

Atlantic RBCA - Human Health-Based Tier I Environmental Quality Standards (EQS) for Soil - All Land Uses; Non-Potable Groundwater Condition (mg/kg)

Land Use	Agricultural		Residential / Parkland		Commercial		Industrial	
	Fine	Coarse	Fine	Coarse	Fine	Coarse	Fine	Coarse
Inorganic Parameters								
Aluminum	15,400	15,400	15,400	15,400	15,400	15,400	220,000	220,000
Antimony	7.5	7.5	7.5	7.5	7.5	7.5	63	63
Arsenic	31	31	31	31	31	31	31	31
Barium	6800	6800	6800	6800	10,000	10,000	96,000	96,000
Beryllium	75	75	75	75	110	110	1100	1100
Boron (Total)	4300	4300	4300	4300	4300	4300	24,000	24,000
Boron (mg/L in saturated paste extract)	7500	7500	7500	7500	11,000	11,000	110,000	110,000
Cadmium	1.4	1.4	14	14	49	49	192	192
Chromium (hexavalent)	160	160	160	160	160	160	1300	1300
Chromium (total)	220	220	220	220	630	630	2300	2300
Cobalt	22	22	22	22	22	22	250	250
Copper	1100	1100	1100	1100	4000	4000	16,000	16,000
Cyanide	29	29	29	29	110	110	420	420
Iron	11,000	11,000	11,000	11,000	11,000	11,000	164,000	164,000
Lead	140	140	140	140	260	260	740	740
Manganese	360	360	360	360	360	360	5200	5200
Mercury (total)	6.6	6.6	6.6	6.6	24	24	99	99
Molybdenum	110	110	110	110	110	110	1200	1200
Nickel	200	200	200	200	310	310	2500	2500
Selenium	80	80	80	80	125	125	1135	1135
Silver	77	77	77	77	77	77	490	490
Strontium	9400	9400	9400	9400	9400	9400	140,000	140,000
Thallium	1	1	1	1	1	1	1	1
Tin	9400	9400	9400	9400	9400	9400	140,000	140,000
Uranium	23	23	23	23	33	33	300	300
Vanadium	39	39	39	39	39	39	160	160
Zinc	10,000	10,000	10,000	10,000	16,000	16,000	140,000	140,000
General Chemistry Parameters								
Chloride	>1,000,000	>1,000,000	>1,000,000	>1,000,000	>1,000,000	>1,000,000	>1,000,000	>1,000,000
Sodium	>1,000,000	>1,000,000	>1,000,000	>1,000,000	>1,000,000	>1,000,000	>1,000,000	>1,000,000
Petroleum Hydrocarbons (PHC) Parameters								
Benzene	0.49	0.021	0.49	0.021	6.9	0.52	6.9	0.52
Toluene	900	47	900	47	1400	1400	4700	4700
Ethylbenzene	2000	60	2000	60	3100	3100	10,000	10,000
Xylene	120	4.9	120	4.9	1800	60	6300	60
Modified TPH (Gas)	10,000	75	10,000	75	10,000	2000	10,000	2000
Modified TPH (Fuel)	8600	320	8600	320	10,000	10,000	10,000	10,000
Modified TPH (Lube)	10,000	1800	10,000	1800	10,000	10,000	10,000	10,000
MTBE	1.1	0.046	1.1	0.046	7.4	0.57	7.4	0.57
Polycyclic Aromatic Hydrocarbons (PAH) Parameters								
Non-Carcinogenic PAH Compounds								
Naphthalene	51	2.2	51	2.2	370	25	370	25
1 - Methyl naphthalene	72	72	72	72	72	72	560	560
2 - Methyl naphthalene	72	72	72	72	72	72	560	560
Acenaphthene	5300	3900	5300	3900	8000	8000	75,000	43,000
Acenaphthylene	33	4.5	33	4.5	78	66	96	66



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Anthracene	24,000	24,000	24,000	24,000	37,000	37,000	300,000	300,000
Fluoranthene	3500	3500	3500	3500	5300	5300	50,000	50,000
Fluorene	2700	2700	2700	2700	4100	4100	39,000	39,000
Phenanthrene	-	-	-	-	-	-	-	-
Pyrene	2100	2100	2100	2100	3200	3200	30,000	30,000
Carcinogenic PAH Compounds								
BaP Total Potency Equivalents	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Benz[a]anthracene	-	-	-	-	-	-	-	-
Benzo[a]pyrene	-	-	-	-	-	-	-	-
Benzo[b,j,k]fluoranthene isomers	-	-	-	-	-	-	-	-
Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-
Chrysene	-	-	-	-	-	-	-	-
Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-
Indeno[1,2,3-c,d]pyrene	-	-	-	-	-	-	-	-
Volatile Organic Compound (VOC) Parameters								
Bromodichloromethane	130	130	130	130	130	130	180	180
Bromoform	2.6	2.7	2.6	2.7	17	6.1	17	6.1
Bromomethane*	0.0034	0.00034	0.0034	0.00034	0.012	0.0016	0.012	0.0016
Carbon Tetrachloride* (Tetrachloromethane)	0.013	0.00057	0.013	0.00057	0.092	0.0069	0.092	0.0069
Chlorobenzene	0.39	0.018	0.39	0.018	2.7	0.22	2.7	0.22
Chloroethane	-	-	-	-	-	-	-	-
Chloroform	0.22	0.011	0.22	0.011	1.5	0.14	1.5	0.14
Chloromethane	-	-	-	-	-	-	-	-
Dibromochloromethane	7.8	0.27	7.8	0.27	76	2.5	76	2.5
1,2-Dichlorobenzene	230	10	230	10	1700	130	1700	130
1,3-Dichlorobenzene	420	420	420	420	420	420	4400	4400
1,4-Dichlorobenzene	14	0.67	14	0.67	100	8	100	8
1,1-Dichloroethane	31	3.5	31	3.5	39	56	39	56
1,2-Dichloroethane*	0.055	0.0027	0.055	0.0027	0.37	0.033	0.37	0.033
1,1-Dichloroethylene	0.93	0.039	0.93	0.039	6.6	0.49	6.6	0.49
cis-1,2-Dichloroethylene*	0.52	0.019	0.52	0.019	3.8	0.24	3.8	0.24
trans-1,2-Dichloroethylene	0.56	0.02	0.56	0.02	4.1	0.25	4.1	0.25
1,2-Dichloropropane	0.085	0.01	0.085	0.01	0.68	0.16	0.68	0.16
1,3-Dichloropropane	0.83	0.27	0.83	0.27	2.1	1.8	2.1	1.8
Ethylene Dibromide*	0.0054	0.014	0.0054	0.014	0.019	0.015	0.019	0.015
Methylene Chloride (Dichloromethane)	16	0.71	16	0.71	110	9.0	110	9
Styrene	19	16	19	16	170	42	170	42
1,1,1,2-Tetrachloroethane	0.46	0.58	0.46	0.58	1.1	0.87	1.1	0.87
1,1,1,2,2-Tetrachloroethane	0.096	0.045	0.096	0.045	0.94	0.19	0.94	0.19
Tetrachloroethylene*	0.39	0.016	0.39	0.016	2.9	0.2	2.9	0.2
1,1,1-Trichloroethane	3.4	0.38	3.4	0.38	42	6.1	42	6.1
1,1,2-Trichloroethane	0.18	0.3	0.18	0.3	1.1	0.42	1.1	0.42
Trichloroethylene*	0.02	0.00081	0.02	0.00081	0.14	0.01	0.14	0.01
Vinyl Chloride*	0.0087	0.00031	0.0087	0.00031	0.12	0.0079	0.24	0.016

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Pesticides								
Aldicarb	22	22	22	22	34	34	160	160
Aldrin	3.4	3.4	3.4	3.4	5.1	5.1	44	44
Atrazine	11	11	11	11	17	17	80	80
Azinphos-methyl	55	55	55	55	84	84	400	400
Bendiocarb	89	89	89	89	130	130	640	640
Bromoxynil	11	11	11	11	17	17	80	80
Carbaryl	220	220	220	220	340	340	1600	1600
Carbofuran	220	220	220	220	340	340	1600	1600
Chlorothalonil	330	330	330	330	500	500	2400	2400
Chlorpyrifos	220	220	220	220	340	340	1600	1600
Cyanazine	29	29	29	29	44	44	210	210
2,4-D	220	220	220	220	340	340	1600	1600
DDT	220	220	220	220	340	340	1600	1600
Diazinon	44	44	44	44	67	67	320	320
Dicamba	280	280	280	280	420	420	2000	2000
Dichlorfop-methyl	22	22	22	22	34	34	160	160
Dieldrin	3.4	3.4	3.4	3.4	5.1	5.1	44	44
Dimethoate	44	44	44	44	67	67	320	320
Dinoseb	22	22	22	22	34	34	160	160
Diquat	180	180	180	180	270	270	1300	1300
Diuron	350	350	350	350	520	520	2500	2500
Endosulfan	210	210	210	210	320	320	3000	3000
Endrin	10	10	10	10	15	15	130	130
Glyphosate	670	670	670	670	1000	1000	4800	4800
Heptachlor	0.21	0.012	0.21	0.012	0.69	0.094	2.4	0.094
Lindane	6.7	6.7	6.7	6.7	10	10	48	48
Linuron	44	44	44	44	67	67	320	320
Malathion	440	440	440	440	670	670	3200	3200
MCPA	460	460	460	460	690	690	8200	8200
Methoxychlor	3500	3500	3500	3500	5300	5300	50,000	50,000
Metolachlor	110	110	110	110	170	170	800	800
Metribuzin	180	180	180	180	280	280	1300	1300
Paraquat	22	22	22	22	34	34	160	160
Parathion	110	110	110	110	170	170	800	800
Phorate	4.4	4.4	4.4	4.4	6.7	6.7	32	32
Picloram	440	440	440	440	670	670	3200	3200
Simazine	29	29	29	29	44	44	210	210
Tebuthiuron	1600	1600	1600	1600	2400	2400	11,000	11,000
Terbufos	1.1	1.1	1.1	1.1	1.7	1.7	8	8
Toxaphene	4.8	4.8	4.8	4.8	7.3	7.3	7.3	7.3
Triallate	290	290	290	290	440	440	2100	2100
Trifluralin	110	110	110	110	160	160	770	770

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	Fine	Coarse	Fine	Coarse	Fine	Coarse	Fine	Coarse
PFAS Substances								
Perfluorooctanoic acid (PFOA) [3]	0.7	0.7	0.7	0.7	1.05	1.05	9.94	9.94
Perfluorooctane sulfonate (PFOS) [3]	2.1	2.1	2.1	2.1	3.2	3.2	30.5	30.5
Perfluorobutanoate (PFBA)	114	114	114	114	173	173	1630	1630
Perfluorobutane sulfonate (PFBS)	61	61	61	61	92	92	872	872
Perfluorohexanesulfonate (PFHxS)	2.3	2.3	2.3	2.3	3.5	3.5	33	33
Perfluoropentanoate (PFPeA)	0.8	0.8	0.8	0.8	1.21	1.21	11.41	11.41
Perfluorohexanoate (PFHxA)	0.8	0.8	0.8	0.8	1.21	1.21	11.41	11.41
Perfluoroheptanoate (PFHpA)	0.8	0.8	0.8	0.8	1.21	1.21	11.41	11.41
Perfluorononanoate (PFNA)	0.08	0.08	0.08	0.08	0.13	0.13	1.2	1.2
Other Parameters								
Polychlorinated Biphenyl (Total PCB)	22	22	22	22	33	33	160	160
Dioxins and Furans (TEQ) (mg TEQ/kg)	0.000004	0.000004	0.000004	0.000004	0.000004	0.000004	0.000004	0.000004
Pentachlorophenol (PCP)	93	93	93	93	340	340	1300	1300
Organotins - Tributyltin	3.8	3.8	3.8	3.8	3.8	3.8	50	50
Ethylene Glycol	73,000	73,000	73,000	73,000	110,000	110,000	530,000	530,000
Propylene Glycol	-	-	-	-	-	-	-	-
Phenol	500	500	500	500	1800	1800	2100	2100

Notes:

[1] All values are in units of mg/kg unless otherwise noted.

[2] "-" indicates no guideline available. In the Tier I EQS soil tables, the Upper Concentration Limit (UCL) of 10,000 mg/kg in soil has been applied to any petroleum hydrocarbon calculated concentration that is >RES (residual concentration) or exceeds 10,000 mg/kg, following Atlantic RBCA guidance

[3] 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.

* Indicates the derived guideline value is below currently achievable analytical RDLs (the value is not reliably attainable with current analytical methods). For sites where VOCs are identified as a contaminant of potential concern and where the indoor air guidelines are not achievable for the VOC parameters (parent and associated daughter products), soil vapour or slab vapour testing is required to determine potential exposures. In any such testing program, the site professional must consult with and abide by the guidance provided in ARBCA (2021), with respect to CVOCs, and the Atlantic RBCA Guidance for Vapour Intrusion Assessments posted at: www.atlanticrbca.com/technical-documents/.