



Taseko Prosperity Gold-Copper Project

Appendix 5-4-N

Appendix 5-4-N Contaminated Site Remediation Limits Comparison Tables

Table N-1: Soil Quality Guidelines - Agriculture

Values shown are not for regulatory use. Refer to provincial/territorial guidelines, standards and regulations to confirm values and their implications. (See [Reference Section](#) and [Appendix B](#) for provincial/territorial references and contact persons.) Values shown are for provinces/territories that have adopted values that differ from CCME EQGs. Provinces/territories not listed generally adopt CCME EQGs. All concentrations are expressed in mg/kg (ppm).

Contaminant	CCME ¹	BC ⁵	Alberta ⁶	Sask	Ont ^{10,11}	Que	Yukon ⁵	NWT	Nunavut
Arsenic (inorganic)	12	15-100	10		(25) 20	6	15-100		
Barium	750	750	600	750	(1000) 750	200	750		
Benzene	0.05	0.04-1000	0.05	0.5-5 ⁷	0.24	0.1	0.04-1000	0.05	0.05
Benzo (a) pyrene	0.1	0.1-5			1.2	0.1	0.1-5		
Cadmium	1.4	1.5-4500	1	1.4	(4.0) 3.0	1.5	1.5-4500		
Chromium (total)	64	9-750	100	64		85	9-750		
Chromium (VI)	0.4		5		(10) 8.0				
Copper (total)	63	40-350000	80	63	(200) 150	40	40-350000		
Cyanide (Free/Available)	0.9	0.5	0.5		100	2	0.5		
<i>Cyanide (Total)⁴</i>		5				2	5		
DDT (total)	0.7		0.1		1.6				
Ethylbenzene	0.1	0.1-3500		5-50 ⁷	0.28	0.2	0.1-3500	0.1	0.1
Ethylene glycol	960			97 ⁸ , 410 ⁹					
Lead	70	100-100000	50	375	200	50	100-100000	70	70
Mercury (inorganic)	6.6	0.8	0.2	6.6	10		0.8		
Naphthalene	0.1	0.1	0.1		4.6	0.1	0.1		
Nickel	50		40	150	(200) 150	50			
Pentachlorophenol	7.6	0.1-750000	0.05		5.0	0.1	0.1-750000		
<i>chlorophenols (each)^{3,4}</i>		0.05	0.05				0.05		
Phenol	3.8		0.05		40	0.1			
<i>nonchlorinated (each)^{2,4}</i>		0.1	0.1				0.1		
Polychlorinated Biphenyls (PCBs)	0.5	0.5-5	0.5	0.5	0.5	0.05	0.5-5	0.5	0.5
Tetrachloroethylene	0.1	0.1-1000			0.45	0.2	0.1-1000		
Thallium	1	2	1		4.1		2		
Toluene	0.1	0.1-6500	1.0	3-30 ⁷	2.1	0.2	0.1-6500	0.1	0.1
Trichloroethylene	0.1	0.1-200			(3.9) 1.1		0.1-200		
Vanadium (total)	130	200	100	130	(250) 200		200		
Xylene	0.1	0.1-65000	1.0	5-50 ⁷	25	0.2	0.1-65000	0.1	0.1
Zinc	200	150-150000	120	200	(800) 600	110	150-150000		

NOTES:

1 Updated 2001 EC, CCME EQG web site <http://www.ec.gc.ca/CEQG-RCQE/English/default.cfm>

2 Nonchlorinated phenolic substances include: 2,4-dimethylphenol, 2,4-dinitrophenol, 2-methyl 4,6-dinitrophenol, nitrophenol (2-,4-), phenol and cresol

3 Chlorophenols include: chlorophenol (ortho, meta, para), dichlorophenol (2,6-,2,5-,2,4-,3,5-,2,3-,3,4-), trichlorophenol (2,4,6-, 2,3,6-, 2,4,5-,2,3,4-, 2,3,4-, 3,4,5-), tetrochlorophenol (2,3,5,6-, 2,3,4,5-, 2,3,4,6-)

4 Indented and italicized compounds are broken down specifically in certain provinces, but are more general in the CCME

5 Single BC & Yukon values are Generic Numeric Soil Standards. Compounds with a range of values are the lows and highs indicated in the Matrix Numerical Soil Standards.

6 Alberta uses one generic value for all land uses.

7 If high value is used, crop growth and yield must be monitored for a minimum of 3 years.

8 The value represents pasture (grazing animals)

9 The value represents crop land (no grazing)

10 The Ontario values represent surface soil in a potable groundwater situation.

11 For Ontario, () indicate value applies to medium and fine textured soils.

Environmental Management Act

CONTAMINATED SITES REGULATION

[includes amendments up to B.C. Reg. 239/2007, July 1, 2007]

Schedule 4

[en. B.C. Reg. 324/2004, s. 68.]

Generic Numerical Soil Standards ¹

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V	COLUMN VI
Substance	Agricultural	Urban Park	Residential	Commercial	Industrial
	(AL)	(PL)	(RL)	(CL)	(IL)
Inorganic Substances					
antimony	20	20	20	40	40
barium	750	500	500	2 000	2 000
beryllium	4	4	4	8	8
boron (hot water soluble)	2				
cobalt	40	50	50	300	300
cyanide (WAD) ²	0.5	10	10	100	100
cyanide (SAD) ³	5	50	50	500	500
fluoride	200	400	400	2 000	2 000
molybdenum	5	10	10	40	40
nickel	150	100	100	500	500
selenium	2	3	3	10	10
silver	20	20	20	40	40
sulphur (elemental)	500				
thallium ⁴	2				
tin	5	50	50	300	300
vanadium	200	200	200		
Miscellaneous Inorganic and Organic Substances					
nonaqueous phase liquids	not present ⁵	not present ⁵	not present ⁵	not present ⁵	not present ⁵
odorous substances	not present ⁶	not present ⁶	not present ⁶	not present ⁶	not present ⁶
<i>petroleum hydrocarbons</i>					
VPHs ⁷	200	200	200	200	200
LEPHs ⁸	1 000	1 000	1 000	2 000	2 000
HEPHs ⁹	1 000	1 000	1 000	5 000	5 000
Organic Substances Chlorinated Hydrocarbons					
<i>chlorinated aliphatics</i>					
chlorinated aliphatics ¹⁰ (each)	0.1	5	5	50	50

<i>chlorinated benzenes</i>					
chlorobenzenes ¹¹ (each)	0.05	2	2	10	10
dichlorobenzenes ¹² (each)	0.1	1	1	10	10
hexachlorobenzene	0.05	2	2	10	10
monochlorobenzene	0.1	1	1	10	10
hexachlorocyclohexane	0.01				
Monocyclic Aromatic Hydrocarbons (MAHs)					
styrene	0.1	5	5	50	50
Phenolic Substances					
<i>chlorinated phenols</i>					
chlorinated phenols ¹³ (each)	0.05	0.5	0.5	5	5
<i>nonchlorinated phenols</i>					
nonchlorinated phenols ¹⁴ (each)	0.1	1	1	10	10
Phthalic Acid Esters					
phthalic acid esters ¹⁵ (each)	30				
Polycyclic Aromatic Hydrocarbons (PAHs)					
benz[a]anthracene	0.1	1	1	10	10
benzo[b]fluoranthene	0.1	1	1	10	10
benzo[k]fluoranthene	0.1	1	1	10	10
dibenz[a,h]anthracene	0.1	1	1	10	10
indeno (1,2,3-cd) pyrene	0.1	1	1	10	10
naphthalene	0.1	5	5	50	50
phenanthrene	0.1	5	5	50	50
pyrene	0.1	10	10	100	100

NOTES:

- All values in µg/g unless otherwise stated. Substances must be analyzed using methods specified in a director's protocol or alternate methods acceptable to a director.
- WAD means weak acid dissociable.
- SAD means strong acid dissociable.
- Standard has been adjusted based on analytical detection limit of 2 µg/g for substance.
- Soil must be remediated so that nonaqueous phase liquids are not present in quantities in excess of that acceptable to a director.
- Soil must be remediated so that odorous substances are not present in quantities in excess of that acceptable to a director.
- VPHs include: volatile petroleum hydrocarbons with the exception of benzene, toluene, ethylbenzene and xylenes.
- LEPHs include: light extractable petroleum hydrocarbons with the exception of benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, dibenz[a,h]anthracene, indeno (1,2,3-cd) pyrene, naphthalene, phenanthrene and pyrene.
- HEPHs include: heavy extractable petroleum hydrocarbons with the exception of benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, dibenz[a,h]anthracene, indeno (1,2,3-cd) pyrene, naphthalene, phenanthrene and pyrene.
- Chlorinated aliphatics include: chloroform, dichloroethane (1,1-, 1,2-), dichloroethene (1,1-, 1,2-), dichloromethane, 1,2-dichloropropane, 1,3-dichloropropene (cis and trans), carbon tetrachloride, trichloroethane (1,1,1-, 1,1,2-)
- Chlorobenzene includes: trichlorobenzene, tetrachlorobenzene, and pentachlorobenzene.
- Dichlorobenzenes includes: 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene.
- Chlorinated phenols include: chlorophenol isomers (ortho, meta, para), dichlorophenols (2,6-, 2,5-, 2,4-, 3,5-, 2,3-, 3,4-), trichlorophenols (2,4,6-, 2,3,6-, 2,4,5-, 2,3,5-, 2,3,4-, 3,4,5-), and tetrachlorophenols (2,3,5,6-, 2,3,4,5-, 2,3,4,6-).
- Nonchlorinated phenols include: 2,4-dimethylphenol, 2,4-dinitrophenol, 2-methyl 4,6-dinitrophenol, nitrophenol (2-, 4-), phenol, and cresol.
- Phthalic acid esters include: dibutyl phthalate (DBP), and di(2-ethylhexyl) phthalate (DEHP).