

Table 5-1 Tier 1 and Tier 2 Pathway Specific Soil Criteria for Agricultural Land Use (mg/kg) with Potable Groundwater Conditions

Receptor	Tier 1 Criteria		Human Health - Pathway Specific Criteria									Ecological Health - Pathway Specific Criteria									Other Criteria			
	Lowest of all Tier 1 Pathways		Soil Contact / Ingestion			Inhalation of Indoor Air (Slab on Grade Construction)			Soil Leaching - Protection of Potable Groundwater			Direct Soil Contact - Protection of Plants and Soil Invertebrates -			Soil ad Food Ingestion - Protection of Wildlife (Birds and Mammals)			Soil Leaching - Protection of Aquatic Life			Management Limits			
	Parameter	Fine	Coarse	Fine	Coarse	Reference	Fine	Coarse	Reference	Fine	Coarse	Reference	Fine	Coarse	Reference	Fine	Coarse	Reference	Fine	Coarse	Reference	Fine	Coarse	Reference
1,1,1-Trichloroethane	3.4	0.38	42,000	42,000	OMOE 2011	3.4	0.38	OMOE 2011	27	20	OMOE 2011	22	18	OMOE 2011	820	820	OMOE 2011	12	9.8	OMOE 2011	-	-	-	
1,1,2-Trichloroethane	0.18	0.30	140	140	OMOE 2011[4]	0.18	0.3	OMOE 2011 [4]	0.73	0.54	OMOE 2011	100	80	OMOE 2011	-	-	OMOE 2011	150	120	OMOE 2011	-	-	-	
Trichloroethylene	0.01	0.01	28	28	CCME 2006	3.7	0.36	CCME 2006 [4]	0.01	0.01	CCME 2006	3	3	CCME 2006	8.1	8.1	OMOE 2011	-	-	-	-	-	-	
Vinyl Chloride	0.008	0.00034	71	71	AEP 2019	0.0083	0.00034	AEP 2019	0.014	0.02	AEP 2019	4.3	3.4	OMOE 2011[4]	6.8	6.8	OMOE 2011	380	270	OMOE 2011	-	-	-	
Chlorinated Aromatic Volatile Organic Compounds (VOC)																								
Chlorobenzene	0.39	0.018	16,000	16,000	AEP 2019	0.39	0.018	AEP 2019	0.61	1.1	AEP 2019	7.5	6.0	OMOE 2011	-	-	-	BDL	BDL	AEP 2019	-	-	-	
1,2-Dichlorobenzene	0.097	0.180	16,000	16,000	AEP 2019	230	10	AEP 2019	0.097	0.18	AEP 2019	4.3	3.4	OMOE 2011	-	-	-	BDL	BDL	AEP 2019	-	-	-	
1,4-Dichlorobenzene	0.051	0.098	4,200	4,200	AEP 2019	14	0.67	AEP 2019	0.051	0.098	AEP 2019	4.5	3.6	OMOE 2011	-	-	-	0.32	0.38	AEP 2019	-	-	-	
1,2,3-Trichlorobenzene	0.26	0.26	49	49	AEP 2019	6.8	0.26	AEP 2019	1.9	3.6	AEP 2019	-	-	-	-	-	-	0.26	0.31	AEP 2019	-	-	-	
1,2,4-Trichlorobenzene	0.78	0.23	38	38	AEP 2019	6	0.23	AEP 2019	2	3.9	AEP 2019	16.0	13.0	OMOE 2011	-	-	-	0.78	0.93	AEP 2019	-	-	-	
1,3,5-Trichlorobenzene	1.9	0.13	46	46	AEP 2019	3.2	0.13	AEP 2019	1.9	3.6	AEP 2019	-	-	-	-	-	-	-	-	AEP 2019	-	-	-	
1,2,3,4-Tetrachlorobenzene	0.042	0.05	75	75	AEP 2019	20	0.84	AEP 2019	3.1	5.9	AEP 2019	-	-	-	-	-	-	0.042	0.05	AEP 2019	-	-	-	
1,2,3,5-Tetrachlorobenzene	0.37	0.1	8.8	8.8	AEP 2019	2.5	0.1	AEP 2019	0.37	0.7	AEP 2019	-	-	-	-	-	-	-	-	AEP 2019	-	-	-	
1,2,4,5-Tetrachlorobenzene	0.19	0.052	4.6	4.6	AEP 2019	1.3	0.052	AEP 2019	0.19	0.37	AEP 2019	-	-	-	-	-	-	-	-	AEP 2019	-	-	-	
Pentachlorobenzene	22	5.2	22	22	AEP 2019	140	6	AEP 2019	24	47	AEP 2019	-	-	-	-	-	-	NGR	5.2	AEP 2019	-	-	-	
Hexachlorobenzene	3.6	0.5	18	18	AEP 2019	12	0.5	AEP 2019	3.6	7	AEP 2019	-	-	-	-	-	-	-	-	AEP 2019	-	-	-	
2,4-Dichlorophenol	0.003	0.003	2,200	2,200	AEP 2019	140,000	5,400	AEP 2019	0.018	0.034	AEP 2019	2.1	1.7	OMOE 2011	-	-	-	0.0029	0.0034	AEP 2019	-	-	-	
2,4,6-Trichlorophenol	0.19	0.37	260	260	AEP 2019	8,200	320	AEP 2019	0.19	0.37	AEP 2019	5.5	4.4	OMOE 2011	-	-	-	0.42	0.5	AEP 2019	-	-	-	
2,3,4,6-Tetrachlorophenol	0.039	0.047	220	220	AEP 2019	11,000	460	AEP 2019	0.16	0.32	AEP 2019	-	-	-	-	-	-	0.039	0.047	AEP 2019	-	-	-	
Pentachlorophenol (PCP)	0.025	0.029	230	230	AEP 2019	NGR	83,000	AEP 2019	6	12	AEP 2019	11.0	11.0	AEP, 2019	-	-	-	0.025	0.029	AEP 2019	-	-	-	
Per- and Polyfluoroalkyl Substances (PFAS)																								
Perfluorooctanoic acid (PFOA)	0.7	0.7	0.7	0.7	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Perfluorooctane sulfonate (PFOS)	0.01	0.01	2	2	CCME 2021	-	-	-	0.01	0.01	CCME 2021	10	10	CCME 2021	0.01	0.01	CCME 2021	0.1	0.2	CCME 2021	-	-	-	
Perfluorobutanoate (PFBA)	114	114	114	114	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Perfluorobutane sulfonate (PFBS)	61	61	61	61	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Perfluorohexanesulfonate (PFHxS)	2.3	2.3	2.3	2.3	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Perfluoropentanoate (PFPeA)	0.8	0.8	0.8	0.8	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Perfluorohexanoate (PFHxA)	0.8	0.8	0.8	0.8	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Perfluoroheptanoate (PFHpA)	0.8	0.8	0.8	0.8	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
perfluorooxanoate (PFNA)	0.08	0.08	0.08	0.08	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6:2 fluorotelomer sulfonate	0.8	0.8	0.8	0.8	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8:2 fluorotelomer sulfonate	0.8	0.8	0.8	0.8	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other Parameters																								
Polychlorinated Biphenyl (Total PCB)	1.3	1.3	22	22	AEP, 2019	190	31	OMOE 2011 [4]	1,100	770	OMOE 2011	33	33	CCME, 1999	1.3	1.3	CCME 1999	-	-	-	-	-	-	-
Dioxins and Furans (TEQ) (mg TEQ/kg)	0.000004	0.000004	0.000004	0.000004	CCME 2002	0.017	0.0028	OMOE 2011	0.0026	0.0018	OMOE 2011	0.000013	0.000013	OMOE 2011	-	-	CCME 1999	870	780	OMOE 2011	-	-	-	
Ethylene Glycol	60	68	73,000	73,000	AEP 2019	NGR	86,000	AEP 2019	60	68	AEP 2019	1100	1100	AEP, 2019	-	-	-	-	-	-	-	-	-	-
Phenol	3.8	3.8	1,900	1,900	CCME 1997	500	500	CCME 1997	3.8	3.8	CCME 1997	20	20	CCME 1997	9.4	9.4	OMOE 2011	53	46	OMOE 2011	-	-	-	

- Notes:
- [1] All values in mg/kg
 - [2] "-" = No guideline available or no guideline required; >RES means no soil criteria are shown as residual soil saturation limits may be exceeded; IACR means the Index of Additive Cancer Risk
 - [3] For the purposes of screening human health effects from exposure to sediment, dry weight values should be evaluated against the soil quality standards for Soil Contact/Ingestion only.
 - [4] Value has been adjusted to reflect 10-05 Target Risk
 - [5] Original Agency Value has been divided by 5
 - [6] Benzo(a)pyrene, BaP, Total Potency Equivalents are to be calculated following methodology shown in "Canadian Council of Ministers of the Environment, 2010 Canadian soil quality guidelines for the protection of environmental and human health: Carcinogenic and Other PAHs."
 - [7] Dioxins and Furans TEQ, Toxic Equivalents, are to be calculated following methodology shown in "Canadian Council of Ministers of the Environment, 2002. Canadian soil quality guidelines for the protection of environmental and human health: Dioxins and Furans"
 - [8] When PFOS and PFOA are found together in soil or groundwater it is recommended that both chemicals be considered together when comparing to screening values. Refer to Health Canada 2017b for specific guidance on calculating PFOS/PFOA ratios.
 - [9] CCME 1997 = CCME SQG Factsheet Series including arsenic, chromium, cyanide, phenol, tetrachloroethylene
 - [10] CCME 1999 = CCME SQG Factsheet Series including cadmium, copper, lead, mercury, PCB, thallium
 - [11] CCME 2002 = CCME SQG Factsheet for dioxins/furans
 - [12] CCME 2004 = CCME SQG Factsheet series for benzene, ethylbenzene, toluene and xylenes
 - [13] CCME 2006 = CCME SQG Factsheet for trichloroethylene
 - [14] CCME 2007 = CCME SQG Factsheet for Uranium
 - [15] CCME 2008 = CCME CWS for Petroleum Hydrocarbons in Soil: Technical Supplement
 - [16] CCME 2010 = CCME SQG Factsheet for Polycyclic Aromatic Hydrocarbons
 - [17] CCME 2015 = CCME SQG Factsheet for Nickel
 - [18] CCME 2018 = CCME SQG Factsheet for Zinc
 - [19] CCME 2021 = CCME SQG Factsheet for PFOS

Table 5-3 Tier 1 and Tier 2 Pathway Specific Soil Criteria for Residential Land Use (mg/kg) with Potable Groundwater Conditions

Land Use / Receptor	Tier 1 Criteria		Human Health									Ecological Health - Pathway Specific Criteria									Other Criteria			
	Lowest of all Tier 1 Pathways		Soil Contact / Ingestion			Inhalation of Indoor Air (Slab-on-Grade Construction)			Soil Leaching - Protection of Potable Groundwater			Direct Soil Contact - Protection of Plants and Soil Invertebrates -			Soil ad Food Ingestion - Protection of Wildlife (Birds and Mammals)			Soil Leaching - Protection of Aquatic Life			Management Limits			
	Parameter	Fine	Coarse	Fine	Coarse	Reference	Fine	Coarse	Reference	Fine	Coarse	Reference	Fine	Coarse	Reference	Fine	Coarse	Reference	Fine	Coarse	Reference	Fine	Coarse	Reference
Tetrachloroethylene	0.2	0.2	250	250	BCMOE 2021	0.2	0.2	CCME 1997	1.6	1.6	CCME 1997	15	15	BCMOE 2021	4.5	4.5	OMOE 2011	6	6	CCME 1997	-	-	-	
1,1,1-Trichloroethane	3.400	0.38	42,000	42,000	OMOE 2011	3.4	0.38	OMOE 2011	27	20	OMOE 2011	22	18	OMOE 2011	820	820	OMOE 2011	12	9.8	OMOE 2011	-	-	-	
1,1,2-Trichloroethane	0.18	0.300	140	140	OMOE 2011[4]	0.18	0.3	OMOE 2011 [4]	0.73	0.54	OMOE 2011	100	80	OMOE 2011	-	-	OMOE 2011	150	120	OMOE 2011	-	-	-	
Trichloroethylene	0.01	0.01	28	28	CCME 2006	3.7	0.36	CCME 2006 [4]	0.01	0.01	CCME, 2006	3	3	CCME 2006	8.1	8.1	OMOE 2011	300	300	OMOE 2011	-	-	-	
Vinyl Chloride	0.0083	0.00034	71	71	AEP 2019	0.0083	0.00034	AEP 2019	0.014	0.02	AEP 2019	4.3	3.4	OMOE 2011[4]	6.8	6.8	OMOE 2011	380	270	OMOE 2011	-	-	-	
Chlorinated Aromatic Volatile Organic Compounds (VOC)																								
Chlorobenzene	0.390	0.018	16,000	16,000	AEP 2019	0.39	0.018	AEP 2019	0.61	1.1	AEP 2019	7.5	6.0	OMOE 2011	-	-	-	BDL	BDL	AEP 2019	-	-	-	
1,2-Dichlorobenzene	0.097	0.180	16,000	16,000	AEP 2019	230	10	AEP 2019	0.097	0.18	AEP 2019	4.3	3.4	OMOE 2011	-	-	-	BDL	BDL	AEP 2019	-	-	-	
1,4-Dichlorobenzene	0.051	0.098	4,200	4,200	AEP 2019	14	0.67	AEP 2019	0.051	0.098	AEP 2019	4.5	3.6	OMOE 2011	-	-	-	0.32	0.38	AEP 2019	-	-	-	
1,2,3-Trichlorobenzene	0.26	0.26	49	49	AEP 2019	6.8	0.26	AEP 2019	1.9	3.6	AEP 2019	-	-	-	-	-	-	0.26	0.31	AEP 2019	-	-	-	
1,2,4-Trichlorobenzene	0.78	0.23	38	38	AEP 2019	6	0.23	AEP 2019	2	3.9	AEP 2019	16.0	13.0	OMOE 2011	-	-	-	0.78	0.93	AEP 2019	-	-	-	
1,3,5-Trichlorobenzene	1.9	0.13	46	46	AEP 2019	3.2	0.13	AEP 2019	1.9	3.6	AEP 2019	-	-	-	-	-	-	-	-	AEP 2019	-	-	-	
1,2,3,4-Tetrachlorobenzene	0.042	0.05	75	75	AEP 2019	20	0.84	AEP 2019	3.1	5.9	AEP 2019	-	-	-	-	-	-	0.042	0.05	AEP 2019	-	-	-	
1,2,3,5-Tetrachlorobenzene	0.370	0.1	8.8	8.8	AEP 2019	2.5	0.1	AEP 2019	0.37	0.7	AEP 2019	-	-	-	-	-	-	-	-	AEP 2019	-	-	-	
1,2,4,5-Tetrachlorobenzene	0.19	0.052	4.6	4.6	AEP 2019	1.3	0.052	AEP 2019	0.19	0.37	AEP 2019	-	-	-	-	-	-	-	-	AEP 2019	-	-	-	
Pentachlorobenzene	22.000	5.2	22	22	AEP 2019	140	6.1	AEP 2019	24	47	AEP 2019	-	-	-	-	-	-	NGR	5.2	AEP 2019	-	-	-	
Hexachlorobenzene	3.6	0.5	18	18	AEP 2019	12	0.5	AEP 2019	3.6	7	AEP 2019	-	-	-	-	-	-	-	-	AEP 2019	-	-	-	
2,4-Dichlorophenol	0.003	0.003	2,200	2,200	AEP 2019	140000	5400	AEP 2019	0.018	0.034	AEP 2019	2.1	1.7	OMOE 2011	-	-	-	0.0029	0.0034	AEP 2019	-	-	-	
2,4,6-Trichlorophenol	0.19	0.37	260	260	AEP 2019	8200	320	AEP 2019	0.19	0.37	AEP 2019	5.5	4.4	OMOE 2011	-	-	-	0.42	0.5	AEP 2019	-	-	-	
2,3,4,6-Tetrachlorophenol	0.039	0.047	220	220	AEP 2019	11000	460	AEP 2019	0.16	0.32	AEP 2019	-	-	-	-	-	-	0.039	0.047	AEP 2019	-	-	-	
Pentachlorophenol (PCP)	0.025	0.029	230	230	AEP 2019	NGR	83000	AEP 2019	6	12	AEP 2019	11.0	11.0	AEP, 2019	-	-	-	0.025	0.029	AEP 2019	-	-	-	
Per- and Polyfluoroalkyl Substances (PFAS)																								
Perfluorooctanoic acid (PFOA)	0.7	0.7	0.7	0.7	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonate (PFOS)	0.01	0.01	2	2	CCME 2021	-	-	-	0.01	0.01	CCME 2021	10	10	CCME 2021	0.01	0.01	CCME 2021	0.1	0.2	CCME 2021	-	-	-	
Perfluorobutanoate (PFBA)	114	114	114	114	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Perfluorobutane sulfonate (PFBS)	61	61	61	61	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Perfluorohexanesulfonate (PFHxS)	2.3	2.3	2.3	2.3	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Perfluoropentanoate (PFPeA)	0.8	0.8	0.8	0.8	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Perfluorohexanoate (PFHxA)	0.8	0.8	0.8	0.8	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Perfluoroheptanoate (PFHpA)	0.8	0.8	0.8	0.8	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
perfluorooxanoate (PFNA)	0.08	0.08	0.08	0.08	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6:2 fluorotelomer sulfonate	0.8	0.8	0.8	0.8	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8:2 fluorotelomer sulfonate	0.8	0.8	0.8	0.8	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other Parameters																								
Polychlorinated Biphenyl (Total PCB)	1	1.300	22	22	AEP, 2019	190	31	OMOE 2011 [4]	1,100	770	OMOE 2011	33	33	CCME, 1999	1.3	1.3	CCME 1999	-	-	-	-	-	-	
Dioxins and Furans (TEQ) (mg TEQ/kg)	0.000004	0.000004	0.000004	0.000004	CCME 2002	0.017	0.0028	OMOE, 2011	0.0026	0.0018	OMOE 2011	0.000013	0.000013	OMOE 2011	-	-	CCME 1999	870	780	OMOE 2011	-	-	-	
Ethylene Glycol	60	68	73,000	73,000	AEP 2019	NGR	86,000	AEP 2019	60	68	AEP 2019	1,100	1,100	AEP, 2019	-	-	-	-	-	-	-	-	-	
Phenol	3.8	3.8	1,900	1,900	CCME 1997	500	500	CCME 1997	3.8	3.8	CCME 1997	20	20	CCME 1997	9.4	9.4	OMOE 2011	53	46	OMOE 2011	-	-	-	

Notes:

- [1] All values in mg/kg
- [2] "-" = No guideline available or no guideline required; >RES means no soil criteria are shown as residual soil saturation limits may be exceeded; IACR means the Index of Additive Cancer Risk
- [3] For the purposes of screening human health effects from exposure to sediment, dry weight values should be evaluated against the soil quality standards for Soil Contact/Ingestion only.
- [4] Value has been adjusted to reflect 10-05 Target Risk
- [5] Original Agency Value has been divided by 5
- [6] Benzo(a)pyrene, BaP, Total Potency Equivalents are to be calculated following methodology shown in "Canadian Council of Ministers of the Environment, 2010 Canadian soil quality guidelines for the protection of environmental and human health: Carcinogenic and Other PAHs."
- [7] Dioxins and Furans TEQ, Toxic Equivalents, are to be calculated following methodology shown in " Canadian Council of Ministers of the Environment. 2002. Canadian soil quality guidelines for the protection of environmental and human health: Dioxins and Furans"
- [8] When PFOS and PFOA are found together in soil or groundwater it is recommended that both chemicals be considered together when comparing to screening values. Refer to Health Canada 2017b for specific guidance on calculating PFOS/PFOA ratios.
- [9] CCME 1997 = CCME SQG Factsheet Series including arsenic, chromium, cyanide, phenol, tetrachloroethylene
- [10] CCME 1999 = CCME SQG Factsheet Series including cadmium, copper, lead, mercury, PCB, thallium
- [11] CCME 2002 = CCME SQG Factsheet for dioxin/furan
- [12] CCME 2004 = CCME SQG Factsheet series for benzene, ethylbenzene, toluene and xylenes
- [12] CCME 2006 = CCME SQG factsheet for trichloroethylene
- [13] CCME 2007 = CCME SQG Factsheet for Uranium
- [14] CCME 2008 = CCME CWS for Petroleum Hydrocarbons
- [15] CCME 2010 = CCME SQG Factsheet for Polycyclic Aromatic Hydrocarbons
- [16] CCME 2015 = CCME Factsheet for Nickel
- [17] CCME 2018 = CCME SQG Factsheet for zinc
- [18] CCME 2021 = CCME SQG Factsheet for PFOS

Table 5-5 Tier 1 and Tier 2 Pathway Specific Soil Criteria for Commercial Land Use (mg/kg) with Potable Groundwater Conditions

Land Use / Receptor	Tier 1 Criteria		Human Health									Ecological Health - Pathway Specific Criteria									Other Criteria						
	Lowest of all Tier 1 Pathways		Soil Contact / Ingestion			Inhalation of Indoor Air (Slab-on-Grade Construction)			Soil Leaching - Protection of Potable Groundwater			Offsite Migration Check			Direct Soil Contact - Protection of Plants and Soil Invertebrates -			Soil ad Food Ingestion - Protection of Wildlife (Birds and Mammals)			Soil Leaching - Protection of Aquatic Life			Management Limits			
	Parameter	Fine	Coarse	Fine	Coarse	Reference	Fine	Coarse	Reference	Fine	Coarse	Reference	Fine	Coarse	Reference	Fine	Coarse	Reference	Fine	Coarse	Reference	Fine	Coarse	Reference	Fine	Coarse	Reference
1,2-Dichlorobenzene	0.097	0.18	25,000	25,000	AEP 2019	1700	130	AEP 2019	0.097	0.18	AEP 2019	230,000	230,000	AEP 2019	8.5	6.8	OMOE 2011	-	-	OMOE 2011	60	60	OMOE 2011	-	-	-	
1,4-Dichlorobenzene	0.051	0.098	6,200	6,200	AEP 2019	100	8	AEP 2019	0.051	0.098	AEP 2019	59,000	59,000	AEP 2019	9	7.2	OMOE 2011	-	-	OMOE 2011	0.32	0.38	AEP 2019	-	-	-	
1,2,3-Trichlorobenzene	0.26	0.31	74	74	AEP 2019	58	2.7	AEP 2019	1.9	3.6	AEP 2019	700	700	AEP 2019	-	-	OMOE 2011	-	-	OMOE 2011	0.26	0.31	AEP 2019	-	-	-	
1,2,4-Trichlorobenzene	0.78	0.93	58	58	AEP 2019	51	2.4	AEP 2019	2	3.9	AEP 2019	540	540	AEP 2019	30	30	OMOE 2011	-	-	OMOE 2011	0.78	0.93	AEP 2019	-	-	-	
1,3,5-Trichlorobenzene	1.9	1.3	69	69	AEP 2019	27	1.3	AEP 2019	1.9	3.6	AEP 2019	660	660	AEP 2019	-	-	OMOE 2011	-	-	OMOE 2011	-	-	OMOE 2011	-	-	-	
1,2,3,4-Tetrachlorobenzene	0.042	0.05	110	110	AEP 2019	190	7.9	AEP 2019	3.1	5.9	AEP 2019	1,100	1,100	AEP 2019	-	-	OMOE 2011	-	-	OMOE 2011	0.042	0.05	AEP 2019	-	-	-	
1,2,3,5-Tetrachlorobenzene	0.370	0.7	14	14	AEP 2019	23	1	AEP 2019	0.37	0.7	AEP 2019	130	130	AEP 2019	-	-	OMOE 2011	-	-	OMOE 2011	-	-	OMOE 2011	-	-	-	
1,2,4,5-Tetrachlorobenzene	0.19	0.37	7	7	AEP 2019	12	0.49	AEP 2019	0.19	0.37	AEP 2019	66	66	AEP 2019	-	-	OMOE 2011	-	-	OMOE 2011	-	-	OMOE 2011	-	-	-	
Pentachlorobenzene	24.0	5.2	34	34	AEP 2019	1000	70	AEP 2019	24	47	AEP 2019	320	320	AEP 2019	-	-	OMOE 2011	-	-	OMOE 2011	NGR	5.2	AEP 2019	-	-	-	
Hexachlorobenzene	3.6	6	27	27	AEP 2019	85	6	AEP 2019	3.6	7	AEP 2019	260	260	AEP 2019	-	-	OMOE 2011	-	-	OMOE 2011	25	14	OMOE 2011	-	-	-	
2,4-Dichlorophenol	0.003	0.003	3,300	3,300	AEP 2019	NGR	57,000	AEP 2019	0.018	0.034	AEP 2019	31,000	31,000	AEP 2019	4.2	3.4	OMOE 2011	-	-	OMOE 2011	0.0029	0.0034	AEP 2019	-	-	-	
2,4,6-Trichlorophenol	0.19	0.37	400	400	AEP 2019	71,000	3,300	AEP 2019	0.19	0.37	AEP 2019	3,700	3,700	AEP 2019	10	10	OMOE 2011	-	-	OMOE 2011	0.42	0.5	AEP 2019	-	-	-	
2,3,4,6-Tetrachlorophenol	0.039	0.047	340	340	AEP 2019	110,000	4,400	AEP 2019	0.16	0.31	AEP 2019	3,000	3,000	AEP 2019	-	-	OMOE 2011	-	-	OMOE 2011	0.039	0.047	AEP 2019	-	-	-	
Pentachlorophenol (PCP)	0.025	0.029	340	340	AEP 2019	NGR	950000	AEP 2019	6	12	AEP 2019	3200	3200	AEP 2019	39	31	OMOE 2011	2,000	2,000	OMOE 2011	0.025	0.029	AEP 2019	-	-	-	
Per- and Polyfluoroalkyl Substances (PFAS)																											
Perfluorooctanoic acid (PFOA)	1.05	1.05	1.05	1.05	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonate (PFOS)	0.10	0.10	3	3	CCME 2021	-	-	-	0.1	0.1	CCME 2021	0.1	0.1	CCME 2021	60	60	CCME 2021	-	-	CCME 2021	0.1	0.2	CCME 2021	-	-	-	
Perfluorobutanoate (PFBA)	173.00	173.00	173	173	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Perfluorobutane sulfonate (PFBS)	92.00	92.00	92	92	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Perfluorohexanesulfonate (PFHxS)	3.50	3.50	3.5	3.5	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Perfluoropentanoate (PFPeA)	1.21	1.21	1.21	1.21	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Perfluorohexanoate (PFHxA)	1.21	0.00	1.21	1.21	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Perfluoroheptanoate (PFHpA)	1.21	1.21	1.21	1.21	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
perfluorononanoate (PFNA)	0.13	0.13	0.13	0.13	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6:2 fluorotelomer sulfonate	1.21	1.21	1.21	1.21	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8:2 fluorotelomer sulfonate	1.21	1.20	1.21	1.2	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other Parameters																											
Polychlorinated Biphenyl (Total PCB)	1	1	33	33	AEP 2019	2,300	450	OMOE 2011[4]	1,100	770	OMOE 2011	310	310	AEP 2019	33	33	CCME 1999	1.1	1.1	OMOE 2011	-	-	-	-	-	-	
Dioxins and Furans (TEQ) (mg TEQ/kg)	0	0	0.000004	0.000004	CCME 2002	0.21	0.043	OMOE 2011	0.0026	0.0018	OMOE 2011	0.000004	0.000004	CCME 2002	0.0025	0.0025	DECCS Schedu	0.000099	0.0000099	OMOE 2011	870	780	OMOE 2011	-	-	-	
Ethylene Glycol	60	62	110,000	110,000	AEP 2019	NGR	NGR	AEP 2019	60	68	AEP 2019	16,000	16,000	AEP 2019	1,800	1,800	AEP 2019	-	-	-	89	62	AEP 2019	-	-	-	
Phenol	0	0	7,000	7,000	CCME 1997	1,800	1,800	CCME 1997	3.8	3.8	CCME 1997	28,000	28,000	CCME 1997	128	128	CCME 1997	0.007	0.007	CCME 1997	-	-	-	-	-	-	

- Notes:
- [1] All values in mg/kg
 - [2] "-" = No guideline available or no guideline required; >RES means no soil criteria are shown as residual soil saturation limits may be exceeded; IACR means the Index of Additive Cancer Risk
 - [3] For the purposes of screening human health effects from exposure to sediment, dry weight values should be evaluated against the soil quality standards for Soil Contact/Ingestion only.
 - [4] Value has been adjusted to reflect 10-05 Target Risk
 - [5] Original Agency Value has been divided by 5.
 - [6] Benzo(a)pyrene, BaP, Total Potency Equivalents are to be calculated following methodology shown in "Canadian Council of Ministers of the Environment, 2010 Canadian soil quality guidelines for the protection of environmental and human health: Carcinogenic and Other PAHs."
 - [7] Dioxins and Furans TEQ, Toxic Equivalents, are to be calculated following methodology shown in "Canadian Council of Ministers of the Environment, 2002. Canadian soil quality guidelines for the protection of environmental and human health: Dioxins and Furans"
 - [8] When PFOS and PFOA are found together in soil or groundwater it is recommended that both chemicals be considered together when comparing to screening values. Refer to Health Canada 2017b for specific guidance on calculating PFOS/PFOA ratios.
 - [9] CCME 1997 = CCME SQG Factsheet Series including arsenic, chromium, cyanide, phenol, tetrachloroethylene
 - [10] CCME 1999 = CCME SQG Factsheet Series including cadmium, copper, lead, mercury, PCB, thallium
 - [11] CCME 2002 = CCME SQG Factsheet for dioxin/furan
 - [12] CCME 2004 = CCME SQG Factsheet series for benzene, ethylbenzene, toluene and xylenes
 - [13] CCME 2006 = CCME SQG factsheet for trichloroethylene
 - [14] CCME 2007 = CCME SQG Factsheet for Uranium
 - [15] CCME 2008 = CCME CWS for Petroleum Hydrocarbons
 - [16] CCME 2010 = CCME SQG Factsheet for Polycyclic Aromatic Hydrocarbons
 - [17] CCME 2015 = CCME Factsheet for Nickel
 - [18] CCME 2018 = CCME SQG Factsheet for zinc
 - [19] CCME 2021 = CCME SQG Factsheet for PFOS
 - [20] OMOE S1 Value Applied

Table 5-7 Tier 1 and Tier 2 Pathway Specific Soil Criteria for Industrial Land Use (mg/kg) with Potable Groundwater Conditions

Land Use / Receptor	Tier 1 Criteria		Human Health									Ecological Health - Pathway Specific Criteria									Other Criteria						
	Lowest of all Tier 1 Pathways		Soil Contact / Ingestion			Inhalation of Indoor Air (Slab-on-Grade Construction)			Soil Leaching - Protection of Potable Groundwater			Offsite Migration Check			Direct Soil Contact - Protection of Plants and Soil Invertebrates -			Soil ad Food Ingestion - Protection of Wildlife (Birds and Mammals)			Soil Leaching - Protection of Aquatic Life			Management Limits			
	Parameter	Fine	Coarse	Fine	Coarse	Reference	Fine	Coarse	Reference	Fine	Coarse	Reference	Fine	Coarse	Reference	Fine	Coarse	Reference	Fine	Coarse	Reference	Fine	Coarse	Reference			
Chlorinated Aromatic Volatile Organic Compounds (VOC)																											
Chlorobenzene	0.61	0.22	300,000	300,000	AEP 2019	2.7	0.22	AEP 2019	0.61	1.1	AEP 2019	230,000	230,000	AEP 2019	15	12	OMOE 2011	-	-	OMOE 2011	BDL	BDL	AEP 2019	-	-	-	
1,2-Dichlorobenzene	0.10	0.18	300,000	300,000	AEP 2019	1,700	130	AEP 2019	0.097	0.18	AEP 2019	230,000	230,000	AEP 2019	9	7	OMOE 2011	-	-	OMOE 2011	60	60	OMOE 2011	-	-	-	
1,4-Dichlorobenzene	0.05	0.10	74,000	74,000	AEP 2019	100	8	AEP 2019	0.051	0.098	AEP 2019	59,000	59,000	AEP 2019	9	7	OMOE 2011	-	-	OMOE 2011	0.32	0.38	AEP 2019	-	-	-	
1,2,3-Trichlorobenzene	0.26	0.31	930	930	AEP 2019	58	2.7	AEP 2019	1.9	3.6	AEP 2019	700	700	AEP 2019	-	-	OMOE 2011	-	-	OMOE 2011	0.26	0.31	AEP 2019	-	-	-	
1,2,4-Trichlorobenzene	0.78	0.93	850	850	AEP 2019	51	2.4	AEP 2019	2	3.9	AEP 2019	540	540	AEP 2019	30	30	OMOE 2011	-	-	OMOE 2011	0.78	0.93	AEP 2019	-	-	-	
1,3,5-Trichlorobenzene	1.9	1.3	920	920	AEP 2019	27	1.3	AEP 2019	1.9	3.6	AEP 2019	660	660	AEP 2019	-	-	OMOE 2011	-	-	OMOE 2011	-	-	OMOE 2011	-	-	-	
1,2,3,4-Tetrachlorobenzene	0.04	0.05	540	540	AEP 2019	190	7.9	AEP 2019	3.1	5.9	AEP 2019	1100	1100	AEP 2019	-	-	OMOE 2011	-	-	OMOE 2011	0.042	0.05	AEP 2019	-	-	-	
1,2,3,5-Tetrachlorobenzene	0.37	0.7	66	66	AEP 2019	23	1	AEP 2019	0.37	0.7	AEP 2019	130	130	AEP 2019	-	-	OMOE 2011	-	-	OMOE 2011	-	-	OMOE 2011	-	-	-	
1,2,4,5-Tetrachlorobenzene	0.19	0.37	34	34	AEP 2019	12	0.49	AEP 2019	0.19	0.37	AEP 2019	66	66	AEP 2019	-	-	OMOE 2011	-	-	OMOE 2011	-	-	OMOE 2011	-	-	-	
Pentachlorobenzene	24	5.2	160	160	AEP 2019	1,000	70	AEP 2019	24	47	AEP 2019	320	320	AEP 2019	-	-	OMOE 2011	-	-	OMOE 2011	NGR	5.2	AEP 2019	-	-	-	
Hexachlorobenzene	3.6	6.0	30	30	AEP 2019	85	6	AEP 2019	3.6	7	AEP 2019	260	260	AEP 2019	-	-	OMOE 2011	-	-	OMOE 2011	25	14	OMOE 2011	-	-	-	
2,4-Dichlorophenol	0.0029	0.0034	16,000	16,000	AEP 2019	NGR	57000	AEP 2019	0.018	0.034	AEP 2019	31,000	31,000	AEP 2019	4.2	3.4	OMOE 2011	-	-	OMOE 2011	0.0029	0.0034	AEP 2019	-	-	-	
2,4,6-Trichlorophenol	0.19	0.37	400	400	AEP 2019	71,000	3,300	AEP 2019	0.19	0.37	AEP 2019	3,700	3,700	AEP 2019	10	10	OMOE 2011	-	-	OMOE 2011	0.42	0.5	AEP 2019	-	-	-	
2,3,4,6-Tetrachlorophenol	0.04	0.05	1,500	1,500	AEP 2019	110,000	4,400	AEP 2019	0.16	0.31	AEP 2019	3,000	3,000	AEP 2019	-	-	OMOE 2011	-	-	OMOE 2011	0.039	0.047	AEP 2019	-	-	-	
Pentachlorophenol (PCP)	0.03	0.03	4,000	4,000	AEP 2019	NGR	950,000	AEP 2019	6	12	AEP 2019	3200	3200	AEP 2019	39	31	OMOE 2011	2000	2000	OMOE 2011	0.025	0.029	AEP 2019	-	-	-	
Per- and Polyfluoroalkyl Substances (PFAS)																											
Perfluorooctanoic acid (PFOA)	9.94	9.94	9.94	9.94	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonate (PFOS)	0.01	0.01	40	40	CCME 2021	-	-	-	0.01	0.01	CCME 2021	0.1	0.1	CCME 2021	60	60	ECCE, 2017	-	-	CCME 2021	0.1	0.2	CCME 2021	-	-	-	
Perfluorobutanoate (PFBA)	1,630	1,630	1,630	1,630	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Perfluorobutane sulfonate (PFBS)	872	872	872	872	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Perfluorohexanesulfonate (PFHxS)	33	33	33	33	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Perfluoropentanoate (PFPeA)	11.41	11.41	11.41	11.41	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Perfluorohexanoate (PFHxA)	11.41	11.41	11.41	11.41	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Perfluoroheptanoate (PFHpA)	11.41	11.41	11.41	11.41	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Perfluorononanoate (PFNA)	1.20	1.20	1.2	1.2	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6:2 fluorotelomer sulfonate	11.41	11.41	11.41	11.41	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8:2 fluorotelomer sulfonate	11.41	11.41	11.41	11.41	HC 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other Parameters																											
Polychlorinated Biphenyl (Total PCB)	1.1	1.1	160	160	AEP 2019	2,300	450	OMOE 2011 [4]	1,100	770	OMOE 2011	310	310	AEP 2019	33	33	CCME 1999	1.1	1.1	OMOE 2011	-	-	-	-	-	-	
Dioxins and Furans (TEQ) (mg TEQ/kg)	0.000004	0.000004	0.000175	0.000175	CCME 2002	0.21	0.043	OMOE 2011	0.0026	0.0018	OMOE 2011	0.000004	0.000004	CCME 2002	-	-	OMOE 2011	0.000099	0.000099	OMOE 2011	870	780	OMOE 2011	-	-	-	
Ethylene Glycol	60	62	530,000	530,000	AEP 2019	NGR	NGR	AEP 2019	60	68	AEP 2019	16,000	16,000	AEP 2019	1,800	1,800	AEP 2019	-	-	AEP 2019	89	62	AEP 2019	-	-	-	
Phenol	0.007	0.007	150,000	150,000	CCME 1997	2,100	2,100	CCME 1997	3.8	3.8	CCME 1997	28,000	28,000	CCME 1997	128	128	CCME 1997	0.007	0.007	CCME 1997	-	-	-	-	-	-	

Notes:
 [1] All values in mg/kg
 [2] "-" = No guideline available or no guideline required; >RES means no soil criteria are shown as residual soil saturation limits may be exceeded; IACR means the Index of Additive Cancer Risk
 [3] For the purposes of screening human health effects from exposure to sediment, dry weight values should be evaluated against the soil quality standards for Soil Contact/Ingestion only.
 [4] Value has been adjusted to reflect 10-05 Target Risk
 [5] Original Agency Value has been divided by 5
 [6] Benzo(a)pyrene, BaP, Total Potency Equivalents are to be calculated following methodology shown in "Canadian Council of Ministers of the Environment. 2010 Canadian soil quality guidelines for the protection of environmental and human health: Carcinogenic and Other PAHs."
 [7] Dioxins and Furans TEQ, Toxic Equivalents, are to be calculated following methodology shown in "Canadian Council of Ministers of the Environment. 2002. Canadian soil quality guidelines for the protection of environmental and human health: Dioxins and Furans"
 [8] When PFOS and PFOA are found together in soil or groundwater it is recommended that both chemicals be considered together when comparing to screening values. Refer to Health Canada 2017b for specific guidance on calculating PFOS/PFOA ratios.
 [9] CCME 1997 = CCME SQG Factsheet Series including arsenic, chromium, cyanide, phenol, tetrachloroethylene
 [10] CCME 1999 = CCME SQG Factsheet Series including cadmium, copper, lead, mercury, PCB, thallium
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 [12] CCME 2004 = CCME SQG Factsheet series for benzene, ethylbenzene, toluene and xylenes
 [12] CCME 2006 = CCME SQG factsheet for trichloroethylene
 [13] CCME 2007 = CCME SQG Factsheet for Uranium
 [14] CCME 2008 = CCME CWS for Petroleum Hydrocarbons
 [15] CCME 2010 = CCME SQG Factsheet for Polycyclic Aromatic Hydrocarbons
 [16] CCME 2015 = CCME Factsheet for Nickel
 [17] CCME 2018 = CCME SQG Factsheet for zinc
 [18] CCME 2021 = CCME SQG Factsheet for PFOS
 [19] Lower of the OMOE S2 and S3 Values applied