganese	5.11E-01	N	6.50E+01	Kd a	NA	--	--
	Mercury	2.00E-03	M	1.00E+01	Kd a	NA	4.67E-01	2
	Molybdenum	1.80E-01	N	2.00E+01	Kd a	NA	--	--
	Nickel	7.30E-01	N	1.90E+03	Kd d	8	--	--
	Selenium	5.00E-02	M	2.20E+00	Kd d	8	--	--
	Silver	1.83E-01	N	1.10E+02	Kd d	8	--	--
	Strontium	2.19E+01	N	3.50E+01	Kd a	NA	--	--
	Thallium	2.00E-03	M	9.60E+01	Kd d	8	--	--
	Tin	2.19E+01	N	2.50E+02	Kd a	NA	--	--
	Titanium	1.46E+02	--	1.00E+03	Kd a	NA	--	--
	Tungsten	2.74E-01	--	1.50E+02	Kd a	NA	--	--
	Uranium	3.00E-02	M	4.50E+02	Kd a	NA	--	--
Vanadium	1.83E-01	N	1.00E+03	Kd c	NA	--	--	
Zinc	1.10E+01	N	5.30E+02	Kd d	8	--	--	
Perchlorate	Perchlorate	1.80E-02	N	2.80E-07	Kd e	NA	--	--

Notes:

1 - A Site-specific soil pH of 8 was used for chemicals for which published pH-dependent values for Kd are available.
 NA = Not available; Kd not dependent on pH or pH dependence has not been established.

RBGC Key:

Chemicals without a RBGC are not shown.
 M = USEPA Maximum contaminant level (MCL)
 C = LBCL calculated using cancer endpoint (NDEP, 2009)
 N = LBCL calculated using noncancer endpoint (NDEP, 2009)

Kd References:

Kd a - Value from Figure 2.31 of Baes et al., 1984
 Kd b - Value from Table 46 of USEPA, 1996 (at default pH value of 6.8 [page 40 of USEPA, 1996]).
 Kd c - Non-pH dependent value from Exhibit C4, Appendix C, Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites, USEPA, 2002
 (accessed at http://www.epa.gov/superfund/health/conmedia/soil/pdfs/ssg_main.pdf)
 Kd d - Site-specific value (at pH 8.0) from Exhibit C4, Appendix C, Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites, USEPA, 2002
 (accessed at http://www.epa.gov/superfund/health/conmedia/soil/pdfs/ssg_main.pdf)
 Kd e - Value from US EPA, 2005, Superfund Chemical Data Matrix,
 (accessed at http://www.epa.gov/superfund/sites/npl/hrsres/tools/perchlorate_a.pdf)

H' References:

2 = USEPA Soil Screening Guidance: User's Guide, EPA Document Number: EPA540/R-96/018, July 1996., Attachment C, Table C-1, (accessed at <http://www.epa.gov/superfund/health/conmedia/soil/pdfs/attachc.pdf>)
 -- = No Henry's Law value available for this chemical.