

Atlantic RBCA - Human Health-Based Tier II Pathway-Specific Standards (PSS) for Groundwater - Residential / Parkland Land Use (µg/L)

Land Use	Residential / Parkland				
	Pathway	Potable Groundwater Drinking Water		Vapour Migration from Groundwater to Indoor Air	
Parameter	Fine / Coarse	Reference	Fine	Coarse	Reference
Inorganic Parameters					
Aluminum	100	HC, 2019 (OG)	-	-	
Antimony	6	HC, 2019	-	-	
Arsenic	10	HC, 2019 (ALARA)	-	-	
Barium	1000	HC, 2019	-	-	
Beryllium	4	MOECC, 2011	-	-	
Boron	5000	HC, 2019	-	-	
Cadmium	5	HC, 2019	-	-	
Chromium (hexavalent)	50	HC, 2019	-	-	
Chromium (total)	50	HC, 2019	-	-	
Cobalt	3.8	MOECC, 2011	-	-	
Copper	2000	HC, 2019 (MAC)	-	-	
Cyanide	200	HC, 2019	-	-	
Iron	300	HC, 2019 (AO)	-	-	
Lead	5	HC, 2019 (ALARA)	-	-	
Manganese	120	HC, 2019	-	-	
Mercury (total)	1	HC, 2019	-	-	
Molybdenum	70	MOECC, 2011	-	-	
Nickel	100	MOECC, 2011	-	-	
Selenium	50	HC, 2019	-	-	
Silver	Not required	HC, 2019	-	-	
Strontium	2400	USEPA, 2019 [5]	-	-	
Thallium	2	MOECC, 2011	-	-	
Tin	2400	USEPA, 2019 [5]	-	-	
Uranium	20	HC, 2019	-	-	
Vanadium	6.2	MOECC, 2011	-	-	
Zinc	5000	HC, 2019 (AO)	-	-	
General Chemistry Parameters					
Chloride	250 000	HC, 2019 (AO)	-	-	
Sodium	200 000	HC, 2019 (AO)	-	-	
Petroleum Hydrocarbons (PHC) Parameters					
Benzene	5	ARBCA, 2021	2 700	530	ARBCA, 2021
Toluene	24	ARBCA, 2021	>Sol	>Sol	ARBCA, 2021
Ethylbenzene	1.6	ARBCA, 2021	>Sol	>Sol	ARBCA, 2021
Xylene	20	ARBCA, 2021	>Sol	38 000	ARBCA, 2021
Modified TPH (Gas)	4400	ARBCA, 2021	>Sol	>Sol	ARBCA, 2021
Modified TPH (Fuel)	3200	ARBCA, 2021	>Sol	>Sol	ARBCA, 2021
Modified TPH (Lube)	7800	ARBCA, 2021	> Sol	>Sol	ARBCA, 2021
MTBE	15	HC, 2019 (AO)	6100	340	AEP, 2019
Polycyclic Aromatic Hydrocarbons (PAH) Parameters					
Non-Carcinogenic PAH Compounds					
Naphthalene	470	AEP, 2019	NGR	7000	AEP, 2019
1 - Methyl-naphthalene	12	MOECC, 2011	-	-	MOECC, 2011
2 - Methyl-naphthalene	12	MOECC, 2011	-	-	MOECC, 2011
Acenaphthene	1400	AEP, 2019	NGR	NGR	AEP, 2019
Acenaphthylene	4.5	MOECC, 2011 [4]	1200	360	MOECC, 2011 [4]
Anthracene	NGR	AEP, 2019	NGR	NGR	AEP, 2019
Fluoranthene	NGR	AEP, 2019	NGR	NGR	AEP, 2019
Fluorene	940	AEP, 2019	NGR	NGR	AEP, 2019
Phenanthrene	-	AEP, 2019	-	-	AEP, 2019
Pyrene	710	AEP, 2019	NGR	NGR	AEP, 2019
Carcinogenic PAH Compounds					
BaP Total Potency Equivalents	0.04	HC, 2019	-	-	
Benz[a]anthracene	-		-	-	
Benzo[a]pyrene	0.04	HC, 2019	-	-	
Benzo[b,j,k]fluoranthene isomers	-		-	-	
Benzo[g,h,i]perylene	-		-	-	
Chrysene	-		-	-	
Dibenz[a,h]anthracene	-		-	-	

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Indeno[1,2,3-c,d]pyrene	-		-	-	
Volatile Organic Compound (VOC) Parameters					
Bromodichloromethane	100	HC, 2019	-	-	
Bromoform	100	HC, 2019	7700	3800	MOECC, 2011 [4]
Bromomethane	51	BC CSR Schedule 3.2	56	5.6	MOECC, 2011
Carbon Tetrachloride (Tetrachloromethane)	2	HC, 2019	12	0.57	AEP, 2019
Chlorobenzene	80	HC, 2019	300	14	AEP, 2019
Chloroethane	-		-	-	
Chloroform	80	AEP, 2019	530	30	AEP, 2019
Chloromethane	38	USEPA, 2019 [5]	-	-	
Dibromochloromethane	190	AEP, 2019	26 000	1100	AEP, 2019
1,2-Dichlorobenzene	200	HC, 2019	116 000	5400	AEP, 2019
1,3-Dichlorobenzene	59	MOECC, 2011	-	-	
1,4-Dichlorobenzene	5	HC, 2019	4600	220	AEP, 2019
1,1-Dichloroethane	3700	BC CSR Schedule 3.2	3100	320	MOECC, 2011
1,2-Dichloroethane	5	HC, 2019	170	10	AEP, 2019
1,1-Dichloroethylene	14	ARBCA, 2021	4600	950	ARBCA, 2021
cis-1,2-Dichloroethylene	70	ARBCA, 2021	3900	770	ARBCA, 2021
trans-1,2-Dichloroethylene	100	ARBCA, 2021	4100	820	ARBCA, 2021
1,2-Dichloropropane	9.9	BC CSR Schedule 3.2	140	16	MOECC, 2011
1,3-Dichloropropene	6.7	BC CSR Schedule 3.2	45	5.2	MOECC, 2011
Ethylene Dibromide	0.34	BC CSR Schedule 3.2	8.3	2.5	MOECC, 2011 [4]
Methylene Chloride (Dichloromethane)	50	HC, 2019	61 000	3400	AEP, 2019
Styrene	100	MOECC, 2011	11 000	1300	MOECC, 2011
1,1,1,2-Tetrachloroethane	26	BC CSR Schedule 3.2	280	33	MOECC, 2011 [4]
1,1,1,2-Tetrachloroethane	3.4	BC CSR Schedule 3.2	150	32	MOECC, 2011 [4]
Tetrachloroethylene	10	ARBCA, 2021	1000	210	ARBCA, 2021
1,1,1-Trichloroethane	10 000	BC CSR Schedule 3.2	6700	640	MOECC, 2011
1,1,2-Trichloroethane	12	BC CSR Schedule 3.2	300	47	MOECC, 2011 [4]
Trichloroethylene	5	ARBCA, 2021	92	19	ARBCA, 2021
Vinyl Chloride	2	ARBCA, 2021	41	8.6	ARBCA, 2021
Pesticides					
Aldicarb	-		-	-	
Aldrin	-		-	-	
Atrazine	5	HC, 2019	-	-	
Azinphos-methyl	20	HC, 2019	-	-	
Bendiocarb	40	AEP, 2019	-	-	
Bromoxynil	5	HC, 2019	-	-	
Carbaryl	90	HC, 2019	-	-	
Carbofuran	90	HC, 2019	-	-	
Chlorothalonil	140	AEP, 2019	-	-	
Chlorpyrifos	90	HC, 2019	-	-	
Cyanazine	10	AEP, 2019	-	-	
2,4-D	100	HC, 2019	-	-	
DDT	93	AEP, 2019	-	-	
Diazinon	20	HC, 2019	-	-	
Dicamba	120	HC, 2019	-	-	
Dichlorop-methyl	-		-	-	
Dieldrin	-		-	-	
Dimethoate	20	HC, 2019	-	-	
Dinoseb	-		-	-	
Diquat	70	HC, 2019	-	-	
Diuron	150	HC, 2019	-	-	
Endosulfan	57	AEP, 2019	-	-	
Endrin	2.8	AEP, 2019	-	-	
Glyphosate	280	HC, 2019	-	-	
Heptachlor	0.052	AEP, 2019	4.3	0.24	AEP, 2019
Lindane	2.8	AEP, 2019	-	-	
Linuron	19	AEP, 2019	-	-	

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Malathion		190	HC, 2019	-	-	
MCPA		100	HC, 2019	-	-	
Methoxychlor		-		-	-	
Metolachlor		50	HC, 2019	-	-	
Metribuzin		80	HC, 2019	-	-	
Paraquat		10	HC, 2019	-	-	
Parathion		-		-	-	
Phorate		2	HC, 2019	-	-	
Picloram		190	HC, 2019	-	-	
Simazine		10	HC, 2019	-	-	
Tebuthiuron		660	AEP, 2019	-	-	
Terbufos		1	HC, 2019	-	-	
Toxaphene		0.43	AEP, 2019	6400	310	AEP, 2019
Triallate		120	AEP, 2019	-	-	
Trifluralin		45	HC, 2019	-	-	
PFAS Substances						
Perfluorooctanoic acid (PFOA)		0.2 [7]	HC, 2019	-	-	
Perfluorooctane sulfonate (PFOS)		0.6 [7]	HC, 2019	-	-	
Perfluorobutanoate (PFBA)		30	HC, 2019	-	-	
Perfluorobutane sulfonate (PFBS)		15	HC, 2019	-	-	
Perfluorohexanesulfonate (PFHxS)		0.6	HC, 2019	-	-	
Perfluoropentanoate (PFPeA)		0.2	HC, 2019	-	-	
Perfluorohexanoate (PFHxA)		0.2	HC, 2019	-	-	
Perfluoroheptanoate (PFHpA)		0.2	HC, 2019	-	-	
Perfluorononanoate (PFNA)		0.02	HC, 2019	-	-	
Other Parameters						
Polychlorinated Biphenyl (Total PCB)		9.4	AEP, 2019	150	78	MOECC, 2011 [4]
Dioxins and Furans (TEQ) [6]		0.00012	AEP, 2019	0.023	0.014	MOECC, 2011
Pentachlorophenol (PCP)		60	HC, 2019	-	-	
Organotins - Tributyltin		0.74	USEPA, 2019 [5]	-	-	
Ethylene Glycol		31 000	AEP, 2019	NGR	NGR	AEP, 2019
Propylene Glycol		-		-	-	
Phenol		570	AEP, 2019	73 000 000	3 700 000	AEP, 2019

Notes:

[1] All values in µg/L unless otherwise noted.

[2] "-" indicates no guideline available; ">SOL" means no criteria are shown as theoretical aqueous solubilities may be exceeded; "NGR" indicates no guideline required.

[3] Health Canada MAC (Maximum Acceptable Concentration), IMAC (Interim MAC), AO (Aesthetic Objectives), OG (Operational Guidance) and ALARA (As Low As Reasonably Achievable) criteria are shown for the Potable Groundwater Drinking Water pathway, where applicable. However, Health Canada AO and OG values are not considered as potential Tier I EQS values for this pathway.

[4] Value has been adjusted from its original jurisdictional value, to reflect a 1×10^{-05} Target Cancer Risk Level.

[5] Original USEPA value has been divided by 5 to adjust from a target hazard quotient of 1.0 to a target hazard quotient of 0.2.

[6] Dioxins and Furans Toxic Equivalents (TEQ), are to be calculated following the 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".

[7] When PFOS and PFOA co-occur in soil or groundwater, it is recommended that both chemicals be considered together when comparing to screening values. Refer to Health Canada's "Summary Table: Health Canada Draft Guidelines, Screening Values and Toxicological Reference Values (TRVs) for Perfluoroalkyl Substances (PFAS). May, 2019." for specific guidance on calculating PFOS/PFOA ratios and hazard indices.