

ATTACHMENT D2
TOXICITY VALUES AND EXPOSURE PARAMETERS

THIS PAGE INTENTIONALLY LEFT BLANK

Table D3.1. Toxicity Values and Information Used in Soils OU Risk Analysis

Chemical Abstract Number	Analyte	GI Absorption Factor (Unitless)	Oral RfD (RfDo)	Absorbed Dose (RfDd)	Inhalation (RfCi)	Inhalation (RfDi)	Oral Slope Factor for Water (SFow)	Oral Slope Factor for Soil (SFos)	Absorbed Dose Slope Factor (SFd)	Inhalation Slope Factor (SFi)	External Exposure Slope Factor (SFe)
7429905	Aluminum	1.00E+00	1.00E+00	1.00E+00	5.00E-03	1.43E-03					
7440360	Antimony (metallic)	1.50E-01	4.00E-04	6.00E-05							
7440382	Arsenic, Inorganic	1.00E+00	3.00E-04	3.00E-04	1.50E-05	4.29E-06	1.50E+00	1.50E+00	1.50E+00	1.51E+01	
7440393	Barium	7.00E-02	2.00E-01	1.40E-02	5.00E-04	1.43E-04					
7440417	Beryllium and compounds	7.00E-03	2.00E-03	1.40E-05	2.00E-05	5.71E-06	4.30E+00		6.14E+02	8.40E+00	
7440428	Boron And Borates Only	1.00E+00	2.00E-01	2.00E-01	2.00E-02	5.71E-03					
7440439	Cadmium (Diet)	2.50E-02	1.00E-03	2.50E-05	1.00E-05	2.86E-06	3.80E-01		1.52E+01	6.30E+00	
7440439	Cadmium (Water)	5.00E-02	5.00E-04	2.50E-05	1.00E-05	2.86E-06	3.80E-01		7.60E+00	6.30E+00	
7440473	Chromium (Total)	0.013	1.50E+00	1.95E-02							
7440484	Cobalt	1.00E+00	3.00E-04	3.00E-04	6.00E-06	1.71E-06					
7440508	Copper	1.00E+00	4.00E-02	4.00E-02							
7439896	Iron	1.00E+00	7.00E-01	7.00E-01							
7439965	Manganese (Diet)	1.00E+00	1.40E-01	1.40E-01	5.00E-05	1.43E-05					
7439965	Manganese (Water)	4.00E-02	2.40E-02	9.60E-04	5.00E-05	1.43E-05					
7439976	Mercury, Inorganic Salts	7.00E-02	3.00E-04	2.10E-05							
7439987	Molybdenum	1.00E+00	5.00E-03	5.00E-03	9.00E-05	2.57E-05					
7440020	Nickel Soluble Salts	4.00E-02	2.00E-02	8.00E-04	2.00E-02	5.71E-03					
7782492	Selenium	1.00E+00	5.00E-03	5.00E-03							
7440224	Silver	4.00E-02	5.00E-03	2.00E-04							
7791120	Thallium Chloride	1.00E+00	8.00E-05	8.00E-05							
238	Uranium (Soluble Salts)	1.00E+00	3.00E-03	3.00E-03	3.00E-04	8.57E-05					
7440622	Vanadium, Metallic	2.60E-02	7.00E-05	1.82E-06	1.00E-04	2.86E-05					
7440666	Zinc (Metallic)	1.00E+00	3.00E-01	3.00E-01							
83329	Acenaphthene	1.00E+00	6.00E-02	6.00E-02	2.09E-01	5.97E-02					
208968	Acenaphthylene	1.00E+00									
107131	Acrylonitrile	1.00E+00	4.00E-02	4.00E-02	2.00E-03	5.71E-04	5.40E-01	5.40E-01	5.40E-01	2.38E-01	
120127	Anthracene	1.00E+00	3.00E-01	3.00E-01	1.05E+00	3.00E-01					
71432	Benzene	1.00E+00	4.00E-03	4.00E-03	3.00E-02	8.57E-03					
86748	Carbazole	1.00E+00									
56235	Carbon Tetrachloride	1.00E+00	4.00E-03	4.00E-03	1.00E-01	2.86E-02					
67663	Chloroform	1.00E+00	1.00E-02	1.00E-02	9.77E-02	2.79E-02					
75354	Dichloroethylene, 1,1-	1.00E+00	5.00E-02	5.00E-02	2.00E-01	5.71E-02					
540590	Dichloroethylene, 1,2- (Mixed Isomers)	1.00E+00	9.00E-03	9.00E-03	3.14E-02	8.97E-03					
156592	Dichloroethylene, 1,2-cis-	1.00E+00	2.00E-03	2.00E-03	3.49E-02	9.97E-03					
156605	Dichloroethylene, 1,2-trans-	1.00E+00	2.00E-02	2.00E-02	6.00E-02	1.71E-02					
60571	Dieldrin	1.00E+00	5.00E-05	5.00E-05							
1746016	Dioxins/Furans (Total)	1.00E+00	1.00E-09	1.00E-09	4.00E-08	1.14E-08	1.60E+01	1.60E+01	1.60E+01	1.61E+01	
100414	Ethylbenzene	1.00E+00	1.00E-01	1.00E-01	1.00E+00	2.86E-01	1.30E+05	1.30E+05	1.30E+05	1.33E+05	
206440	Fluoranthene	1.00E+00	4.00E-02	4.00E-02	1.40E-01	4.00E-02	1.10E-02	1.10E-02	1.10E-02	8.75E-03	
86737	Fluorene	1.00E+00	4.00E-02	4.00E-02	1.40E-01	4.00E-02					
118741	Hexachlorobenzene	1.00E+00	8.00E-04	8.00E-04							
37871004	HpCDD, 2,3,7,8-	1.00E+00	1.00E-07	1.00E-07	4.00E-06	1.14E-06	1.60E+00	1.60E+00	1.60E+00	1.61E+00	
3898753	HpCDF, 2,3,7,8-	1.00E+00	1.00E-07	1.00E-07	4.00E-06	1.14E-06	1.30E+03	1.30E+03	1.30E+03	1.33E+03	
34465468	HxCDD, 2,3,7,8-	1.00E+00	1.00E-08	1.00E-08	4.00E-07	1.14E-07	1.30E+04	1.30E+04	1.30E+04	1.33E+04	
55684941	HxCDF, 2,3,7,8-	1.00E+00	1.00E-08	1.00E-08	4.00E-07	1.14E-07	1.30E+04	1.30E+04	1.30E+04	1.33E+04	
91203	Naphthalene	1.00E+00	2.00E-02	2.00E-02	3.00E-03	8.57E-04					
88744	Nitroamine, 2-	1.00E+00	1.00E-02	1.00E-02	5.00E-05	1.43E-05					
621647	Nitroso-di-N-propylamine, N-	1.00E+00					7.00E+00	7.00E+00	7.00E+00	7.00E+00	
3268879	OCDD	1.00E+00	3.33E-06	3.33E-06	1.33E-04	3.80E-05	3.90E+01	3.90E+01	3.90E+01	3.99E+01	

Table D3.1. Toxicity Values and Information Used in Soils OU Risk Analysis (Continued)

Chemical Abstract Number	Analyte	GI Absorption		Absorbed Dose		Inhalation		Oral Slope Factor for Water		Oral Slope Factor for Soil		External Exposure	
		Factor (Unitless)	Oral RfD (RfDo)	Dose (RfDd)	(RfCi)	(RfDi)	Factor (SFow)	Factor (SFos)	Dose Slope Factor (SFd)	Inhalation Slope Factor (SFi)	Slope Factor (SFe)		
39001020	OCDF	1.00E+00	3.33E-06	3.33E-06	1.33E-04	3.80E-05	3.90E+01	3.90E+01	3.99E+01	3.99E+01	3.99E+01	3.99E+01	3.99E+01
36088229	PeCDD, 2,3,7,8-	1.00E+00	1.00E-09	1.00E-09	4.00E-08	1.14E-08	1.30E+05	1.30E+05	1.33E+05	1.33E+05	1.33E+05	1.33E+05	1.33E+05
57117416	PeCDF, 1,2,3,7,8-	1.00E+00	3.33E-08	3.33E-08	1.33E-06	3.80E-07	3.90E+03	3.90E+03	3.99E+03	3.99E+03	3.99E+03	3.99E+03	3.99E+03
57117314	PeCDF, 2,3,4,7,8-	1.00E+00	3.33E-09	3.33E-09	1.33E-07	3.80E-08	3.90E+04	3.90E+04	3.99E+04	3.99E+04	3.99E+04	3.99E+04	3.99E+04
85018	Phenanthrene	1.00E+00											
1336363	Polychlorinated Biphenyls (high risk)	1.00E+00					2.00E+00	2.00E+00	2.00E+00	2.00E+00	2.00E+00	2.00E+00	2.00E+00
1336363	Polychlorinated Biphenyls (low risk)	1.00E+00					4.00E-01	4.00E-01	4.00E-01	4.00E-01	4.00E-01	4.00E-01	4.00E-01
1336363	Polychlorinated Biphenyls (lowest risk)	1.00E+00					7.00E-02	7.00E-02	7.00E-02	7.00E-02	7.00E-02	7.00E-02	7.00E-02
50328	Polynuclear Aromatic Hydrocarbons (Total)	1.00E+00					7.30E+00	7.30E+00	7.30E+00	7.30E+00	7.30E+00	7.30E+00	7.30E+00
129000	Pyrene	1.00E+00	3.00E-02	3.00E-02	1.05E-01	3.00E-02	3.00E+05	3.00E+05	3.00E+05	3.00E+05	3.00E+05	3.00E+05	3.00E+05
1746016	TCDD, 2,3,7,8-	1.00E+00	1.00E-08	1.00E-08	4.00E-07	1.14E-07	1.30E+04	1.30E+04	1.33E+04	1.33E+04	1.33E+04	1.33E+04	1.33E+04
51207319	TCDF, 2,3,7,8-	1.00E+00	1.00E-02	1.00E-02	2.71E-01	7.74E-02	5.40E-01	5.40E-01	5.40E-01	5.40E-01	5.40E-01	5.40E-01	5.40E-01
127184	Tetrachloroethylene	1.00E+00	3.00E-04	3.00E-04	4.00E-02	1.14E-02	3.22E-01	3.22E-01	3.22E-01	3.22E-01	3.22E-01	3.22E-01	3.22E-01
79016	Trichloroethylene	1.00E+00	3.00E-03	3.00E-03	1.00E-01	2.86E-02	7.20E-01	7.20E-01	7.20E-01	7.20E-01	7.20E-01	7.20E-01	7.20E-01
75014	Vinyl Chloride	1.00E+00	2.00E-01	2.00E-01	1.00E-01	2.86E-02							
1330207	Xylene, Mixture	1.00E+00	2.00E-01	2.00E-01	7.00E-01	2.00E-01							
106423	Xylene, P-	1.00E+00	2.00E-01	2.00E-01	7.00E-01	2.00E-01							
108383	Xylene, m-	1.00E+00	2.00E-01	2.00E-01	7.00E-01	2.00E-01							
95476	Xylene, o-	1.00E+00	2.00E-01	2.00E-01	7.00E-01	2.00E-01							
14596102	Am-241	5.00E-04					1.04E-10	1.04E-10	1.04E-10	2.17E-10	2.17E-10	2.81E-08	2.76E-08
10198400	Co-60	1.00E-01					1.57E-11	1.57E-11	1.57E-11	4.03E-11	4.03E-11	3.58E-11	1.24E-05
10045973	Cs-137+D	1.00E+00					3.04E-11	3.04E-11	3.04E-11	4.33E-11	4.33E-11	1.19E-11	2.54E-06
13994202	Np-237+D	5.00E-04					6.74E-11	6.74E-11	6.74E-11	1.62E-10	1.62E-10	1.77E-08	7.96E-07
13981163	Pu-238	5.00E-04					1.31E-10	1.31E-10	1.31E-10	2.72E-10	2.72E-10	3.36E-08	7.22E-11
15117483	Pu-239	5.00E-04					1.35E-10	1.35E-10	1.35E-10	2.76E-10	2.76E-10	3.33E-08	2.00E-10
14119336	Pu-240	5.00E-04					1.35E-10	1.35E-10	1.35E-10	2.77E-10	2.77E-10	3.33E-08	6.98E-11
14133767	Tc-99	5.00E-01					2.75E-12	2.75E-12	2.75E-12	7.66E-12	7.66E-12	1.41E-11	8.14E-11
14269637	Th-230	5.00E-04					9.10E-11	9.10E-11	9.10E-11	2.02E-10	2.02E-10	2.85E-08	8.19E-10
13966295	U-234	2.00E-02					7.07E-11	7.07E-11	7.07E-11	1.58E-10	1.58E-10	1.14E-08	2.52E-10
15117961	U-235+D	2.00E-02					7.18E-11	7.18E-11	7.18E-11	1.63E-10	1.63E-10	1.01E-08	5.43E-07
7440611	U-238+D	2.00E-02					8.71E-11	8.71E-11	8.71E-11	2.10E-10	2.10E-10	9.35E-09	1.14E-07

Table D3.1. Toxicity Values and Information Used in Soils OU Risk Analysis (Continued)

Chemical Abstract Number	Analyte	Volatile Organic?	PEF Res.	PEF Ind./Comm.	VF Res.	VF Ind./Comm.	KY Default ABS (Unitless)	Permeability Constant
7429905	Aluminum		9.30E+08	6.20E+08			0.05	1.00E-03
7440360	Antimony (metallic)		9.30E+08	6.20E+08			0.05	1.00E-03
7440382	Arsenic, Inorganic		9.30E+08	6.20E+08			0.03	1.00E-03
7440393	Barium		9.30E+08	6.20E+08			0.05	1.00E-03
7440417	Beryllium and compounds		9.30E+08	6.20E+08			0.007	1.00E-03
7440428	Boron And Borates Only		9.30E+08	6.20E+08			0.05	1.00E-03
7440439	Cadmium (Diet)		9.30E+08	6.20E+08			0.001	1.00E-03
7440473	Cadmium (Water)		9.30E+08	6.20E+08			0.05	1.00E-03
7440484	Chromium (Total)		9.30E+08	6.20E+08			0.05	4.00E-04
7440508	Cobalt		9.30E+08	6.20E+08			0.05	1.00E-03
7440508	Copper		9.30E+08	6.20E+08			0.05	1.00E-03
7439896	Iron		9.30E+08	6.20E+08			0.05	1.00E-03
7439965	Manganese (Diet)		9.30E+08	6.20E+08			0.05	1.00E-03
7439965	Manganese (Water)		9.30E+08	6.20E+08			0.04	1.00E-03
7439976	Mercury, Inorganic Salts		9.30E+08	6.20E+08	3.10E+04	2.08E+04	0.05	1.00E-03
7439987	Molybdenum		9.30E+08	6.20E+08			0.05	1.00E-03
7440020	Nickel Soluble Salts		9.30E+08	6.20E+08			0.04	2.00E-04
7782492	Selenium		9.30E+08	6.20E+08			0.05	1.00E-03
7440224	Silver		9.30E+08	6.20E+08			0.04	6.00E-04
7791120	Thallium Chloride		9.30E+08	6.20E+08			0.05	1.00E-03
238	Uranium (Soluble Salts)		9.30E+08	6.20E+08			0.05	1.00E-03
7440622	Vanadium, Metallic		9.30E+08	6.20E+08			0.026	1.00E-03
7440666	Zinc (Metallic)		9.30E+08	6.20E+08			0.05	6.00E-04
83329	Acenaphthene	YES	9.30E+08	6.20E+08	8.38E+04	5.62E+04	0.13	8.60E-02
208968	Acenaphthylene	YES	9.30E+08	6.20E+08	1.13E+05	7.57E+04	0.25	9.11E-02
107131	Acrylonitrile	YES	9.30E+08	6.20E+08	6.95E+03	4.66E+03	0.25	1.16E-03
120127	Anthracene	YES	9.30E+08	6.20E+08	3.11E+05	2.09E+05	0.13	1.42E-01
71432	Benzene	YES	9.30E+08	6.20E+08	2.37E+03	1.59E+03	0.25	1.49E-02
86748	Carbazole	YES	9.30E+08	6.20E+08	2.00E+06	1.34E+06	0.11	5.36E-02
56235	Carbon Tetrachloride	YES	9.30E+08	6.20E+08	1.28E+03	8.57E+02	0.25	1.63E-02
67663	Chloroform	YES	9.30E+08	6.20E+08	2.09E+03	1.40E+03	0.25	6.83E-03
75354	Dichloroethylene, 1,1-	YES	9.30E+08	6.20E+08	1.02E+03	6.84E+02	0.25	1.17E-02
540590	Dichloroethylene, 1,2- (Mixed Isomers)	YES	9.30E+08	6.20E+08	1.92E+03	1.29E+03	0.25	1.10E-02
156592	Dichloroethylene, 1,2-cis-	YES	9.30E+08	6.20E+08	1.94E+03	1.30E+03	0.25	1.10E-02
156605	Dichloroethylene, 1,2-trans-	YES	9.30E+08	6.20E+08	1.95E+03	1.31E+03	0.25	1.10E-02
60571	Dieldrin	YES	9.30E+08	6.20E+08	1.36E+06	9.16E+05	0.11	3.26E-02
1746016	Dioxins/Furans (Total)	YES	9.30E+08	6.20E+08	1.61E+06	1.08E+06	0.03	8.08E-01
100414	Ethylbenzene	YES	9.30E+08	6.20E+08	3.55E+03	2.38E+03	0.25	4.93E-02
206440	Fluoranthene	YES	9.30E+08	6.20E+08	1.58E+06	1.06E+06	0.13	3.08E-01
86737	Fluorene	YES	9.30E+08	6.20E+08	1.67E+05	1.12E+05	0.13	1.10E-01
118741	Hexachlorobenzene		9.30E+08	6.20E+08	2.96E+04	1.99E+04	0.11	2.54E-01
37871004	HpCDD, 2,3,7,8-		9.30E+08	6.20E+08			0.03	1.81E+00
38998753	HpCDF, 2,3,7,8-		9.30E+08	6.20E+08			0.11	1.45E+00
34465468	HxCDD, 2,3,7,8-		9.30E+08	6.20E+08			0.03	2.86E+00
55684941	HxCDF, 2,3,7,8-		9.30E+08	6.20E+08			0.11	1.35E+00
91203	Naphthalene	YES	9.30E+08	6.20E+08	2.77E+04	1.86E+04	0.25	4.66E-02
88744	Nitroamine, 2-		9.30E+08	6.20E+08	2.68E+05	1.80E+05	0.11	4.46E-03
621647	Nitroso-di-N-propylamine, N-		9.30E+08	6.20E+08	1.13E+05	7.60E+04	0.11	2.33E-03
3268879	OCDD		9.30E+08	6.20E+08			0.03	1.16E+00

Table D3.1. Toxicity Values and Information Used in Soils OU Risk Analysis (Continued)

Chemical Abstract Number	Analyte	Volatile Organic?	PEF Res.	PEF Ind./Comm.	VF Res.	VF Ind./Comm.	KY Default ABS (Unitless)	Permeability Constant
39001020	OCDF		9.30E+08	6.20E+08			0.1	2.63E+00
36088229	PeCDD, 2,3,7,8-		9.30E+08	6.20E+08			0.03	2.41E-01
57117416	PeCDF, 1,2,3,7,8-		9.30E+08	6.20E+08			0.1	6.27E-01
57117314	PeCDF, 2,3,4,7,8-		9.30E+08	6.20E+08			0.1	6.27E-01
85018	Phenanthrene	YES	9.30E+08	6.20E+08	3.82E+05	2.56E+05	0.25	1.44E-01
1336363	Polychlorinated Biphenyls (high risk)		9.30E+08	6.20E+08	5.48E+05	3.68E+05	0.14	5.45E-01
1336363	Polychlorinated Biphenyls (low risk)		9.30E+08	6.20E+08	5.48E+05	3.68E+05	0.14	5.45E-01
1336363	Polychlorinated Biphenyls (lowest risk)		9.30E+08	6.20E+08	5.48E+05	3.68E+05	0.14	5.45E-01
50328	Polynuclear Aromatic Hydrocarbons (Total)		9.30E+08	6.20E+08	1.27E+07	8.50E+06	0.13	2.01E-01
129000	Pyrene	YES	9.30E+08	6.20E+08	1.41E+06	9.45E+05	0.13	8.08E-01
1746016	TCDD, 2,3,7,8-		9.30E+08	6.20E+08	1.61E+06	1.08E+06	0.03	6.57E-01
51207319	TCDF, 2,3,7,8-		9.30E+08	6.20E+08			0.1	3.34E-02
127184	Tetrachloroethylene	YES	9.30E+08	6.20E+08	1.75E+03	1.17E+03	0.25	1.16E-02
79016	Trichloroethylene	YES	9.30E+08	6.20E+08	1.68E+03	1.13E+03	0.25	8.38E-03
75014	Vinyl Chloride	YES	9.30E+08	6.20E+08	8.77E+02	5.89E+02	0.25	4.71E-02
1330207	Xylene, Mixture	YES	9.30E+08	6.20E+08	3.65E+03	2.45E+03	0.25	4.93E-02
106423	Xylene, P-	YES	9.30E+08	6.20E+08	3.52E+03	2.36E+03	0.25	5.32E-02
108383	Xylene, m-	YES	9.30E+08	6.20E+08	3.44E+03	2.31E+03	0.25	4.71E-02
95476	Xylene, o-	YES	9.30E+08	6.20E+08	4.04E+03	2.71E+03	0.25	4.71E-02
14596102	Am-241		9.30E+08	6.20E+08				
10198400	Co-60		9.30E+08	6.20E+08				
10045973	Cs-137+D		9.30E+08	6.20E+08				
13994202	Np-237+D		9.30E+08	6.20E+08				
13981163	Pu-238		9.30E+08	6.20E+08				
15117483	Pu-239		9.30E+08	6.20E+08				
14119336	Pu-240		9.30E+08	6.20E+08				
14133767	Tc-99		9.30E+08	6.20E+08				
14269637	Th-230		9.30E+08	6.20E+08				
13966295	U-234		9.30E+08	6.20E+08				
15117961	U-235+D		9.30E+08	6.20E+08				
7440611	U-238+D		9.30E+08	6.20E+08				