



Ministry of
Environment

PROTOCOL 11

FOR CONTAMINATED SITES

Upper Cap Concentrations for
Substances Listed in the Contaminated Sites Regulation

Version 2.1

Prepared pursuant to Section 64 of the
Environmental Management Act

Approved: Michael W. Macfarlane
Director of Waste Management

February 5, 2014
Date

Effective date: February 1, 2014

1.0 Definitions

The following words, acronyms and expressions used in this Protocol are defined in the ministry procedure “Definitions and Acronyms for Contaminated Sites”: receptor, Regulation, and upper cap concentration.

2.0 Introduction

Protocol 12, “Site Risk Classification, Reclassification and Reporting,” describes procedures for classifying sites based on their risk to the environment or human health. Conditions for classifying sites as high risk include the presence of substances at concentrations exceeding upper cap concentrations. These are concentrations established by the Director for substances with numerical standards in the Regulation and which, when present in the exposure zone of soil, water, sediment or vapour, could pose high risks to the environment or human health. Under Protocol 12, if upper cap concentrations are exceeded, an analysis of exposure pathways usually must be carried out to determine if a site is classified as high risk.

3.0 Upper cap concentrations

Tables 1 – 8 specify the upper cap concentrations for soil, water, sediment, and vapour under this protocol. For the purposes of selecting upper cap concentrations the methods incorporated in sections 11 (Definition of contaminated site) and 12 (Specification of applicable land, water, sediment and vapour uses and site-specific factors) of the Regulation and ministry protocols and guidance should be followed.

4.0 Derivation of upper cap concentrations

Upper cap concentrations were generally derived from the numerical environmental quality standards and criteria in Schedules 4, 5, 6, 9, 10, and 11 of the Regulation by applying multiplication factors or “upper cap multipliers”. They were established in consideration of toxicological data sets for multiple species or humans and of the level of unacceptable risk that exposure to an upper cap concentration of a substance would provoke in media-specific receptor populations. Details on the derivation are provided in Appendix 1.

For more information, contact the Environmental Management Branch at site@gov.bc.ca.

Table 1. Human Health Soil Ingestion Exposure Upper Cap Concentrations for Schedule 4 Substances^{1,2}

COLUMN I Substance	COLUMN II CAS No.	COLUMN III Agricultural (AL)	COLUMN IV Urban Park (PL)	COLUMN V Residential (RL)	COLUMN VI Commercial (CL)	COLUMN VII Industrial (IL)
INORGANIC SUBSTANCES						
Antimony	7440-36-0	150	150	150	400	25 000
Beryllium	7440-41-7	650	650	650	2 000	100 000
boron (hot water soluble)	7440-42-8	65 000	65 000	65 000	100 000	>1 000 mg/g ³
Cobalt	7440-48-4	450	450	450	1 500	90 000
cyanide (WAD) ⁴	57-12-5	5 ⁵	100 ⁵	100 ⁵	1 000 ⁵	1 000 ⁵
cyanide (SAD) ⁶	57-12-5	50 ⁵	500 ⁵	500 ⁵	5 000 ⁵	5 000 ⁵
Fluoride	7782-41-4	40 000	40 000	40 000	120 000	>1 000 mg/g ³
Molybdenum	7439-98-7	1 500	1 500	1 500	5 000	300 000 ³
Nickel	7440-02-0	6 500	6 500	6 500	20 000	>1 000 mg/g ³
Selenium	7782-49-2	1 500	1 500	1 500	5 000	300 000
Silver	7440-22-4	1 500	1 500	1 500	5 000	300 000
sulphur (elemental)	7704-34-9	5 000 ⁵				
Thallium	7440-28-0	650	650	650	2 000	5 500
Tin	7440-31-5	>1 000 mg/g ³	>1 000 mg/g ³	>1 000 mg/g ³	>1 000 mg/g ³	>1 000 mg/g ³
Vanadium	7440-62-2	20 000	20 000	20 000	65 000	200 000
MISCELLANEOUS INORGANIC AND ORGANIC SUBSTANCES						
<i>Petroleum hydrocarbons</i>						
VPHs ⁷		2 000 ⁵	2 000 ⁵	2 000 ⁵	2 000 ⁵	2 000 ⁵
LEPHs ⁸		10 000 ⁵	10 000 ⁵	10 000 ⁵	20 000 ⁵	20 000 ⁵
HEPHs ⁹		10 000 ⁵	10 000 ⁵	10 000 ⁵	50 000 ⁵	50 000 ⁵
ORGANIC SUBSTANCES						
<i>chlorinated aliphatics</i>						
Chloroform	67-66-3	3 000	3 000	3 000	10 000	650 000
1,1-dichloroethane	75-34-3	4 000	4 000	4 000	10 000	40 000
1,2-dichloroethane	107-06-2	4 000	4 000	4 000	10 000	40 000

Table 1. Human Health Soil Ingestion Exposure Upper Cap Concentrations for Schedule 4 Substances^{1,2}

COLUMN I Substance	COLUMN II CAS No.	COLUMN III Agricultural (AL)	COLUMN IV Urban Park (PL)	COLUMN V Residential (RL)	COLUMN VI Commercial (CL)	COLUMN VII Industrial (IL)
1,1-dichloroethene	75-35-4	1 ⁵	50 ⁵	50 ⁵	500 ⁵	500 ⁵
1,2-dichloroethene (cis)	156-56-2	1 ⁵	50 ⁵	50 ⁵	500 ⁵	500 ⁵
1,2-dichloroethene (trans)	156-60-5	1 ⁵	50 ⁵	50 ⁵	500 ⁵	500 ⁵
dichloromethane	75-09-2	20 000	20 000	20 000	60 000	400 000
1,2-dichloropropane	78-87-5	30 000	30 000	30 000	90 000	550 000
1,3-dichloropropene (cis and trans)	542-75-6	3 500	3 500	3 500	10 000	35 000
1,1,1-trichloroethane	71-55-6	650 000	650 000	650 000	>1 000 mg/g ³	>1 000 mg/g ³
1,1,2-trichloroethane	79-00-5	1 300	1 300	1 300	4 000	60 000
carbon tetrachloride	56-23-5	200	200	200	700	45 000
lindane ¹⁰	58-89-9	50	50	50	150	500
<i>chlorinated benzenes</i>						
monochlorobenzene	108-90-7	6 500	6 500	6 500	20 000	>1 000 mg/g ³
1,2-dichlorobenzene	95-50-1	30 000	30 000	30 000	90 000	>1 000 mg/g ³
1,3-dichlorobenzene	541-73-1	1 ⁵	10 ⁵	10 ⁵	100 ⁵	100 ⁵
1,4-dichlorobenzene	106-46-7	20 000	20 000	20 000	70 000	>1 000 mg/g ³
1,2,3-trichlorobenzene	87-61-6	500	500	500	1 500	100 000
1,2,4-trichlorobenzene	120-82-1	3 250	3 250	3 250	10 000	600 000
1,3,5-trichlorobenzene	180-70-3	500	500	500	1 500	100 000
1,2,3,4-tetrachlorobenzene	634-66-2	1 000	1 000	1 000	3 250	200 000
1,2,3,5-tetrachlorobenzene	634-90-2	150	150	150	400	25 000
1,2,4,5-tetrachlorobenzene	95-94-3	100	100	100	300	20 000
pentachlorobenzene	608-93-5	250	250	250	800	50 000
hexachlorobenzene	118-74-1	250	250	250	800	50 000
MONOCYCLIC AROMATIC HYDROCARBONS (MAHS)						
Styrene	100-42-5	40 000	40 000	40 000	100 000	>1 000 mg/g ³

Table 1. Human Health Soil Ingestion Exposure Upper Cap Concentrations for Schedule 4 Substances^{1,2}

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V	COLUMN VI	COLUMN VII
Substance	CAS No.	Agricultural (AL)	Urban Park (PL)	Residential (RL)	Commercial (CL)	Industrial (IL)
PHENOLIC SUBSTANCES						
<i>Chlorinated Phenols</i>						
2-chlorophenol	95-57-8	0.5 ⁵	5 ⁵	5 ⁵	50 ⁵	50 ⁵
3-chlorophenol	108-43-0	0.5 ⁵	5 ⁵	5 ⁵	50 ⁵	50 ⁵
4-chlorophenol	106-48-9	1 000	1 000	1 000	3 000	200 000
2,3-dichlorophenol	576-24-9	0.5 ⁵	5 ⁵	5 ⁵	50 ⁵	50 ⁵
2,4-dichlorophenol	120-83-2	1 000	1 000	1 000	3 000	200 000
2,5-dichlorophenol	583-78-8	0.5 ⁵	5 ⁵	5 ⁵	50 ⁵	50 ⁵
2,6-dichlorophenol	87-65-0	0.5 ⁵	5 ⁵	5 ⁵	50 ⁵	50 ⁵
3,4-dichlorophenol	95-77-2	0.5 ⁵	5 ⁵	5 ⁵	50 ⁵	50 ⁵
3,5-dichlorophenol	591-35-5	0.5 ⁵	5 ⁵	5 ⁵	50 ⁵	50 ⁵
2,3,4-trichlorophenol	15950-66-0	0.5 ⁵	5 ⁵	5 ⁵	50 ⁵	50 ⁵
2,3,5-trichlorophenol	933-78-8	0.5 ⁵	5 ⁵	5 ⁵	50 ⁵	50 ⁵
2,3,6-trichlorophenol	933-75-5	0.5 ⁵	5 ⁵	5 ⁵	50 ⁵	50 ⁵
2,4,5-trichlorophenol	95-95-4	0.5 ⁵	5 ⁵	5 ⁵	50 ⁵	50 ⁵
2,4,6-trichlorophenol	88-06-2	1 000	1 000	1 000	3 000	200 000
3,4,5-trichlorophenol	609-19-8	0.5 ⁵	5 ⁵	5 ⁵	50 ⁵	50 ⁵
2,3,4,5-tetrachlorophenol	4901-51-3	1 000	1 000	1 000	3 000	200 000
2,3,4,6-tetrachlorophenol	58-90-2	10 000	10 000	10 000	30 000	>1 000 mg/g ³
2,3,5,6-tetrachlorophenol	935-95-5	1 000	1 000	1 000	3 000	200 000
<i>nonchlorinated phenols</i>						
Phenol	108-95-2	100 000	100 000	100 000	300 000	>1 000 mg/g ³
2-cresol (2-methylphenol)	95-48-7	15 000	15 000	15 000	50 000	>1 000 mg/g ³
3-cresol (3-methylphenol)	108-39-4	15 000	15 000	15 000	50 000	>1 000 mg/g ³

Table 1. Human Health Soil Ingestion Exposure Upper Cap Concentrations for Schedule 4 Substances^{1,2}

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V	COLUMN VI	COLUMN VII
Substance	CAS No.	Agricultural (AL)	Urban Park (PL)	Residential (RL)	Commercial (CL)	Industrial (IL)
4-cresol (4-methylphenol)	106-44-5	1 500	1 500	1 500	5 000	>1 000 mg/g ³
2,4-dimethylphenol	105-67-9	6 500	6 500	6 500	20 000	>1 000 mg/g ³
2-nitrophenol	88-75-5	1 ⁵	10 ⁵	10 ⁵	100 ⁵	100 ⁵
4-nitrophenol	100-02-7	1 ⁵	10 ⁵	10 ⁵	100 ⁵	100 ⁵
2,4-dinitrophenol	51-28-5	650	650	650	2 000	100 000
2-methyl-4,6-dinitrophenol	8071-51-0	1 ⁵	10 ⁵	10 ⁵	100 ⁵	100 ⁵
PHTHALIC ACID ESTERS						
dibutyl phthalate (DBP)	84-74-2	20 000	20 000	20 000	60 000	400 000
di (2-ethylhexyl) phthalate (DEHP)	117-81-7	6 500	6 500	6 500	20 000	>1 000 mg/g ³
POLYCYCLIC AROMATIC HYDROCARBONS (PAHS)						
benz[a]anthracene	56-55-3	17 500	17 500	17 500	55 000	150 000
benzo[b]fluoranthene	205-99-2	17 500	17 500	17 500	55 000	150 000
benzo[k]fluoranthene	207-08-9	17 500	17 500	17 500	55 000	150 000
dibenz[a,h]anthracene	53-70-3	1 750	1 750	1 750	5 500	15 000
indeno (1,2,3-c,d) pyrene	193-39-5	17 500	17 500	17 500	55 000	150 000
Naphthalene	91-20-3	6 500	6 500	6 500	20 000	>1 000 mg/g ³
Phenanthrene	85-01-8	6 500	6 500	6 500	20 000	>1 000 mg/g ³
Pyrene	129-00-0	10 000	10 000	10 000	30 000	>1 000 mg/g ³

1. All values in ug/g unless otherwise stated. Substances must be analyzed using methods specified in a director's protocol or alternate methods acceptable to the director.
2. Upper cap concentrations were derived by application of a 10x upper cap multiplier to human health protection soil ingestion exposure values calculated for Schedule 4 listed substances. Human health protection soil ingestion exposure values were calculated using: BC Environment. 1996. Overview of CSST Procedures for the Derivation of Soil Quality Matrix Standards for Contaminated Sites – Part C. Human Health Protective Standards. Ministry of Environment, Victoria, B.C.
http://www.env.gov.bc.ca/epd/remediation/standards_criteria/standards/overview_of_csst.htm

3. Upper cap concentration derived for substance and corresponding land use exceeds unity.
4. WAD means weak acid dissociable.
5. Insufficient data exists to develop a human health protection soil ingestion exposure value. Tabled upper cap concentration was derived by application of 10x upper cap multiplier to existing Schedule 4 soil quality standard for substance and corresponding land use.
6. SAD means strong acid dissociable.
7. VPHs includes: volatile petroleum hydrocarbons with the exception of benzene, toluene, ethylbenzene, and xylenes.
8. LEPHs includes: 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.
9. HEPHs includes: 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.
10. Lindane is 1,2,3,4,5,6-hexachlorocyclohexane, gamma isomer.

Table 2. Environmental Health Invertebrate and Plant Soil Exposure Upper Cap Concentrations for Schedule 4 Substances^{1,2}

COLUMN I Substance	COLUMN II CAS No.	COLUMN III Agricultural (AL)	COLUMN IV Urban Park (PL)	COLUMN V Residential (RL)	COLUMN VI Commercial (CL)	COLUMN VII Industrial (IL)
INORGANIC SUBSTANCES						
Antimony	7440-36-0	200	200	200	400	400
Beryllium	7440-41-7	40	40	40	80	80
boron (hot water soluble)	7440-42-8	20				
Cobalt	7440-48-4	400	500	500	3 000	3 000
cyanide (WAD) ³	57-12-5	5	100	100	1 000	1 000
cyanide (SAD) ⁴	57-12-5	50	500	500	5 000	5 000
Fluoride	7782-41-4	2 000	4 000	4 000	20 000	20 000
Molybdenum	7439-98-7	50	100	100	400	400
Nickel	7440-02-0	1 500	1 000	1 000	5 000	5 000
Selenium	7782-49-2	20	30	30	100	100
Silver	7440-22-4	200	200	200	400	400
sulphur (elemental)	7704-34-9	5 000				
Thallium	7440-28-0	20				
Tin	7440-31-5	50	500	500	3 000	3 000
Vanadium	7440-62-2	2 000	2 000	2 000		
MISCELLANEOUS INORGANIC AND ORGANIC SUBSTANCES						
<i>Petroleum hydrocarbons</i>						
VPHs ⁵		2 000	2 000	2 000	2 000	2 000
LEPHs ⁶		10 000	10 000	10 000	20 000	20 000
HEPHs ⁷		10 000	10 000	10 000	50 000	50 000
ORGANIC SUBSTANCES						
<i>chlorinated aliphatics</i>						
Chloroform	67-66-3	1	50	50	500	500
1,1-dichloroethane	75-34-3	1	50	50	500	500
1,2-dichloroethane	107-06-2	1	50	50	500	500

Table 2. Environmental Health Invertebrate and Plant Soil Exposure Upper Cap Concentrations for Schedule 4 Substances^{1,2}

COLUMN I Substance	COLUMN II CAS No.	COLUMN III Agricultural (AL)	COLUMN IV Urban Park (PL)	COLUMN V Residential (RL)	COLUMN VI Commercial (CL)	COLUMN VII Industrial (IL)
1,1-dichloroethene	75-35-4	1	50	50	500	500
1,2-dichloroethene (cis)	156-56-2	1	50	50	500	500
1,2-dichloroethene (trans)	156-60-5	1	50	50	500	500
dichloromethane	75-09-2	1	50	50	500	500
1,2-dichloropropane	78-87-5	1	50	50	500	500
1,3-dichloropropene (cis and trans)	542-75-6	1	50	50	500	500
1,1,1-trichloroethane	71-55-6	1	50	50	500	500
1,1,2-trichloroethane	79-00-5	1	50	50	500	500
carbon tetrachloride	56-23-5	1	50	50	500	500
lindane ⁸	58-89-9	0.1				
<i>chlorinated benzenes</i>						
monochlorobenzene	108-90-7	1	10	10	100	100
1,2-dichlorobenzene	95-50-1	1	10	10	100	100
1,3-dichlorobenzene	541-73-1	1	10	10	100	100
1,4-dichlorobenzene	106-46-7	1	10	10	100	100
1,2,3-trichlorobenzene	87-61-6	0.5	20	20	100	100
1,2,4-trichlorobenzene	120-82-1	0.5	20	20	100	100
1,3,5-trichlorobenzene	180-70-3	0.5	20	20	100	100
1,2,3,4-tetrachlorobenzene	634-66-2	0.5	20	20	100	100
1,2,3,5-tetrachlorobenzene	634-90-2	0.5	20	20	100	100
1,2,4,5-tetrachlorobenzene	95-94-3	0.5	20	20	100	100
pentachlorobenzene	608-93-5	0.5	20	20	100	100
hexachlorobenzene	118-74-1	0.5	20	20	100	100
MONOCYCLIC AROMATIC HYDROCARBONS (MAHS)						
Styrene	100-42-5	1	50	50	500	500

Table 2. Environmental Health Invertebrate and Plant Soil Exposure Upper Cap Concentrations for Schedule 4 Substances^{1,2}

COLUMN I Substance	COLUMN II CAS No.	COLUMN III Agricultural (AL)	COLUMN IV Urban Park (PL)	COLUMN V Residential (RL)	COLUMN VI Commercial (CL)	COLUMN VII Industrial (IL)
PHENOLIC SUBSTANCES						
<i>Chlorinated Phenols</i>						
2-chlorophenol	95-57-8	0.5	5	5	50	50
3-chlorophenol	108-43-0	0.5	5	5	50	50
4-chlorophenol	106-48-9	0.5	5	5	50	50
2,3-dichlorophenol	576-24-9	0.5	5	5	50	50
2,4-dichlorophenol	120-83-2	0.5	5	5	50	50
2,5-dichlorophenol	583-78-8	0.5	5	5	50	50
2,6-dichlorophenol	87-65-0	0.5	5	5	50	50
3,4-dichlorophenol	95-77-2	0.5	5	5	50	50
3,5-dichlorophenol	591-35-5	0.5	5	5	50	50
2,3,4-trichlorophenol	15950-66-0	0.5	5	5	50	50
2,3,5-trichlorophenol	933-78-8	0.5	5	5	50	50
2,3,6-trichlorophenol	933-75-5	0.5	5	5	50	50
2,4,5-trichlorophenol	95-95-4	0.5	5	5	50	50
2,4,6-trichlorophenol	88-06-2	0.5	5	5	50	50
3,4,5-trichlorophenol	609-19-8	0.5	5	5	50	50
2,3,4,5-tetrachlorophenol	4901-51-3	0.5	5	5	50	50
2,3,4,6-tetrachlorophenol	58-90-2	0.5	5	5	50	50
2,3,5,6-tetrachlorophenol	935-95-5	0.5	5	5	50	50
<i>nonchlorinated phenols</i>						
phenol	108-95-2	1	10	10	100	100
2-cresol (2-methylphenol)	95-48-7	1	10	10	100	100
3-cresol (3-methylphenol)	108-39-4	1	10	10	100	100
4-cresol (4-methylphenol)	106-44-5	1	10	10	100	100
2,4-dimethylphenol	105-67-9	1	10	10	100	100

Table 2. Environmental Health Invertebrate and Plant Soil Exposure Upper Cap Concentrations for Schedule 4 Substances^{1,2}

COLUMN I Substance	COLUMN II CAS No.	COLUMN III Agricultural (AL)	COLUMN IV Urban Park (PL)	COLUMN V Residential (RL)	COLUMN VI Commercial (CL)	COLUMN VII Industrial (IL)
2-nitrophenol	88-75-5	1	10	10	100	100
4-nitrophenol	100-02-7	1	10	10	100	100
2,4-dinitrophenol	51-28-5	1	10	10	100	100
2-methyl-4,6-dinitrophenol	8071-51-0	1	10	10	100	100
PHTHALIC ACID ESTERS						
dibutyl phthalate (DBP)	84-74-2	300				
di (2-ethylhexyl) phthalate (DEHP)	117-81-7	300				
POLYCYCLIC AROMATIC HYDROCARBONS (PAHS)						
benz[a]anthracene	56-55-3	1	10	10	100	100
benzo[b]fluoranthene	205-99-2	1	10	10	100	100
benzo[k]fluoranthene	207-08-9	1	10	10	100	100
dibenz[a,h]anthracene	53-70-3	1	10	10	100	100
indeno (1,2,3-c,d) pyrene	193-39-5	1	10	10	100	100
naphthalene	91-20-3	1	50	50	500	500
phenanthrene	85-01-8	1	50	50	500	500
pyrene	129-00-0	1	100	100	1 000	1 000

1. All values in ug/g unless otherwise stated. Substances must be analyzed using methods specified in a director's protocol or alternate methods acceptable to the director
2. Upper cap concentrations were derived by application of a 10x upper cap multiplier to existing Schedule 4 soil quality standards for substance and corresponding land use.
3. WAD means weak acid dissociable.
4. SAD means strong acid dissociable.
5. VPHs includes: volatile petroleum hydrocarbons with the exception of benzene, toluene, ethylbenzene, and xylenes.
6. LEPHs includes: 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.

7. HEPHs includes: 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.
8. Lindane is 1,2,3,4,5,6-hexachlorocyclohexane, gamma isomer.

Table 3. Human Health Soil Ingestion Exposure Upper Cap Concentrations for Schedule 5 Substances^{1,2}

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V	COLUMN VI	COLUMN VII
Substance	CAS No.	Agricultural (AL)	Urban Park (PL)	Residential (RL)	Commercial (CL)	Industrial (IL)
arsenic	7440-38-2	1000	1000	1000	3000	3000
barium	7440-39-3	65 000	65 000	65 000	200 000	> 1 000 mg/g ³
benzene	71-43-2	10 000	10 000	10 000	40 000	65 000
benzo[a]pyrene (B[a]P)	50-32-8	50	50	50	150	500
cadmium	7440-43-9	30 or 350 ⁴	30 or 350 ⁴	30 or 350 ⁴	1000 ⁵	35 000 ⁵
chloride ion	7647-14-5	>1 000 mg/g ³	>1 000 mg/g ³	>1 000 mg/g ³	>1 000 mg/g ³	> 1 000 mg/g ³
chromium	7440-47-3	1 000 ⁶	1 000 ⁶	1 000 ⁶	3 000 ⁶	200 000 ⁶
copper	7440-50-8	150 000	150 000	150 000	500 000	> 1 000 mg/g ³
dichlorodiphenyl- trichloroethane (DDT)	50-29-3	150 ⁷	150 ⁷	150 ⁷	500 ⁷	35 000 ⁷
ethylbenzene	100-41-4	35 000	35 000	35 000	100 000	> 1 000 mg/g ³
ethylene glycol	107-21-1	650 000	650 000	650 000	>1 000 mg/g ³	> 1 000 mg/g ³
lead	7439-92-1	4 000	4 000	4 000	7 000	40 000
mercury (inorganic)	7439-97-6	150	150	150	400	20 000
pentachlorophenol	87-86-5	1 000	1 000	1 000	3 000	350 000
polychlorinated biphenyls (PCBs)	1336-36-3	50	50	50	150	500
polychlorinated dioxins and furans (PCDDs and PCDFs)	1746-01-6	0.0035	0.0035	0.0035	0.01	0.7
sodium ion	7440-23-5	>1 000 mg/g ³	>1 000 mg/g ³	>1 000 mg/g ³	>1 000 mg/g ³	> 1 000 mg/g ³
tetrachloroethylene (PERC)	127-18-4	10 000	10 000	10 000	35 000	700 000
toluene	108-88-3	400 000	400 000	400 000	1 000 mg/g	> 1 000 mg/g ³
trichloroethylene (TCE)	79-01-6	2 000	2 000	2 000	6 000	100 000
xylene	1330-20-7	650 000	650 000	650 000	>1 000 mg/g ³	> 1 000 mg/g ³
zinc	7440-66-6	100 000	100 000	100 000	300 000	> 1 000 mg/g ³

1. All values in ug/g unless otherwise stated. Substances must be analyzed using methods specified in a director's protocol or alternate methods acceptable to the director.
2. Upper cap concentrations were derived by application of a 10x upper cap multiplier to existing Schedule 5 human health protection soil ingestion exposure soil quality standards for substance and corresponding land use.
3. Upper cap concentration derived for substance and corresponding land use exceeds unity.
4. If the land is used to grow produce for human consumption, the upper cap value is 30 ug/g; if not, the upper cap value is 350 ug/g.
5. Upper cap concentration is applicable only to land which is not used to grow produce for human consumption.
6. Upper cap concentration is for chromium (+6).
7. Upper cap concentration is for the sum of DDT and DDT metabolites.

**Table 4. Environmental Health Soil Invertebrate and Plants and Livestock Ingesting Soil and Fodder Exposures
Upper Cap Concentrations for Schedule 5 Substances^{1,2}**

COLUMN I	COLUMN II	COLUMN III Toxicity to Soil Invertebrates and Plants Agricultural (AL)	COLUMN IV Toxicity to Soil Invertebrates and Plants Urban Park (PL)	COLUMN V Toxicity to Soil Invertebrates and Plants Residential (RL)	COLUMN VI Toxicity to Soil Invertebrates and Plants Commercial (CL)	COLUMN VII Toxicity to Soil Invertebrates and Plants Industrial (IL)	COLUMN VIII Livestock Ingesting Soil and Fodder Agricultural (AL)
Substance	CAS No.						
arsenic	7440-38-2	500	500	500	1 000	1 000	250
barium	7440-39-3	10 000	10 000	10 000	15 000	15 000	4 000
benzene	71-43-2	700	700	700	1 500	1 500	
benzo[a]pyrene (B[a]P)	50-32-8	1	10	10	100	100	
cadmium	7440-43-9	700	700	700	5 000	5 000	90
chloride ion (Cl ⁻)	7647-14-5	3 500	3 500	3 500	25 000	25 000	
chromium	7440-47-3	3 000 ³	3 000 ³	3 000 ³	7 000 ³	7 000 ³	1 500 ⁴ , 500 ⁵
copper	7440-50-8	1 500	1 500	1 500	2 500	2 500	1 500
dichlorodiphenyl- trichloroethane (DDT)	50-29-3	100 ⁶	100 ⁶	100 ⁶	150 ⁶	150 ⁶	
ethylbenzene	100-41-4	10	10	10	200	200	
ethylene glycol	107-21-1	55 000	55 000	55 000	200 000	200 000	
lead	7439-92-1	10 000	10 000	10 000	20 000	20 000	3 500
mercury (inorganic)	7439-97-6	1 000	1 000	1 000	1 500	1 500	6
pentachlorophenol	87-86-5	200	200	200	500	500	
polychlorinated biphenyls (PCBs)	1336-36-3	5	50	50	500	500	
polychlorinated dioxins and furans (PCDDs and PCDFs)	1746-01-6	0.0001	0.01	0.01	0.025	0.025	
sodium ion (Na ⁺)	7440-23-5	2 000	2 000	2 000	10 000	10 000	
tetrachloroethylene (PERC)	127-18-4	1	50	50	500	500	

**Table 4. Environmental Health Soil Invertebrate and Plants and Livestock Ingesting Soil and Fodder Exposures
Upper Cap Concentrations for Schedule 5 Substances^{1,2}**

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V	COLUMN VI	COLUMN VII	COLUMN VIII
Substance	CAS No.	Toxicity to Soil Invertebrates and Plants Agricultural (AL)	Toxicity to Soil Invertebrates and Plants Urban Park (PL)	Toxicity to Soil Invertebrates and Plants Residential (RL)	Toxicity to Soil Invertebrates and Plants Commercial (CL)	Toxicity to Soil Invertebrates and Plants Industrial (IL)	Livestock Ingesting Soil and Fodder Agricultural (AL)
toluene	108-88-3	15	15	15	250	250	
trichloroethylene (TCE)	79-01-6	1	50	50	500	500	
xylenes	1330-20-7	1	50	50	500	500	
zinc	7440-66-6	4 500	4 500	4 500	6 000	6 000	2 000

1. All values in ug/g unless otherwise stated. Substances must be analyzed using methods specified in a director's protocol or alternate methods acceptable to the director.
2. Upper cap concentrations were derived by application of a 10x upper cap multiplier to existing Schedule 5 environmental health soil invertebrate and plants and livestock ingesting soil and fodder, soil quality standards for substance and corresponding land use.
3. Upper cap concentration is for chromium (total).
4. Upper cap concentration is for chromium (+6).
5. Upper cap concentration is for chromium (+3).
6. Upper cap concentration is for sum of DDT and DDT metabolites.

Table 5. Human and Environmental Health Water Exposure Upper Cap Concentrations for Schedule 6 Substances¹

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V	COLUMN VI
Substance	CAS No.	Aquatic Life ² (AW)	Irrigation ^{2,3} (IW)	Livestock ² (LW)	Drinking Water ⁴ (DW)
INORGANIC SUBSTANCES					
aluminum	7429-90-5		5 000	5 000	9 500 ^{5,6}
ammonia	7664-41-7	13 100 @ pH $\geq 8.5^{7,8}$ 37 000 @ pH 8.0 - < 8.5 ^{7,8} 113 000 @ pH 7.5 - < 8.0 ^{7,8} 185 000 @ pH 7.0 - < 7.5 ^{7,8} 184 000 @ pH < 7.0 ^{7,8} 23 000 @ pH $\geq 8.5^{9,10}$ 68 500 @ pH 8.0 - < 8.5 ^{9,10} 200 000 @ pH 7.5 - < 8.0 ^{9,10} 640 000 @ pH 7.0 - < 7.5 ^{9,10} >1 000 mg/L @ pH < 7.0 ^{9,10}			
antimony	7440-36-0	2 000			6
arsenic	7440-38-2	500 ⁸ , 1 250 ¹⁰	100	25	10
barium	7440-39-3	100 000 ⁸ , 50 000 ¹⁰			1 000
beryllium	7440-41-7	530 ⁸ , 10 000 ¹⁰	100	100	
boron	7440-42-8	500 000	500 - 6 000 ¹¹	5 000	5 000
bromate	15541-45-4				10
cadmium	7440-43-9	1 @ H $\leq 30^{8,12}$ 3 @ H = 30 - < 90 ^{8,12} 5 @ H = 90 - < 150 ^{8,12} 6 @ H 150 - < 210 ^{8,12} 10 ¹⁰	5	80	5
calcium	7440-70-2			1 000 mg/L	
chloride	7647-14-5	15 000 mg/L ⁸	100 mg/L ¹³	600 mg/L	250 mg/L ¹⁴
chlorine	7782-50-5	200 ⁸ , 300 ¹⁰	1 000		

Table 5. Human and Environmental Health Water Exposure Upper Cap Concentrations for Schedule 6 Substances¹

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V	COLUMN VI
Substance	CAS No.	Aquatic Life ² (AW)	Irrigation ^{2,3} (IW)	Livestock ² (LW)	Drinking Water ⁴ (DW)
chromium	7440-47-3	100 ^{8,15} , 900 ^{8,16} 1 500 ^{10,15} , 5 600 ^{10,16}	8 ¹⁵ , 5 ¹⁶	50 ^{15,16}	50
cobalt	7440-48-4	400	50	1 000	
copper	7440-50-8	200 @ H < 50 ^{8,12} 300 @ H = 50 - < 75 ^{8,12} 400 @ H = 75 - < 100 ^{8,12} 500 @ H = 100 - < 125 ^{8,12} 600 @ H = 125 - < 150 ^{8,12} 700 @ H = 150 - < 175 ^{8,12} 800 @ H = 175 - < 200 ^{8,12} 900 @ H ≥ 200 ^{8,12} 200 ¹⁰	200	300	1 000 ¹⁴
cyanide (WAD) ¹⁷	57-12-5	500 ⁸ , 100 ¹⁰			
cyanide (SAD) ¹⁸	57-12-5				200
fluoride	7782-41-4	20 000 @ H < 50 ^{8,12} 30 000 @ H ≥ 50 ^{8,12} 150 000 ¹⁰	1 000	1 000 ¹⁹	1 500
iron	7439-89-6		5 000		6 500 ^{6,7,20,21}
lead	7439-92-1	400 @ H < 50 ^{8,12} 500 @ H = 50 - < 100 ^{8,12} 600 @ H = 100 - < 200 ^{8,12} 1 100 @ H = 200 - < 300 ^{8,12} 1 600 @ H ≥ 300 ^{8,12} 200 ¹⁰	200	100	10
lithium	7439-93-2		2 500 ¹³	5 000	
magnesium	7439-95-4				100 mg/L ¹⁴
manganese	7439-96-5		200		550 ^{6,7,22,23}

Table 5. Human and Environmental Health Water Exposure Upper Cap Concentrations for Schedule 6 Substances¹

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V	COLUMN VI
Substance	CAS No.	Aquatic Life ² (AW)	Irrigation ^{2,3} (IW)	Livestock ² (LW)	Drinking Water ⁴ (DW)
mercury	7439-97-6	10	1	2	1
molybdenum	7439-98-7	100 000	10 - 30 ²⁴	50	250
monochloramine	10599-90-3	50 ²⁵			3 000 ²⁶
nickel	7440-02-0	2 500 @ H < 60 ^{8,12} 6 500 @ H = 60 - < 120 ^{8,12} 11 000 @ H = 120 - < 180 ^{8,12} 15 000 @ H ≥ 180 ^{8,12} 830 ¹⁰	200	1000	
nitrate (as N)	14797-55-8	4 000 mg/L ²⁷		100 mg/L ²⁸	10 000 ²⁸
nitrate and nitrite (as N)	14797-55-8 14797-65-0	4 000 mg/L ²⁷		100 mg/L ²⁸	10 000 ²⁸
nitrite (as N)	14797-65-0	2 000 (Cl < 2 mg/L) ²⁹ 4 000 (Cl = 2 - < 4 mg/L) ²⁹ 6 000 (Cl = 4 - < 6 mg/L) ²⁹ 8 000 (Cl = 6 - < 8 mg/L) ²⁹ 10 000 (Cl = 8 - < 10 mg/L) ²⁹ 20 000 (Cl ≥ 10 mg/L) ²⁹		10 000	3 200
salinity ³⁰		150 g/L ^{8,31,32} 100 g/L if natural salinity is 0 - < 3.5 g/L ^{10,31,33} 200 g/L if natural salinity is 3.5 - < 13.5 g/L ^{10,31,33} 400 g/L if natural salinity is 13.5 - 35 g/L ^{10,31,33}			
selenium	7782-49-2	100 ⁸ , 5 400 ¹⁰	20 ³⁴ , 50 ³⁵	50	10
silver	7440-22-4	5 @ H ≤ 100 ^{8,12} 150 @ H > 100 ^{8,12} 150 ¹⁰			

Table 5. Human and Environmental Health Water Exposure Upper Cap Concentrations for Schedule 6 Substances¹

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V	COLUMN VI
Substance	CAS No.	Aquatic Life ² (AW)	Irrigation ^{2,3} (IW)	Livestock ² (LW)	Drinking Water ⁴ (DW)
sodium	7440-23-5				200 mg/L ¹⁴
sulphate	14808-79-8	10 000 mg/L		1 000 mg/L	500 mg/L ¹⁴
sulphide (as H ₂ S)	7783-06-4	200			50 ¹⁴
thallium	7440-28-0	30			
titanium	7440-32-6	10 000			
uranium	7440-61-1	30 000 ⁸ , 10 000 ¹⁰	10	200	20
vanadium	1314-62-1		100	100	
zinc	7440-66-6	750 @ H ≤ 90 ^{8,12} 1 500 @ H = 90 - < 100 ^{8,12} 9 000 @ H = 100 - < 200 ^{8,12} 16 500 @ H = 200 - < 300 ^{8,12} 24 000 @ H = 300 - < 400 ^{8,12} 1 000 ¹⁰	1 000 @ pH ≤ 6.0 ³⁶ 2 000 @ pH 6.0 - < 7.0 ³⁶ 5 000 @ pH ≥ 7.0 ³⁶	2 000	5 000 ¹⁴
MISCELLANEOUS INORGANIC AND ORGANIC SUBSTANCES					
acrolein	107-02-8			3 ³⁷	
aniline	62-53-3	200			
methyl tertiary butyl ether (MTBE)	1634-04-4	340 000 ⁸ , 44 000 ¹⁰		11 000	15
nitrilotriacetic acid (NTA)	139-13-9				400
VPHw		15 000 ³⁸			
LEPHw		5 000 ³⁹			
VHw6-10		15 000 ^{40,41}	15 000 ^{40,41}	15 000 ^{40,41}	15 000 ^{40,41}
EPHw10-19		5 000 ^{40,42}	5 000 ^{40,42}	5 000 ^{40,42}	5 000 ^{40,42}
ORGANIC SUBSTANCES Chlorinated Hydrocarbons <i>chlorinated aliphatics</i>					
hexachlorobutadiene, 1,3	87-68-3	10			

Table 5. Human and Environmental Health Water Exposure Upper Cap Concentrations for Schedule 6 Substances¹

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V	COLUMN VI
Substance	CAS No.	Aquatic Life ² (AW)	Irrigation ^{2,3} (IW)	Livestock ² (LW)	Drinking Water ⁴ (DW)
hexachlorocyclohexane ⁴³	27154-44-5	1		4	4
vinyl chloride	75-01-4				2
<i>chlorinated benzenes</i>					
dichlorobenzene, 1,2-	95-50-1	70 ⁶ , 4 200 ¹⁰			3 ¹⁴
dichlorobenzene, 1,3-	541-73-1	15 000			
dichlorobenzene, 1,4-	106-46-7	2 600			1 ¹⁴
hexachlorobenzene	118-74-1			0.5	
monochlorobenzene	108-90-7	130 ⁸ , 1 200 ¹⁰			30 ¹⁴
pentachlorobenzene	608-93-5	600			
tetrachlorobenzene, 1,2,3,4-	634-66-2	180			
trichlorobenzene, 1,2,3-	87-61-6	800			
trichlorobenzene, 1,2,4-	120-82-1	2 400 ⁸ , 540 ¹⁰			
<i>chlorinated ethanes</i>					
dichloroethane, 1,2-	107-06-2	10 000		5	5
<i>chlorinated ethenes</i>					
dichloroethylene, 1,1- (dichloroethene, 1,1-)	540-59-0				14
tetrachloroethylene (tetrachloroethene, 1,1,2,2-)	127-18-4	11 000			30
trichloroethylene (trichloroethene, 1,1,2-)	79-01-6	2 000		50	5
GLYCOLS					
ethylene glycol	107-21-1	19 200 mg/L			
propylene glycol, 1,2-	57-556	50 000 mg/L			
HALOGENATED METHANES					
bromodichloromethane (BDCM)	75-27-4			100	16

Table 5. Human and Environmental Health Water Exposure Upper Cap Concentrations for Schedule 6 Substances¹

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V	COLUMN VI
Substance	CAS No.	Aquatic Life ² (AW)	Irrigation ^{2,3} (IW)	Livestock ² (LW)	Drinking Water ⁴ (DW)
dibromochloromethane (DBCM)	124-48-1			100	100 ⁴⁴
dichloromethane (methylene chloride)	75-09-2	9 800		50	50
tetrachloromethane (carbon tetrachloride)	56-23-5	1 300		5	5
tribromomethane (bromoform)	75-25-2			100	100 ⁴⁴
trichloromethane (chloroform)	67-66-3	200		100	100 ⁴⁴
MONOCYCLIC AROMATIC HYDROCARBONS (MAHs)					
benzene	71-43-2	40 000 ⁸ , 10 000 ¹⁰			5
ethylbenzene	100-41-4	20 000 ⁸ , 25 000 ¹⁰			2.4 ¹⁴
styrene	100-42-5	7 200			
toluene	108-88-3	3 900 ⁸ , 33 000 ¹⁰			24 ¹⁴
xylene (total)	1330-20-7				300 ¹⁴
ORGANOTINS					
di-n-butyltin	1002-53-5	8			
tributyltin	688-73-3	0.8 ⁸ , 0.5 ^{10,37}		250	
tricyclohexyltin	13121-70-5			250 ⁴⁵	
triethyltin	2943-86-4	40 ⁴⁵			
triphenyltin	668-34-8	2 ⁴⁵		800 ⁴⁵	
PHENOLIC SUBSTANCES <i>chlorinated phenols</i>					
dichlorophenol	576-24-9 120-83-2 583-78-8 87-65-0 95-77-2 591-35-5	25 – 3 400 ⁴⁶		0.3 ¹⁴	0.3 ¹⁴
monochlorophenol	95-57-8	85 – 6 500 ⁴⁶		0.1 ¹⁴	0.1 ¹⁴

Table 5. Human and Environmental Health Water Exposure Upper Cap Concentrations for Schedule 6 Substances¹

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V	COLUMN VI
Substance	CAS No.	Aquatic Life ² (AW)	Irrigation ^{2,3} (IW)	Livestock ² (LW)	Drinking Water ⁴ (DW)
pentachlorophenol	87-86-5	10 – 275 ⁴⁶		30 ¹⁴	30 ¹⁴
tetrachlorophenol	58-90-2	20 – 1 800 ⁴⁶		1 ¹⁴	1 ¹⁴
trichlorophenol	15950-66-0 933-78-8 933-75-5 95-95-4 88-06-2 609-19-8	10 – 2 700 ⁴⁶		2 ¹⁴	2 ¹⁴
<i>nonchlorinated phenols</i>					
nonchlorinated phenols (total)		100			
PHTHALIC ACID ESTERS					
dibutyl phthalate (DBP)	84-74-2	1 900			
di(2-ethylhexyl) phthalate (DEHP)	117-81-7	1 600			
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)					
acenaphthene	83-32-9	600			
acridine	260-94-6	5			
anthracene	120-12-7	10			
benz[a]anthracene	56-55-3	10			
benzo[a]pyrene	50-32-8	1			0.01
chrysene	218-01-9	10			
fluoranthene	206-44-0	20			
fluorene	86-73-7	1 200			
naphthalene	91-20-3	100			
phenanthrene	85-01-8	30			
pyrene	129-00-0	2			
quinoline	91-22-5	340			
PESTICIDES					
aldicarb	116-06-3	100 ⁸ , 15 ¹⁰	54.9 ⁴⁷ , 67.5 ⁴⁸	11	9

Table 5. Human and Environmental Health Water Exposure Upper Cap Concentrations for Schedule 6 Substances¹

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V	COLUMN VI
Substance	CAS No.	Aquatic Life ² (AW)	Irrigation ^{2,3} (IW)	Livestock ² (LW)	Drinking Water ⁴ (DW)
aldrin and dieldrin	309-00-2 60-57-1	0.4		0.7	0.7
atrazine	1912-24-9	200 ⁸ , 1 000 ¹⁰	10	60	5
azinphos-methyl	86-50-0			20	20
bendiocarb	22781-23-3			40	40
bromacil	314-40-9	500	0.2 ⁴⁹ , 0.6 ⁵⁰	1 100	
bromoxynil	1689-84-5	500	0.35 ⁴⁸	11	5
captan	133-06-2	280		10	
carbaryl	63-25-2	20 ⁸ , 30 ¹⁰		1 100	90
carbofuran	1563-66-2	180		45	90
chlordane	57-74-9	0.6		7	7
chlorothalonil	1897-45-6	20 ⁸ , 40 ¹⁰	5.8	170	
chlorpyrifos	2921-88-2	0.35 ⁸ , 0.2 ¹⁰		24	90
cyanazine	21725-46-2	200	0.5	10	10
2,4-D ⁵¹	94-75-7	400		100	100
DDT ⁵²	50-29-3	0.1 ⁵³		30 ⁵³	30 ⁵³
deltamethrin	52918-63-5	1 ³⁷		2.5	
diazinon	333-41-5	0.3		14	20
dicamba	62610-39-3	1 000	0.1 ³⁷	122	120
diclofop-methyl	51338-27-3	610	0.18	9	9
dimethoate	60-51-5	620		3	20
dinoseb	88-85-7	5	16 ¹³ , 46 ⁵⁴ , 93 ⁵⁰	150	10
diquat	85-00-7			70	70
diuron	330-54-1			150	150
endosulfan	115-29-7	2			
endrin	72-20-8	0.23		0.2	
glyphosate	1071-83-6	6 500		280	280
heptachlor & heptachlor epoxide	76-44-8	1		3	3
lindane ⁵⁶	58-89-9	1		4	4

Table 5. Human and Environmental Health Water Exposure Upper Cap Concentrations for Schedule 6 Substances¹

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V	COLUMN VI
Substance	CAS No.	Aquatic Life ² (AW)	Irrigation ^{2,3} (IW)	Livestock ² (LW)	Drinking Water ⁴ (DW)
linuron	330-55-2	700	0.5 ^{37,49} , 3.3 ⁵⁰		
malathion	121-75-5	10		190	190
MCPA ⁵⁷	94-74-6	260 ⁸ , 420 ¹⁰	0.5 ³⁷	25	100
methoxychlor	72-43-5			900	900
metolachlor	51218-45-2	800	28	50	50
metribuzin	21087-64-9	100	0.5	80	80
paraquat (as dichloride)	1910-42-5			10	10
parathion	56-38-2			50	50
phorate	298-02-2			2	2
picloram	1918-02-1	2 900	0.5	190	190
simazine	122-34-9	1 000	0.5	10	10
2,4,5-T ⁵⁸	93-76-5			20	20
tebuthiuron	34014-18-1	160	2 ^{37,50}	130	
temephos	3383-96-8			280	280
terbufos	13071-79-9			1	1
toxaphene ⁵⁹	8001-35-2	0.8		5	
triallate	2303-17-5	24		230	230
trifluralin	75635-23-3	10		45	45

1. All values are in ug/L unless otherwise stated. Substances must be analyzed using methods specified in a director's protocol or alternate methods acceptable to the director.

1(a). Upper cap concentrations were derived by application of a 10x upper cap multiplier to existing Schedule 6 Aquatic Life protective water quality standards and a 1x upper cap multiplier to existing Schedule 6 Irrigation, Livestock and Drinking Water protective water quality standards for substance and corresponding water use.

2(a). Aquatic life upper cap concentrations assume minimum 1:10 dilution available. Aquatic life upper cap concentrations are applicable to freshwater and marine life unless otherwise indicated.

2(b). Upper cap concentrations for all organic substances are for total substance concentrations. Any water sample to be analyzed for organic substances should not be filtered.

2(c). Upper cap concentrations for surface water samples to be analyzed for heavy metals, metalloids and inorganic ions are total substance concentrations. In addition, it is recommended that surface water samples being analyzed for heavy metals, metalloids and inorganic ions should also be analyzed for dissolved substance concentrations.

- 2(d). Upper cap concentrations for groundwater samples to be analyzed for heavy metals, metalloids and inorganic ions are for dissolved substance concentrations. In addition, it is recommended that groundwater samples being analyzed for heavy metals, metalloids and inorganic ions should be analyzed for total substance concentrations.
3. Applies to irrigation of all soil types.
 4. Drinking Water upper cap concentrations are for unfiltered samples obtained at the point of consumption. Heavy metals, metalloids and inorganic ions are expressed as total substance concentrations unless otherwise indicated.
 5. Upper cap concentration has been derived based on a toxicological reference value (TRV) protective of adults. Upper cap concentration may not adequately protect other age groups.
 6. Upper cap concentration may not address aesthetic (organoleptic) concerns related to drinking water quality.
 7. Upper cap concentration varies with pH and temperature. 10°C is assumed. Consult director for further advice.
 8. Upper cap concentration is applicable to freshwater aquatic life.
 9. Upper cap concentration varies with pH, temperature and salinity. 10°C and 10 g/L is assumed. Consult director for further advice.
 10. Upper cap concentration is applicable to marine and/or estuarine aquatic life.
 11. Upper cap concentration varies depending on crop as follows:

Crop	Upper Cap Concentration (ug/L)
blackberry	5 00
barley, cherry, cowpea, garlic, grape, Jerusalem artichoke, kidney bean, lima bean, lupin, mung bean, onion, peach, plum, sesame, strawberry, sunflower, sweet potato, wheat	1 000
carrot, cucumber, pea, potato, radish, red pepper	2 000
artichoke, bluegrass (Kentucky), cabbage, celery, clover, corn, lettuce, muskmelon, mustard, oat, squash, tobacco, turnip	4 000
alfalfa, asparagus, parsley, purple vetch, red beet, sorghum, sugar beet, tomato	6 000

12. H means water hardness in mg/L CaCO₃.
13. Upper cap concentration is applicable to all types of crops.
14. Upper cap concentration is applicable to taste and odour concerns.
15. Upper cap concentration is specific to chromium (+6).
16. Upper cap concentration is specific to chromium (+3).
17. WAD means weak acid dissociable.
18. SAD means strong acid dissociable.
19. Upper cap concentration varies with type of livestock. Consult director for further advice.
20. Upper cap concentration applies to sites used for the following industrial or commercial purposes and activities set out in Schedule 2:
 - A6. ink or dye manufacturing or wholesale bulk storage
 - A7. leather or hides tanning

- A8. paint, lacquer or varnish manufacturing, formulation, recycling or wholesale bulk storage
 - A11. textile dying
 - C1. foundries or scrap metal smelting
 - C2. galvanizing
 - C3. metal plating or finishing
 - C4. metal salvage operations
 - C6. welding or machine shops (repair or fabrication)
 - D2. coal coke manufacture, wholesale bulk storage or shipping
 - D3. coal or lignite mining, milling, wholesale bulk storage or shipping
 - D5. nonferrous metal concentrate wholesale bulk storage or shipping
 - D6. nonferrous metal mining or milling
 - E4. coal gasification (manufactured gas production)
 - H14. mine tailings waste disposal.
21. Upper cap concentration applies to sites used for the following industrial or commercial purposes and activities set out in Schedule 2, if they occurred in conjunction with one or more of the industrial or commercial purposes and activities listed in footnote 20:
- H11. industrial waste lagoons or impoundments
 - H20. hazardous waste storage, treatment or disposal.
22. Upper cap concentration applies to sites used for the following industrial or commercial purposes and activities set out in Schedule 2:
- B1. battery (lead acid or other) manufacturing or wholesale bulk storage
 - C1. foundries or scrap metal smelting
 - C3. metal plating or finishing
 - C4. metal salvage operations
 - D2. coal coke manufacture, wholesale bulk storage or shipping
 - D3. coal or lignite mining, milling, wholesale bulk storage or shipping
 - D5. nonferrous metal concentrate wholesale bulk storage or shipping
 - D6. nonferrous metal mining or milling
 - E4. coal gasification (manufactured gas production)
 - H3. battery (lead acid or other) recycling
 - H14. mine tailings waste disposal.
23. Upper cap concentration applies to sites used for the following industrial or commercial purposes and activities set out in Schedule 2, if they occurred in conjunction with one or more of the industrial or commercial purposes and activities listed in footnote 22:
- H11. industrial waste lagoons or impoundments
 - H20. hazardous waste storage, treatment or disposal.
24. Upper cap concentration varies with crop, soil drainage and Mo:Cu ratio. Consult director for further advice.
25. Substance is extremely labile in water. Extended hold times are inappropriate. It is recommended that samples be analysed in the field or immediately upon receipt by laboratory.
26. Upper cap concentration is specific for total chloramines.

27. Upper cap concentration may not be applicable for all amphibians. Consult director for further advice.
28. Where nitrate and nitrite are present, total nitrate plus nitrite-nitrogen should not exceed this value.
29. Upper cap concentration varies with chloride concentration. Consult director for further advice.
30. Values of salinity provided for a sample in g/L or on the Practical Salinity Scale (PSS) are equivalent.
31. Upper cap concentration applies only if minimum 1:10 dilution available in receiving waterbody.
32. Freshwater is defined as water having a natural salinity < 1.5 g/L.
33. Upper cap concentration varies with natural salinity of receiving waterbody.
34. Upper cap concentration for continuous applications on crops.
35. Upper cap concentration for intermittent application on crops.
36. Upper cap concentration varies with soil pH.
37. Upper cap concentration has been adjusted based on the reference analytical detection limit for the substance.
38. VPHw includes volatile petroleum hydrocarbons with the exception of benzene, toluene, ethylbenzene and xylenes.
39. LEPHw includes light extractable petroleum hydrocarbons with the exception of acenaphthene, acridine, anthracene, fluorene, naphthalene and phenanthrene.
40. Upper cap concentration is applicable at all sites, irrespective of water use.
41. VHW6-10 includes volatile petroleum hydrocarbons.
42. EPHw10-19 includes light extractable petroleum hydrocarbons.
43. Upper cap concentration is applicable to all hexachlorocyclohexane isomers.
44. Upper cap concentration is specific for total trihalomethanes. Sum of the concentrations of bromodichloromethane (BDCM), dibromochloromethane (DBCM), tribromomethane (chloroform) must not exceed the upper cap concentration specified.
45. No reference analytical method has been specified for substance. Consult director for further advice.
46. Upper cap concentration varies with pH, temperature and substance isomer. Consult director for further advice.
47. Upper cap concentration is applicable to crops other than legumes.
48. Upper cap concentration is applicable to legumes.
49. Upper cap concentration is applicable to crops other than cereals, tame hays and pasture.
50. Upper cap concentration is applicable to cereals, tame hays and pasture crops.
51. 2,4-D is 2,4-dichlorophenoxyacetic acid.
52. DDT is 2,2-bis(p-chlorophenyl)-1,1,1-trichloroethane.
53. Includes DDT metabolites.
54. Upper cap concentration is applicable to cereal crops and hay.
55. Upper cap concentration is applicable to lactating dairy animals.
56. Lindane is 1,2,3,4,5,6-hexachlorocyclohexane, gamma isomer.
57. MCPA is 4-chloro-2-methylphenoxy acetic acid.
58. 2,4,5-T is 2,4,5-trichlorophenoxy acetic acid.
59. Upper cap concentration is applicable to all toxaphene isomers.

Table 6. Environmental Health Aquatic Life Sediment Exposure Upper Cap Concentrations for Schedule 9 Substances^{1,2}

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V	COLUMN VI
Substance	CAS No.	Freshwater Sediment ³	Freshwater Sediment ³	Marine and Estuarine Sediment ⁴	Marine and Estuarine Sediment ⁴
		Sensitive ⁵ (SedQC _{SS})	Typical ⁶ (SedQC _{TS})	Sensitive ⁵ (SedQC _{SS})	Typical ⁶ (SedQC _{TS})
INORGANIC SUBSTANCES					
arsenic	7440-38-2	110	200	260	500 ⁷
cadmium	7440-43-9	22	42	26	50
chromium (total)	7440-47-3	560 ⁷	1 100	990	1 900
copper	7440-50-8	1 200	2 400	670	1 300
lead	7439-92-1	570	1 100	690	1 300
mercury	7439-97-6	3	5.8	4.3	8.4
zinc	7440-66-6	2 000	3 800	1 700	3 300
ORGANIC SUBSTANCES Chlorinated Hydrocarbons <i>miscellaneous chlorinated hydrocarbons</i>					
PCBs (total) ⁸	1336-36-3	1.7	3.3	1.2	2.3
PCDDs and PCDFs ⁹	136677-09-3 136677-10-6	0.0013 ⁷	0.0026 ⁷	0.0013	0.0026 ⁷
PHENOLIC SUBSTANCES <i>chlorinated phenols</i>					
pentachlorophenol	87-86-5	4 ¹⁰	8 ¹⁰	3.6 ¹¹	6.9 ¹¹
POLYCYCLIC AROMATIC HYDROCARBONS (PAHS) <i>alkylated low molecular weight PAHs</i>					
2-methylnaphthalene	91-57-6	1.2	2.4	1.2	2.4
<i>low molecular weight PAHs</i>					
acenaphthene	83-32-9	0.55	1.1	0.55	1.1
acenaphthylene	208-96-8	0.8	1.5	0.79	1.5

Table 6. Environmental Health Aquatic Life Sediment Exposure Upper Cap Concentrations for Schedule 9 Substances^{1,2}

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V	COLUMN VI
Substance	CAS No.	Freshwater Sediment ³	Freshwater Sediment ³	Marine and Estuarine Sediment ⁴	Marine and Estuarine Sediment ⁴
		Sensitive ⁵ (SedQC _{SS})	Typical ⁶ (SedQC _{TS})	Sensitive ⁵ (SedQC _{SS})	Typical ⁶ (SedQC _{TS})
anthracene	120-12-7	1.5	2.9	1.5	2.9
fluorene	86-73-7	0.89	1.7	0.89	1.7
naphthalene	91-20-3	2.4	4.7	2.4	4.7
phenanthrene	85-01-8	3.2	6.2	3.4	6.5
<i>high molecular weight PAHs</i>					
benz[a]anthracene	56-55-3	2.4	4.6	4.3	8.3
benzo[a]pyrene	50-32-8	4.8	9.4	4.7	9.2
chrysene	218-01-9	5.3	10	5.2	10
dibenz[a,h]anthracene	53-70-3	0.84	1.6	0.84	1.6
fluoranthene	206-44-0	15	28	9.3	18
pyrene	129-00-0	5.4	11	8.7	17
<i>Total PAHs</i>					
PAHs (total) ¹²		100	200	100	200
PESTICIDES					
chlordan	57-74-9	0.055	0.11	0.03	0.057
DDD (total) ¹³	72-54-8	0.053	0.1	0.048	0.094
DDE (total) ¹⁴	72-55-9	0.042	0.081	2.33	4.5
DDT (total) ¹⁵	50-29-3	0.03	0.057	0.03	0.057
dieldrin	60-57-1	0.041	0.08	0.027	0.052
endrin	72-20-8	0.39	0.75 ⁷	0.39	0.75 ⁷
heptachlor and heptachlor epoxide	76-44-8 1024-57-3	0.017	0.033 ⁷	0.017	0.033
lindane ¹⁶	58-89-9	0.0086 ⁷	0.017 ⁷	0.0061	0.012 ⁷

1. All values are in ug/g dry weight (dwt) unless otherwise stated. Substance must be analyzed using methods specified in a director's protocol or alternate methods acceptable to the director.
2. Upper cap concentrations were derived by application of a 10x upper cap multiplier to existing Schedule 9 sediment quality criteria for substance and corresponding sediment type.
3. Upper cap concentration is applicable to freshwater aquatic life.
4. Upper cap concentration is applicable to marine and/or estuarine aquatic life.
5. Sensitive sediment means sediment at a site with sensitive aquatic habitat and for which sensitive sediment management objectives apply. Consult director for further advice.
6. Typical sediment means sediment that is not sensitive sediment. Consult director for further advice.
7. Denotes an upper cap concentration which is considered less reliable or that could not be fully evaluated.
8. Total PCBs includes either the sum of four to seven Arochlor mixtures (i.e. Arochlor 1016, 1221, 1232, 1242, 1248, 1254 and/or 1260) or the sum of ≥ 20 individual PCB congeners. No discrete upper cap concentration for Arochlor 1254 was derived, since the existing Canadian Council of Ministers of the Environment interim Probable Effects Level (PEL) for that substance was inconsistent with the PEL provided for total PCBs and the Probable Effects Level (PEL) for Arochlor 1254 was derived using methods different from those used to derive the upper cap concentration for total PCBs listed in this table.
9. Calculated using data for PCDDs, PCDFs, PCBs and associated PCDD, PCDF and PCB toxicity equivalency factors.
10. Upper cap concentration is derived from Schedule 9 sediment criteria, which was set equal to the State of New York, Department of Environment Conservation, 1994 criterion for the substance.
11. Upper cap concentration is derived from Schedule 9 sediment criteria, which was set equal to the Washington State, Department of Ecology, 1991 criterion for the substance.
12. PAHs (total) includes: 2-methylnaphthalene, acenaphthalene, acenaphthene, anthracene, benz[a]anthracene, benzo[a]pyrene, chrysene, dibenz[a,h]anthracene, fluorene, fluoranthene, naphthalene, phenanthrene, and pyrene.
13. DDD is 2,2-bis(p-chlorophenyl)-1,1-dichloroethane.
14. DDE is 2,2-bis(p-chlorophenyl)-1,1-dichloroethylene.
15. DDT is 2,2-bis(p-chlorophenyl)-1,1,1-trichloroethane.
16. Lindane is 1,2,3,4,5,6-hexachlorocyclohexane, gamma isomer.

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
acephate	30560-19-1	5 600	20 000	77
acetaldehyde	75-07-0	1 100	2 300	17
acetochlor	34256-82-1	12 000	120 000	730
acetone	67-64-1	140 000	540 000	33 000
acetone cyanohydrin	75-86-5	490	4 900	29
acetonitrile	75-05-8	4 200	18 000	620
acrolein (2-propenal)	107-02-8	1	3.4	18
acrylamide (2-propenamide)	79-06-1	11	38	0.15
acrylic acid (2-propenoic acid)	79-10-7	290 000	1 000 000 ⁵	18 000
acrylonitrile (2-propenenitrile)	107-13-1	21	49	1.2
alachlor	15972-60-8	600	2 100	8.4
alar (daminozide)	1596-84-5	92 000	920 000	5 500
aldicarb	116-06-3	610	6 200	9
aldicarb sulfone	1646-88-4	610	6 200	37
aldrin	309-00-2	2.9	10	0.7
ally (metsulfuron-methyl)	74223-64-6	150 000	1 000 000 ⁵	9 100
allyl alcohol (2-propen-1-ol)	107-18-6	3 100	31 000	180
allyl chloride (3-chloropropene)	107-05-1	170	1 800	10
aluminum phosphide	20859-73-8	310	4 100	15
amdro (hydramethylnon)	67485-29-4	180	1 800	11
ametryn	834-12-8	5 500	55 000	330
3-amino-2,5-dichlorobenzoic acid (chloramben)	133-90-4	9 200	92 000	550

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
aminodinitrotoluene (all isomers)	1321-12-6	120	1 200	7.3
3-aminophenol	591-27-5	43 000	430 000	2 600
4-aminopyridine	504-24-5	12	120	0.73
amitraz	33089-61-1	1 500	15 000	91
ammonium sulfamate	7773-06-0	120 000	1 000 000 ⁵	7 300
aniline	62-53-3	8 500	30 000	120
apollo (clofentezine)	74115-24-5	7 900	80 000	470
aramite	140-57-8	1 900	6 900	27
assure (quizalofop)	76578-14-8	5 500	55 000	330
asulam	3337-71-1	31 000	310 000	1 800
atrazine	1912-24-9	220	780	5
avenge (difenzoquat)	43222-48-6	49 000	490 000	2 900
avermectin B1	71751-41-2	240	2 500	15
azobenzene	103-33-3	440	1 600	6.1
baygon (propoxur)	114-26-1	2 400	25 000	150
bayleton (triadimefon)	43121-43-3	18 000	180 000	1 100
baythroid (cyfluthrin)	68359-37-5	15 000	150 000	910
BCDM (bromodichloromethane)	75-27-4	82	180	16
benefin (benfluralin)	1861-40-1	180 000	1 000 000 ⁵	11 000
benfluralin (benefin)	1861-40-1	180 000	1 000 000 ⁵	11 000
benlate (benomyl)	17804-35-2	31 000	310 000	1 800
benomyl (benlate)	17804-35-2	31 000	310 000	1 800

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
bensulfuron-methyl (londax)	83055-99-6	120 000	1 000 000 ⁵	7 300
bentazon	25057-89-0	18 000	180 000	1 100
benzaldehyde	100-52-7	61 000	620 000	3 700
1,4-benzenediol (hydroquinone)	123-31-9	870	3 100	1 500
1,2,4-benzenetricarboxylic anhydride (trimellitic anhydride) (TMAN))	552-30-7	86	860	5.1
benzidine	92-87-5	0.21	0.75	0.0029
benzoic acid	65-85-0	1 000 000 ⁵	1 000 000 ⁵	150 000
benzotrichloride (α,α,α -trichlorotoluene)	98-07-7	3.7	13	0.052
benzyl alcohol	100-51-6	180 000	1 000 000 ⁵	11 000
benzyl chloride (α -chlorotoluene)	100-44-7	89	22	4.0
beta-chloronaphthalene (2-chloronaphthalene)	91-58-7	49 000	230 000	2 900
bidrin (dicrotophos)	141-66-2	61	620	3.7
biphenthrin (talstar)	82657-04-3	9 200	92 000	550
bis(2-chloroethyl) ether	111-44-4	22	58	0.61
bis(2-chloroisopropyl) ether	39638-32-9	290	740	9.6
bis(chloromethyl) ether	542-88-1	0.019	0.043	0.0031
bis(2-chloro-1-methylethyl) ether	108-60-1	290	740	9.6
bisphenol A	80-05-7	31 000	310 000	1 800
bromate	15541-45-4	69	250	10
bromobenzene	108-86-1	280	920	730
bromodichloromethane (BDCM)	75-27-4	82	180	16

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
bromoform (tribromomethane)	75-25-2	6 200	22 000	100
bromoethene (vinyl bromide)	593-60-2	19	42	6.1
bromomethane (methyl bromide)	74-83-9	39	130	51
bromophos	2104-96-3	3 100	31 000	180
bromoxynil	1689-84-5	12 000	120 000	5
bromoxynil octanoate	1689-99-2	12 000	120 000	730
1,3-butadiene	106-99-0	5.8	12	6.1
1-butanol	71-36-3	61 000	610 000	3 700
2-butanone (methyl ethyl ketone)	78-93-3	220 000	>1 000 mg/g ⁶	22 000
2-butoxyethanol (ethylene glycol, monobutyl ether)	111-76-2	310 000	1 000 000 ⁵	18 000
2-(2-butoxyethoxy)ethanol (diethylene glycol, monobutyl ether)	112-34-5	6 100	62 000	370
butylate	2008-41-5	31 000	310 000	1 800
butylbenzylphthalate	85-68-7	120 000	1 000 000 ⁵	7 300
butylphthalylbutylglycolate	85-70-1	610 000	1 000 000 ⁵	37 000
caprolactam	105-60-2	310 000	1 000 000 ⁵	18 000
captafol	2425-06-1	5 700	20 000	78
captan	133-06-2	14 000	49 000	190
carbaryl	63-25-2	61 000	620 000	90
carbazole	86-74-8	2 400	8 600	34
carbofuran	1563-66-2	3 100	31 000	90
carbon disulfide	75-15-0	3 600	7 200	3 700

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
carbosulfan	55285-14-8	6 100	62 000	370
carboxin	5234-68-4	61 000	620 000	3 700
chloramben (3-amino-2,5-dichlorobenzoic acid)	133-90-4	9 200	92 000	550
chloranil	118-75-2	120	430	1.7
chlordane	12789-03-6	160	650	7
chlordecone (kepone)	143-50-0	6.1	22	0.084
chlorimuron-ethyl	90982-32-4	12 000	120 000	730
chloroacetic acid	79-11-8	1 200	12 000	73
2-chloroacetophenone	532-27-4	0.33	1.1	0.31
4-chloroaniline	106-47-8	2 400	25 000	150
chlorobenzilate	510-15-6	180	640	2.5
4-chlorobenzoic acid	74-11-3	120 000	1 000 000 ⁵	7 300
4-chlorobenzotrifluoride (p,α,α,α tetrachlorotoluene)	5216-25-1	2.4	8.6	0.034
4-chlorobenzotrifluoride	98-56-6	12 000	120 000	730
2-chloro-1,3-butadiene	126-99-8	36	120	730
1-chlorobutane	109-69-3	4 800 ⁷	4 800 ⁷	15 000
1-chloro-1,1-difluoroethane (HCFC-142b)	75-68-3	3 400 ⁷	3 400 ⁷	520 000
chlorodifluoromethane	75-45-6	3 400 ⁷	3 400 ⁷	510 000
chloroethane (ethyl chloride)	75-00-3	300	650	46
chloroethene (vinyl chloride)	75-01-4	7.9	75	2
2-chloroethyl phosphonic acid (ethephon)	16672-87-0	3 100	31 000	180
chloromethane (methyl chloride)	74-87-3	470	1 600	950

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
4-chloro-2-methylaniline	95-69-2	84	300	1.2
chloromethylethylene oxide (epichlorohydrin)	106-89-8	76	260	73
2-chloronaphthalene (beta-chloronaphthalene)	91-58-7	49 000	230 000	2 900
2-chloronitrobenzene	88-73-3	14	45	37
4-chloronitrobenzene	100-00-5	100	370	37
2-chloropropane	75-29-6	1 700	5 900	1 100
3-chloropropene (allyl chloride)	107-05-1	170	1 800	10
chlorothalonil	1897-45-6	4 400	16 000	61
α -chlorotoluene (benzyl chloride)	100-44-7	89	220	4
2-chlorotoluene	95-49-8	1 600	5 600	730
chlorpropham	101-21-3	120 000	1 000 000 ⁵	7 300
chlorpyrifos	2921-88-2	1 800	18 000	90
chlorpyrifos-methyl	5598-13-0	6 100	62 000	370
chlorsulfuron	64902-72-3	31 000	310 000	1 800
chlorthal-dimethyl (dacthal)	1861-32-1	15 000	150 000	910
chlorthiophos	60238-56-4	490	4 900	29
clofentezine (apollo)	74115-24-5	7 900	80 000	470
crotonaldehyde	123-73-9	0.53	1.1	0.35
cyanazine	21725-46-2	58	210	10
cyanogen	460-19-5	1 300	4 300	1 500
cyanogen bromide	506-68-3	2 900	9 700	3 300
cyanogen chloride	506-77-4	1 600	5 400	1 800

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
cyclohexanone	108-94-1	1 000 000 ⁵	1 000 000 ⁵	180 000
cyclohexylamine	108-91-8	120 000	1 000 000 ⁵	7 300
cyclonite (RDX) (hexahydro-1,3,5-trinitro-1,3,5-triazine)	121-82-4	440	1 600	6.1
cyfluthrin (baythroid)	68359-37-5	15 000	150 000	910
cyhalothrin (karate)	68085-85-8	3 100	31 000	180
cypermethrin	52315-07-8	6 100	62 000	370
cyromazine	66215-27-8	4 600	46 000	270
2,4-D (2,4-dichlorophenoxyacetic acid)	94-75-7	6 900	77 000	100
dacthal (chlorthal-dimethyl)	1861-32-1	6 100	62 000	370
dalapon (2,2-dichloropropionic acid)	75-99-0	18 000	180 000	1 100
daminozide (alar)	1596-84-5	92 000	920 000	5 500
danitol (fenpropathrin)	39515-41-8	15 000	150 000	910
2,4-DB (4-(2,4-dichlorophenoxy)butyric acid)	94-82-6	4 900	49 000	290
DBCM (dibromochloromethane)	124-48-1	110	260	100
DBCP (1,2-dibromo-3-chloropropane)	96-12-8	46	200	0.48
DDVP (dichlorvos)	62-73-7	170	590	2.3
decabromodiphenyl ether	1163-19-5	6 100	62 000	370
demeton	8065-48-3	24	250	1.5
diallate	2303-16-4	800	2 800	11
2,4-diaminotoluene	95-80-7	15	54	0.21
2,5-diaminotoluene	95-70-5	370 000	1 000 000 ⁵	22 000
2,6-diaminotoluene	823-40-5	120 000	1 000 000 ⁵	7 300

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
diazinon	333-41-5	550	5 500	20
1,4-dibromobenzene	106-37-6	6 100	62 000	370
dibromochloromethane (DBCM)	124-48-1	110	260	100
1,2-dibromo-3- chloropropane (DBCP)	96-12-8	45	200	0.48
1,2-dibromoethane (ethylene dibromide) (EDB)	106-93-4	3.2	7.3	0.34
dibromomethane (methylene bromide)	74-95-3	670	2 300	370
dicamba	1918-00-9	18 000	180 000	120
3,3-dichlorobenzidine	91-94-1	110	380	1.5
4,4'-dichlorobenzophenone	90-98-2	18 000	180 000	1 100
1,4-dichloro-2-butene	764-41-0	0.79	1.8	0.072
dichlorodifluoromethane (freon 12)	75-71-8	940	3 100	7 300
4,4'-dichlorodiphenyl sulfone (1,1'-sulfonylbis (4-chlorobenzene))	80-07-9	3 900	51 000	180
1,1-dichloroethane	75-34-3	4 000	10 000 ⁸ or 40 000 ⁹	3 700
1,2-dichloroethene (cis) (1,2-dichloroethylene (cis))	156-59-2	1 ¹⁰ or 50 ¹¹	500	370
1,2-dichloroethene (trans) (1,2-dichloroethylene (trans))	156-60-5	1 ¹⁰ or 50 ¹¹	500	730
1,2-dichloroethylene (cis) (1,2-dichloroethene (cis))	156-59-2	1 ¹⁰ or 50 ¹¹	500	370
1,2-dichloroethylene (trans) (1,2-dichloroethene (trans))	156-60-5	1 ¹⁰ or 50 ¹¹	500	730
4-(2,4-dichlorophenoxy)butyric acid (2,4-DB)	94-82-6	4 900	49 000	290
2,4-dichlorophenoxyacetic acid (2,4-D)	94-75-7	6 900	77 000	100
1,2-dichloropropane (propylene dichloride)	78-87-5	30 000	90 000 ⁸ or 550 000 ⁹	9.9
1,3-dichloropropane	142-28-9	1 000	3 600	730

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
2,3-dichloropropanol	616-23-9	1 800	18 000	110
1,3-dichloropropene	542-75-6	3 500	10 000 ⁸ or 350 000 ⁹	6.7
2,2-dichloropropionic acid (dalapon)	75-99-0	18 000	180 000	1 100
dichlorvos (DDVP)	62-73-7	170	590	2.3
dicofol	115-32-2	110	390	1.5
dicrotophos (bidrin)	141-66-2	61	620	3.7
dicyclopentadiene	77-73-6	5.4	18	1 100
dieldrin	60-57-1	3	11	0.7
diethylene glycol, monobutyl ether (2-(2-butoxyethoxy)ethanol)	112-34-5	6 100	62 000	370
diethylene glycol, monoethyl ether (2-(2-ethoxyethoxy)ethanol)	111-90-0	37 000	370 000	2 200
diethyl ether (ethyl ether)	60-29-7	18 000 ⁶	18 000 ⁶	7 300
diethylformamide	617-84-5	240	2 500	15
di(2-ethylhexyl)adipate (dioctyl adipate)	103-23-1	41 000	140 000	560
diethyl phthalate	84-66-2	490 000	1 000 000 ⁵	29 000
diethylstilbestrol	56-53-1	0.01	0.037	0.00014
difenzoquat (avenge)	43222-48-6	49 000	490 000	2 900
diflubenzuron	35367-38-5	12 000	120 000	730
diisononyl phthalate	28553-12-0	12 000	120 000	730
diisopropyl methylphosphonate (DIMP)	1445-75-6	49 000	490 000	2 900
dimethipin	55290-64-7	12 000	120 000	730

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
dimethoate	60-51-5	120	1 200	20
3,3'-dimethoxybenzidine	119-90-4	3 500	12 000	48
dimethylamine	124-40-3	0.67	2.5	0.21
n-n-dimethylaniline	121-69-7	1 200	12 000	73
2,4-dimethylaniline	95-68-1	65	230	0.9
3,3'-dimethylbenzidine	119-93-7	21	75	0.29
1,1'-dimethyl-4,4'-bipyridinium cation (paraquat)	4685-14-7	2 700	28 000	10
dimethyl-1,2-dibromo-2,2-dichloroethyl phosphate (naled)	300-76-5	1 200	12 000	73
n,n-dimethylformamide	68-12-2	61 000	620 000	3 700
1,1-dimethylhydrazine (hydrazine, dimethyl)	57-14-7	16	57	0.22
dimethylphenethylamine (1,1-dimethyl-2-phenyl-ethylamine)	122-09-8	610	6 200	37
2,4-dimethylphenol	105-67-9	6 500	20 000 ⁸ or >1 000 mg/g ^{6,9}	730
2,6-dimethylphenol	576-26-1	370	3 700	22
3,4-dimethylphenol	95-65-8	610	6 200	37
1,1-dimethyl-2-phenyl-ethylamine (dimethylphenethylamine)	122-09-8	610	6 200	37
dimethyl phthalate	131-11-3	1 000 000 ⁵	1 000 000 ^{5,7}	370 000
dimethyl terephthalate	120-61-6	61 000	620 000	3 700
DIMP (diisopropyl methylphosphonate)	1445-75-6	49 000	490 000	2 900
dinex (4,6-dinitro-o-cyclohexyl phenol)	131-89-5	1 200	12 000	73

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
1,2-dinitrobenzene	528-29-0	61	620	3.7
1,3-dinitrobenzene	99-65-0	61	620	3.7
1,4-dinitrobenzene	100-25-4	61	620	3.7
4,6-dinitro-o-cyclohexyl phenol (dinex)	131-89-5	1 200	12 000	73
2,4-dinitrotoluene	121-14-2	1 200	12 000	73
2,6-dinitrotoluene	606-20-2	610	6 200	37
dinoseb	88-85-7	610	6 200	10
dioctyl adipate (di(2-ethylhexyl)adipate)	103-23-1	41 000	140 000	560
di-n-octyl phthalate	117-84-0	24 000	250 000	1 500
1,4-dioxane	123-91-1	4 400	16 000	61
diphenamid	957-51-7	18 000	180 000	1 100
diphenylamine	122-39-4	15 000	150 000	910
n,n-diphenyl-1,4 benzenediamine (DPPD)	74-31-7	180	1 800	11
1,2-diphenylhydrazine	122-66-7	61	220	0.84
diphenyl sulfone	127-63-9	1 800	18 000	110
diquat	85-00-7	1 300	14 000	70
disulfoton	298-04-4	24	250	1.5
1,4-dithiane	505-29-3	6 100	62 000	370
diuron	330-54-1	1 200	12 000	150
dodine	2439-10-3	2 400	25 000	150
DPPD (n,n-diphenyl-1,4 benzenediamine)	74-31-7	180	1 800	11
dual (metolachlor)	51218-45-2	92 000	920 000	50

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
dysprosium	7429-91-6	78 000	1 000 000 ⁵	3 700
EDB (ethylene dibromide) (1,2-dibromoethane)	106-93-4	3.2	7.3	0.34
endosulfan	115-29-7	3 700	37 000	220
endothall	145-73-3	12 000	120 000	730
endrin	72-20-8	180	1 800	11
epichlorohydrin (chloromethyl-ethylene oxide)	106-89-8	76	260	73
1,2-epoxybutane	106-88-7	3 500	35 000	210
EPN (ethyl p-nitrophenyl phenylphosphorothioate)	2104-64-5	6.1	62	0.37
EPTC (s-ethyl dipropylthiocarbamate)	759-94-4	15 000	150 000	910
ethenyl acetate (vinyl acetate)	108-05-4	4 300	14 000	37 000
ethephon (2-chloroethyl phosphonic acid)	16672-87-0	3 100	31 000	180
ethion	563-12-2	310	3 100	18
2-ethoxyethanol (ethylene glycol, monoethyl ether)	110-80-5	240 000	1 000 000 ⁵	15 000
2-(2-ethoxyethoxy)ethanol (diethylene glycol, monoethyl ether)	111-90-0	37 000	370 000	2 200
2-ethoxyethyl acetate	111-15-9	180 000	1 000 000 ⁵	11 000
ethoxypropanol (propylene glycol, monoethyl ether)	52125-53-8	430 000	1 000 000 ⁵	26 000
ethyl acetate	141-78-6	190 000	370 000 ⁷	33 000
ethyl acrylate	140-88-5	21	45	14
ethyl chloride (chloroethane)	75-00-3	300	650	46
s-ethyl dipropylthiocarbamate (EPTC)	759-94-4	15 000	150 000	910
ethylene cyanohydrin	109-78-4	180 000	1 000 000 ⁵	11 000

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
ethylene diamine	107-15-3	55 000	550 000	3 300
ethylene dibromide (EDB) (1,2-dibromoethane)	106-93-4	3.2	7.3	0.34
ethylene glycol, monobutyl ether (2-butoxyethanol)	111-76-2	310 000	1 000 000 ⁵	18 000
ethylene glycol, monoethyl ether (2-ethoxyethanol)	110-80-5	240 000	1 000 000 ⁵	15 000
ethylene glycol, monomethyl ether (2-methoxyethanol)	109-86-4	610	6 200	37
ethylene oxide	75-21-8	14	34	0.66
ethylene thiourea (ETU) (2-imidazolidinethione)	96-45-7	440	1600	6.1
ethyl ether (diethyl ether)	60-29-7	18 000 ⁷	18 000 ⁷	7 300
ethyl methacrylate (ethyl 2-methyl-2-propenoate)	97-63-2	1 400 ⁷	1 400 ⁷	3 300
ethyl 2-methyl-2-propenoate (ethyl methacrylate)	97-63-2	1 400 ⁷	1 400 ⁷	3 300
ethyl p-nitrophenyl phenylphosphorothioate (EPN)	2104-64-5	6.1	62	0.37
ethylphthalyl ethyl glycolate	84-72-0	1 000 000 ⁵	1 000 000 ⁵	110 000
ETU (ethylene thiourea) (2-imidazolidinethione)	96-45-7	440	1 600	6.1
express (tribenuron methyl)	101200-48-0	4 900	49 000	290
fenamiphos	22224-92-6	150	1 500	9.1
fenchlorphos (ronnel)	299-84-3	31 000	310 000	1 800
fenpropathrin (danitol)	39515-41-8	15 000	150 000	910
fenvalerate (pydrin)	51630-58-1	15 000	150 000	910
fluometuron	2164-17-2	7 900	80 000	470
fluridone	59756-60-4	49 000	490 000	2 900
flurprimidol	56425-91-3	12 000	120 000	730
flusilazole (nuStar)	85509-19-9	430	4 300	26

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
flutolanil	66332-96-5	37 000	370 000	2 200
fluvalinate	69409-94-5	6 100	62 000	370
folpet	133-07-3	14 000	49 000	190
fomesafen	72178-02-0	260	910	3.5
fonofos	944-22-9	1 200	12 000	73
formaldehyde	50-00-0	92 000	1 000 000 ⁵	5 500
formic acid	64-18-6	1 000 000 ⁵	1 000 000 ⁵	73 000
fosetyl-al	39148-24-8	1 000 000 ⁵	1 000 000 ⁵	110 000
freon 11 (trichlorofluoromethane)	75-69-4	3 900	20 000	11 000
freon 12 (dichlorodifluoromethane)	75-71-8	940	3 100	7 300
freon 113 (1,1,2-trichloro-1,2,2-trifluoroethane)	76-13-1	56 000 ⁷	56 000 ⁷	1 000 000
furazolidone	67-45-8	13	45	0.18
furfural	98-01-1	1 800	18 000	110
furium	531-82-8	0.97	3.4	0.013
furmecyclox	60568-05-0	1 600	5 700	22
glufosinate-ammonium	77182-82-2	240	2 500	15
glycidaldehyde	765-34-4	240	2 500	15
glyphosate	1071-83-6	61 000	620 000	280
haloxyfop-methyl	69806-40-2	31	310	1.8
harmony (thifensulfuron methyl)	79277-27-3	7 900	80 000	470
HCFC-142b (1-chloro-1,1-difluoroethane)	75-68-3	3 400 ⁷	3 400 ⁷	520 000
HCH - (alpha) (hexachlorocyclohexane)	319-84-6	9	36	0.11

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
HCH - (beta) (hexachlorocyclohexane)	319-85-7	32	130	0.37
HCH- (gamma) (hexachlorocyclohexane) (lindane)	58-89-9	50	150 ⁸ or 500 ⁹	4
heptachlor	76-44-8	11	38	3
heptachlor epoxide	1024-57-3	5.3	19	3
hexabromobenzene	87-82-1	1 200	12 000	73
hexachloro-1,3-butadiene	87-68-3	620	2 200	8.6
hexachlorocyclohexane (HCH - (alpha))	319-84-6	9	36	0.11
hexachlorocyclohexane (HCH - (beta))	319-85-7	32	130	0.37
hexachlorocyclohexane (HCH - (gamma)) (lindane)	58-89-9	50	150 ⁸ or 500 ⁹	4
hexachlorocyclopentadiene	77-47-4	3 700	37 000	220
hexachloroethane	67-72-1	3 500	12 000	48
hexachlorophene	70-30-4	180	1 800	11
hexahydro-1,3,5-trinitro-1,3,5-triazine (cyclonite) (RDX)	121-82-4	440	1 600	6.1
1,6-hexamethylene diisocyanate	822-06-0	1.7	18	0.1
hexazinone	51235-04-2	20 000	200 000	1 200
hexythiazox (savey)	78587-05-0	15 000	150 000	910
HMX (octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine)	2691-41-0	31 000	310 000	1 800
hydramethylnon (amdro)	67485-29-4	180	1 800	11
hydrazine	302-01-2	16	57	0.22
hydrazine, dimethyl (1,1-dimethylhydrazine)	57-14-7	16	57	0.22
hydrazine, monomethyl (methylhydrazine)	60-34-4	16	57	0.22
hydrazine sulfate	10034-93-2	16	57	0.22

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
hydroquinone (1,4-benzenediol)	123-31-9	870	3 100	1 500
imazalil	35554-44-0	7 900	80 000	470
imazaquin	81335-37-7	150 000	1 000 000 ⁵	9 100
imazethapyr (pursuit)	81335-77-5	150 000	1 000 000 ⁵	9 100
2-imidazolidinethione (ethylene thiourea) (ETU)	96-45-7	440	1 600	6.1
iprodione	36734-19-7	24 000	250 000	1 500
isobutanol	78-83-1	130 000	400 000 ⁷	11 000
isophorone	78-59-1	51 000	51 000	710
isopropalin	33820-53-0	9 200	92 000	550
isopropyl methyl phosphonic acid	1832-54-8	61 000	620 000	3 700
isoxaben	82558-50-7	31 000	310 000	1 800
karate (cyhalothrin)	68085-85-8	3 100	31 000	180
kepone (chlordecone)	143-50-0	6.1	22	0.084
lactofen	77501-63-4	1 200	12 000	73
lindane (HCH – gamma) (hexachlorocyclohexane)	58-89-9	50	150 ⁸ or 500 ⁹	4
linuron	330-55-2	1 200	12 000	73
lithium	7439-93-2	16 000	200 000	730
londax (bensulfuron-methyl)	83055-99-6	120 000	1 000 000 ⁵	7 300
malathion	121-75-5	12 000	120 000	190
maleic anhydride	108-31-6	61 000	620 000	3 700
maleic hydrazide	123-33-1	17 000	24 000 ⁷	18 000
malononitrile	109-77-3	61	620	3.7

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
mancozeb	8018-01-7	18 000	180 000	1 100
maneb	12427-38-2	810	2 900	11
MCPA (2-methyl-4-chlorophenoxyacetic acid)	94-74-6	310	3 100	100
MCPB (4-(2-methyl-4-chlorophenoxy)butyric acid)	94-81-5	6 100	62 000	370
MCPP (2-(2-methyl-4-chlorophenoxy)propionic acid)	93-65-2	610	6 200	37
MDI (4,4'-methylene diphenyl diisocyanate)	101-68-8	100	1 000	6.2
mecoprop-P (2-(2-methyl-1,4-chlorophenoxy)propionic acid)	16484-77-8	610	6 200	37
mephosfolan	950-10-7	55	550	3.3
mepiquat chloride	24307-26-4	18 000	180 000	1 100
2-mercaptobenzothiazole	149-30-4	1 700	5 900	23
merphos	150-50-5	18	180	1.1
merphos oxide (tribufos)	78-48-8	18	180	1.1
metalaxyl	57837-19-1	37 000	370 000	2 200
methacrylonitrile (2-methylprop-2-enenitrile)	126-98-7	21	84	3.7
methamidophos	10265-92-6	31	310	1.8
methanethiol (methyl mercaptan)	74-93-1	350	3 500	21
methanol	67-56-1	310 000	1 000 000 ⁵	18 000
methidathion	950-37-8	610	6 200	37
methomyl	16752-77-5	440	1 500	910
methoxychlor	72-43-5	3 100	31 000	900
2-methoxyethanol (ethylene glycol, monomethyl ether)	109-86-4	610	6 200	37

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
2-methoxyethyl acetate	110-49-6	1 200	12 000	73
2-methoxy-5-nitroaniline	99-59-2	1 100	3 700	15
1-methoxy-2-propanol (propylene glycol, monomethyl ether)	107-98-2	430 000	1 000 000 ⁵	26 000
methyl acetate	79-20-9	220 000	920 000	37 000
methyl acrylate	96-33-3	700	2 300	1 100
2-methylaniline (o-toluidine)	95-53-4	200	720	2.8
4-methylaniline (p-toluidine)	106-49-0	260	910	3.5
methyl bromide (bromomethane)	74-83-9	39	130	51
methyl chloride (chloromethane)	74-87-3	470	1 600	950
2-methyl-4-chlorophenoxyacetic acid (MCPA)	94-74-6	310	3 100	100
4-(2-methyl-4-chlorophenoxy)butyric acid (MCPB)	94-81-5	6 100	62 000	370
2-(2-methyl-4-chlorophenoxy)propionic acid (MCPBP)	93-65-2	610	6 200	37
2-(2-methyl-1,4-chlorophenoxy)propionic acid (mecoprop-P)	16484-77-8	610	6 200	37
2-methyl-4,6-dinitrophenol	534-52-1	1 ¹⁰ or 10 ¹¹	100	3.7
4,4'-methylenedibenzeneamine (4,4'-methylenedianiline)	101-77-9	190	690	2.7
4,4'-methylenedibis(2-chloroaniline)	101-14-4	370	1 300	5.2
4,4'-methylenedibis(n,n'-dimethylaniline)	101-61-1	1 100	3 700	15
methylene bromide (dibromomethane)	74-95-3	670	2 300	370
4,4'-methylenedianiline (4,4'-methylenedibenzeneamine)	101-77-9	190	690	2.7
4,4'-methylene diphenyl diisocyanate (MDI)	101-68-8	100	1 000	6.2

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
methyl ethyl ketone (2-butanone)	78-93-3	220 000	>1 000 mg/g ⁶	22 000
methylhydrazine (hydrazine, monomethyl)	60-34-4	16	57	0.22
methyl isobutyl ketone (4-methyl-2-pentanone)	108-10-1	53 000	470 000	2 900
methyl mercaptan (methanethiol)	74-93-1	350	3 500	21
methyl methacrylate	80-62-6	22 000	27 000	51 000
2-methyl-5-nitroaniline (5-nitro-o-toluidine)	99-55-8	1 500	5 200	20
methyl parathion (parathion-methyl)	298-00-0	150	1 500	9.1
4-methyl-2-pentanone (methyl isobutyl ketone)	108-10-1	53 000	470 000	2 900
methyl phosphonic acid	993-13-5	12 000	120 000	730
2-methylprop-2-enenitrile (methacrylonitrile)	126-98-7	21	84	3.7
methyl styrene (alpha)	98-83-9	6 800 ⁷	6 800 ⁷	2 600
methyl tert-butyl ether (MTBE)	1634-04-4	3 200	7 000	15
metolachlor (dual)	51218-45-2	92 000	920 000	50
metribuzin	21087-64-9	15 000	150 000	80
metsulfuron-methyl (ally)	74223-64-6	150 000	1 000 000 ⁵	9 100
mirex	2385-85-5	27	96	0.37
molinate	2212-67-1	1 200	12 000	73
MTBE (methyl tert-butyl ether)	1634-04-4	3 200	7 000	15
myclobutanil (systhane)	88671-89-0	15 000	150 000	910
naled (dimethyl-1,2-dibromo-2,2-dichloroethyl phosphate)	300-76-5	1 200	12 000	73
napropamide	15299-99-7	61 000	620 000	3 700
2-nitroaniline	88-74-4	1 800	18 000	110

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
3-nitroaniline	99-09-2	180	8 200	32
4-nitroaniline	100-01-6	2 300	8 200	32
nitrobenzene	98-95-3	200	1 000	18
nitrofurantoin	67-20-9	43 000	430 000	2 600
nitrofurazone	59-87-0	32	110	0.45
nitroglycerin	55-63-0	3 500	12 000	48
nitroguanidine	556-88-7	61 000	620 000	3 700
n-nitrosodi-n-butylamine	924-16-3	2.4	5.8	0.12
n-nitrosodiethanolamine	1116-54-7	17	62	0.24
n-nitrosodiethylamine	55-18-5	0.32	1.1	0.0045
n-nitrosodimethylamine	62-75-9	0.95	3.4	0.013
n-nitrosodiphenylamine	86-30-6	9 900	35 000	140
n-nitrosodi-n-propylamine	621-64-7	6.9	25	0.096
n-nitroso-n-methylethylamine	10595-95-6	2.2	7.8	0.031
n-nitrosopyrrolidine	930-55-2	23	82	0.32
2-nitrotoluene	88-72-2	88	220	2.9
3-nitrotoluene	99-08-1	7 300	10 000 ⁷	730
4-nitrotoluene	99-99-0	1 200	3 000	40
5-nitro-o-toluidine (2-methyl-5-nitroaniline)	99-55-8	1 500	5 200	20
norflurazon	27314-13-2	24 000	250 000	1 500
nuStar (flusilazole)	85509-19-9	430	4 300	26
octabromodiphenyl ether	32536-52-0	1 800	18 000	110

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	31 000	310 000	1 800
octamethylpyrophosphoramidate (schradan)	152-16-9	1 200	12 000	73
oryzalin	19044-88-3	31 000	310 000	1 800
oxadiazon	19666-30-9	3 100	31 000	180
oxamyl	23135-22-0	15 000	150 000	910
oxyfluorfen	42874-03-3	1 800	18 000	110
paclobutrazol	76738-62-0	7 900	80 000	470
paraquat (1,1'-dimethyl-4,4'-bipyridinium cation)	4685-14-7	2 700	28 000	10
parathion	56-38-2	3 700	37 000	50
parathion-methyl (methyl parathion)	298-00-0	150	1 500	9.1
PBBs (polybrominated biphenyls)	67774-32-7	5.5	19	0.076
PCTs (polychlorinated terphenyls)	61788-33-8	11	38	0.15
pebulate (propyl n-ethyl-n-butylthiocarbamate)	1114-71-2	31 000	310 000	1 800
pendimethalin	40487-42-1	24 000	250 000	1 500
1,2,3,4,5-pentabromo-6-chlorocyclohexane	87-84-3	2 100	7 500	29
pentabromodiphenyl ether	32534-81-9	1 200	12 000	73
pentachloronitrobenzene (quintozone)	82-68-8	190	660	2.6
perchlorate	7601-90-3	78	1 000	3.7
permethrin	52645-53-1	31 000	310 000	1 800
phenmedipham	13684-63-4	150 000	1 000 000 ⁵	9 100
phenol	108-95-2	100 000	300 000 ⁸ or >1 000 mg/g ^{6,9}	11 000

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
phenothiazine	92-84-2	1 200	12 000	73
m-phenylenediamine	108-45-2	3 700	37 000	220
o-phenylenediamine	95-54-5	1 000	3 700	14
p-phenylenediamine	106-50-3	120 000	1 000 000 ⁵	6 900
phenylmercuric acetate	62-38-4	49	4 900	2.9
2-phenylphenol	90-43-7	25 000	89 000	350
phorate	298-02-2	120	1 200	2
phosmet	732-11-6	12 000	120 000	730
phosphine	7803-51-2	180	1 800	11
p-phthalic acid (terphthalic acid)	100-21-0	610 000	1 000 000 ⁵	37 000
phthalic anhydride	85-44-9	1 000 000 ⁵	1 000 000 ⁵	73 000
picloram	1918-02-1	43 000	430 000	190
pirimiphos-methyl	29232-93-7	6 100	62 000	370
polybrominated biphenyls (PBBs)	67774-32-7	5.5	19	0.076
polychlorinated terphenyls (PCTs)	61788-33-8	11	38	0.15
prochloraz	67747-09-5	320	1 100	4.5
profluralin	26399-36-0	3 700	37 000	220
prometon	1610-18-0	9 200	92 000	550
prometryn	7287-19-6	2 400	25 000	150
pronamide (propyzamide)	23950-58-5	46 000	460 000	2 700
propachlor	1918-16-7	7 900	80 000	470
1,2-propanediol (propylene glycol)	57-55-6	300 000	1 000 000 ⁵	18 000

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
propanil	709-98-8	3 100	31 000	180
propargite	2312-35-8	12 000	120 000	730
propargyl alcohol (2-propyn-1-ol)	107-19-7	1 200	12 000	73
propazine	139-40-2	12 000	120 000	730
2-propenal (acrolein)	107-02-8	1	3.4	18
2-propenamide (acrylamide)	79-06-1	11	38	0.15
2-propenenitrile (acrylonitrile)	107-13-1	21	49	1.2
2-propenoic acid (acrylic acid)	79-10-7	290 000	1 000 000 ⁵	18 000
2-propen-1-ol (allyl alcohol)	107-18-6	3 100	31 000	180
propham	122-42-9	12 000	120 000	730
propiconazole	60207-90-1	7 900	80 000	470
propoxur (baygon)	114-26-1	2 400	25 000	150
propylene dichloride (1,2-dichloropropane)	78-87-5	30 000	90 000 ⁸ or 550 000 ⁹	9.9
propylene glycol (1,2-propanediol)	57-55-6	300 000	1 000 000 ⁵	18 000
propylene glycol, monoethyl ether (ethoxypropanol)	52125-53-8	430 000	1 000 000 ⁵	26 000
propylene glycol, monomethyl ether (1-methoxy-2-propanol)	107-98-2	430 000	1 000 000 ⁵	26 000
propylene oxide	75-56-9	190	660	2.8
propyl n-ethyl-n-butylthiocarbamate (pebulate)	1114-71-2	31 000	310 000	1 800
2-propyn-1-ol (propargyl alcohol)	107-19-7	1 200	12 000	73
propyzamide (pronamide)	23950-58-5	46 000	460 000	2 700
pursuit (imazethapyr)	81335-77-5	150 000	1 000 000 ⁵	9 100

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
pydrin (fenvalerate)	51630-58-1	15 000	150 000	910
pyridine	110-86-1	610	6 200	37
quinalphos	13593-03-8	310	3 100	18
quintozone (pentachloronitrobenzene)	82-68-8	190	660	2.6
quizalofop (assure)	76578-14-8	5 500	55 000	330
RDX (cyclonite) (hexahydro-1,3,5-trinitro-1,3,5-triazine)	121-82-4	440	1 600	6.1
resmethrin	10453-86-8	18 000	180 000	1 100
ronnel (fenchlorphos)	299-84-3	31 000	310 000	1 800
rotenone	83-79-4	2 400	25 000	150
savey (hexythiazox)	78587-05-0	15 000	150 000	910
schradan (octamethylpyrophosphoramidate)	152-16-9	1 200	12 000	73
selenious acid	7783-00-8	3 100	31 000	180
selenourea	630-10-4	3 100	31 000	180
sethoxydim	74051-80-2	55 000	550 000	3 300
s-ethyl dipropylthiocarbamate	759-94-4	15 000	150 000	910
silvex (2-(2,4,5-trichlorophenoxy)propionic acid) (2,4,5-TP)	93-72-1	4 900	49 000	290
simazine	122-34-9	410	1 400	10
sodium diethyldithiocarbamate	148-18-5	180	640	2.5
sodium fluoroacetate	62-74-8	12	120	0.73
sodium metavanadate	13718-26-8	610	6 200	37
strontium, stable	7440-24-6	470 000	1 000 000 ⁵	22 000

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
strychnine	57-24-9	180	1 800	11
1,1'-sulfonylbis (4-chlorobenzene) (4,4'-dichlorodiphenylsulfone)	80-07-9	3 900	51 000	180
sulfotep (tetraethyldithiopyrophosphate)	3689-24-5	310	3 100	18
systhane (myclobutanil)	88671-89-0	15 000	150 000	910
2,4,5-T (2,4,5- trichlorophenoxyacetic acid)	93-76-5	6 100	62 000	20
talstar (bipenthrin)	82657-04-3	9 200	92 000	550
TBTO (tributyltin oxide)	56-35-9	180	1 800	11
tebuthiuron	34014-18-1	43 000	430 000	2 600
temephos	3383-96-8	12 000	120 000	280
terbacil	5902-51-2	7 900	80 000	470
terbufos	13071-79-9	15	150	1
terbutryn	886-50-0	610	6 200	37
terephthalic acid	100-21-0	610 000	1 000 000 ⁵	37 000
1,2,4,5-tetrachlorobenzene	95-94-3	100	300 ⁸ or 20 000 ⁹	11
1,1,1,2-tetrachloroethane	630-20-6	320	730	26
1,1,2,2-tetrachloroethane	79-34-5	41	93	3.4
p,α,α,α-tetrachlorotoluene (4-chlorobenzotrichloride)	5216-25-1	2.4	8.6	0.034
tetrachlorovinphos	961-11-5	2 000	7 200	28
tetraethyldithiopyrophosphate (sulfotep)	3689-24-5	310	3 100	18
tetrahydrofuran	109-99-9	940	2 100	88
tetramethylthiuram disulfide (thiram)	137-26-8	3 100	31 000	180

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
tetryl (trinitrophenyl-n-methylnitramine)	479-45-8	6 100	62 000	370
thifensulfuron methyl (harmony)	79277-27-3	7 900	80 000	470
thiobencarb	28249-77-6	6 100	62 000	370
thiocyanate	302-04-5	31 000	1 000 000 ⁵	1 800
thiofanox	39196-18-4	180	1 800	11
thiophanate-methyl	23564-05-8	49 000	490 000	2 900
thiram (tetramethylthiuram disulfide)	137-26-8	3 100	31 000	180
tin	7440-31-5	>1 000 mg/g ⁶	>1 000 mg/g ⁶	22 000
TMAN (trimellitic anhydride) (1,2,4-benzenetricarboxylic anhydride)	552-30-7	86	860	5.1
TNT (2,4,6-trinitrotoluene)	118-96-7	1 600	5 700	22
toluene-2,4-diamine	95-80-7	15	54	0.21
toluene-2,5-diamine	95-70-5	370 000	1 000 000 ⁵	22 000
toluene-2,6-diamine	823-40-5	120 000	1 000 000 ⁵	7 300
o-toluidine (2-methylaniline)	95-53-4	200	720	2.8
p-toluidine (4-methylaniline)	106-49-0	260	910	3.5
toxaphene	8001-35-2	44	160	0.61
2,4,5-T, (2-(2,4,5-trichlorophenoxy)propionic acid) (silvex)	93-72-1	4 900	49 000	290
tralomethrin	66841-25-6	4 600	46 000	270
triadimefon (bayleton)	43121-43-3	18 000	180 000	1 100
triallate	2303-17-5	7 900	80 000	230

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
triasulfuron	82097-50-5	6 100	62 000	370
tribenuron methyl (express)	101200-48-0	4 900	49 000	290
1,2,4-tribromobenzene	615-54-3	3 100	31 000	180
tribromomethane (bromoform)	75-25-2	6 200	22 000	100
tribufos (merphos oxide)	78-48-8	18	180	1.1
tributyl phosphate	126-73-8	5 300	19 000	73
tributyltin oxide (TBTO)	56-35-9	180	1 800	11
2,4,6-trichloroaniline	634-93-5	1 400	5 100	20
1,1,1-trichloroethane	71-55-6	650 000	>1 000 mg/g ⁶	10 000
1,1,2-trichloroethane	79-00-5	1 300	40 000 ⁸ or 60 000 ⁹	12
trichlorofluoromethane (freon 11)	75-69-4	3 900	20 000	11 000
2,4,5-trichlorophenoxyacetic acid (2,4,5-T)	93-76-5	6 100	62 000	20
2-(2,4,5-trichlorophenoxy)propionic acid (2,4,5-TP) (silvex)	93-72-1	4 900	49 000	290
1,1,2-trichloropropane	598-77-6	710	2 700	180
1,2,3-trichloropropane	96-18-4	3.4	7.6	0.34
1,2,3-trichloropropene	96-19-5	52	170	370
α,α,α-trichlorotoluene (benzotrichloride)	98-07-7	3.7	13	0.052
1,1,2-trichloro-1,2,2-trifluoroethane (freon 113)	76-13-1	56 000 ⁷	56 000 ⁷	1 000 000
tridiphane	58138-08-2	1 800	18 000	110
triethylamine	121-44-8	230	860	73
trifluralin	1582-09-8	6 300	22 000	45

Table 7. Human Health Soil^{1,2} and Drinking Water³ Ingestion Exposure Upper Cap Concentrations for Schedule 10 Substances⁴

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substances	CAS Number	Agricultural, Urban Park, Residential Soil	Commercial, Industrial Soil	Drinking Water
trimellitic anhydride (TMAN) (1,2,4-benzenetricarboxylic anhydride)	552-30-7	86	860	5.1
trimethyl phosphate	512-56-1	1 300	4 700	18
1,3,5-trinitrobenzene	99-35-4	18 000	180 000	1 100
trinitrophenyl-n-methylnitramine (tetryl)	479-45-8	6 100	62 000	370
2,4,6-trinitrotoluene (TNT)	118-96-7	1 600	5 700	22
triphenylphosphine oxide	791-28-6	12 000	120 000	730
tris(2-chloroethyl) phosphate	115-96-8	3 500	12 000	48
tris(2-ethylhexyl) phosphate	78-42-2	15 000	54 000	210
uranium	7440-61-1	160	2 000	20
vernarn (vernolate)	1929-77-7	610	6 200	37
vernolate (vernarn)	1929-77-7	610	6 200	37
vinclozolin	50471-44-8	15 000	150 000	910
vinyl acetate (ethenyl acetate)	108-05-4	4 300	14 000	37 000
vinyl bromide (bromoethene)	593-60-2	19	42	6.1
vinyl chloride (chloroethene)	75-01-4	7.9	75	2
warfarin	81-81-2	180	1 800	11
zinc phosphide	1314-84-7	230	3 100	11
zineb	12122-67-7	31 000	310 000	1 800

1. All values are in ug/g unless otherwise stated. Substances must be analyzed using methods specified in a director's protocol or alternate methods acceptable to the director.

2. Soil ingestion exposure upper cap concentrations were derived by application of a 10x upper cap multiplier to existing Schedule 10 soil quality standards for substance and corresponding land use.
- 3(a). All drinking water values are in $\mu\text{g/L}$ unless otherwise stated. Substances must be analyzed using methods specified in a director's protocol or alternate methods acceptable to a director.
- 3(b). Drinking Water upper cap concentrations are for unfiltered samples obtained at the point of consumption. Heavy metals, metalloids and inorganic ions are expressed as total substance concentrations unless otherwise indicated.
- 3(c). Drinking Water upper cap concentrations were derived by application of a 1x upper cap multiplier to existing Schedule 10 Drinking Water protective water quality standards for substance.
4. Soil and Drinking Water upper cap concentrations are specific to human health only.
5. Upper cap concentration is derived from Schedule 10 soil quality standard which was based on US EPA Region 9 ceiling limit for the substance in soil or water.
6. Upper cap concentration derived for substance and corresponding land use exceeds unity.
7. Upper cap concentration is derived from Schedule 10 soil quality standard which was based on US EPA Region 9 saturation limit for the substance in soil or water.
8. Upper cap concentration is specific to commercial land use.
9. Upper cap concentration is specific to industrial land use.
10. Upper cap concentration is specific to agricultural land use.
11. Upper cap concentration is specific to residential and urban park land uses.

Table 8. Human Health Vapour Exposure Upper Cap Concentrations for Schedule 11 Substances^{1,2,3,4}

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substance	CAS No.	Agricultural, Urban Park, Residential Use⁵	Commercial Use⁶	Industrial Use⁷
acetaldehyde	75-07-0	45	150	4 000
acetone	67-64-1	200	600	20 000
acetone cyanohydrin	75-86-5	600	2 000	3 500 ⁸
acetonitrile	75-05-8	600	2 000	35 000 ⁹
acrolein (2-propenal)	107-02-8	20	20	200
acrylonitrile (2-propenenitrile)	107-13-1	15	15	150
allyl chloride (3-chloropropene)	107-05-1	10	30	900
ammonia	7664-41-7	1 000	3 000	17 500 ⁹
BDCM (bromodichloromethane)	75-27-4	10	20	650
benzene	71-43-2	15	40	1 000
benzotrichloride (α,α,α -trichlorotoluene)	98-07-7	2	2	20
benzyl chloride (α -chlorotoluene)	100-44-7	50	150	2 500 ⁸
bis(2-chloroethyl) ether	111-44-4	20	20	200
bis(2-chloroisopropyl) ether	39638-32-9	800	2 500	70 000
bis(2-chloromethyl) ether	542-88-1	10	10	100
bis(2-chloro-1-methylethyl) ether	108-60-1	7 ⁹	7 ⁹	7 ⁹
bromobenzene	108-86-1	100	300	9 000
bromodichloromethane (BDCM)	75-27-4	10	20	650
bromoethene (vinyl bromide)	593-60-2	10	10	300
bromoform (tribromomethane)	75-25-2	90	300	5 000 ⁹
bromomethane (methyl bromide)	74-83-9	50	150	4 000 ⁹
1,3-butadiene	106-99-0	20	60	2 000
2-butanone (methyl ethyl ketone)	78-93-3	50 000	145 000 ⁹	145 000 ⁹

Table 8. Human Health Vapour Exposure Upper Cap Concentrations for Schedule 11 Substances^{1,2,3,4}

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substance	CAS No.	Agricultural, Urban Park, Residential Use⁵	Commercial Use⁶	Industrial Use⁷
carbon disulfide	75-15-0	7 000	12 500 ⁹	12 500 ⁹
carbon tetrachloride (tetrachloromethane)	56-23-5	6.5	20	600
chlorine	7782-50-5	200	200	1 500 ⁹
chlorobenzene (monochlorobenzene)	108-90-7	500	1 500	45 000
4-chlorobenzotrifluoride	98-56-6	500	1 500	55 000
2-chloro-1,3-butadiene	126-99-8	70	200	6 500
1-chlorobutane	109-69-3	10 000	30 000	1 000 000
1-chloro-1,1-difluoroethane (HCFC-142b)	75-68-3	500 000	1 500 000	4 000 000 ⁹
chlorodifluoromethane	75-45-6	500 000	1 500 000	2 000 000 ⁹
chloroethane (ethyl chloride)	75-00-3	100 000	250 000 ⁹	250 000 ⁹
chloroethene (vinyl chloride)	75-01-4	10	35	1 000
chloroform (trichloromethane)	67-66-3	10	15	400
chloromethane (methyl chloride)	74-87-3	55	150	5 000
chloromethylethylene oxide (epichlorohydrin)	106-89-8	85	250	400 ⁹
2-chlorophenol (monochlorophenol)	95-57-8	100	300	9 000
2-chloropropane	75-29-6	1 000	3 000	100 000
3-chloropropene (allyl chloride)	107-05-1	10	30	900
α -chlorotoluene (benzyl chloride)	100-44-7	50	150	4 500
2-chlorotoluene	95-49-8	400	1 000	35 000
crotonaldehyde	123-73-9	15	15	150
cumene (isopropylbenzene)	98-82-8	4 000	1 0000	100 000 ⁹
cyanide (hydrogen cyanide)	74-90-8	30	90	3000
cyanogen	460-19-5	800	2 500	20 000 ⁹

Table 8. Human Health Vapour Exposure Upper Cap Concentrations for Schedule 11 Substances^{1,2,3,4}

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substance	CAS No.	Agricultural, Urban Park, Residential Use⁵	Commercial Use⁶	Industrial Use⁷
cyanogen bromide	506-68-3	4 000	10 000	350 000
cyanogen chloride	506-77-4	750 ⁸	750 ⁸	750 ⁸
DBCM (dibromochloromethane)	124-48-1	400	1 000	35 000
DBCP (1,2-dibromo-3-chloropropane)	96-12-8	150	500	15 000
n-decane	124-18-5	25 000	80 000	2 500 000
1,4-dibromobenzene	106-37-6	250	800	30 000
1,2-dibromoethane (ethylene dibromide) (EDB)	106-93-4	10	10	100
dibromochloromethane (DBCM)	124-48-1	400	1 000	35 000
1,2-dibromo-3-chloropropane (DBCP)	96-12-8	150	500	15 000
dibromomethane (methylene bromide)	74-95-3	50	150	4 500
1,2-dichlorobenzene	95-50-1	2 000	6 000	150 000 ⁹
1,3-dichlorobenzene	541-73-1	800	2 500	85 000
1,4-dichlorobenzene	106-46-7	8 000	25 000	60 000 ⁹
1,4-dichloro-2-butene ¹⁰	764-41-0	4	4	25 ⁹
dichlorodifluoromethane (Freon 12)	75-71-8	2 000	6 000	200 000
1,1-dichloroethane	75-34-3	5 000	15 000	400 000 ⁹
1,2-dichloroethane	107-06-2	4	10	350
1,1-dichloroethene (1,1-dichloroethylene)	75-35-4	10	10	200
1,2-dichloroethene, cis (1,2-dichloroethylene, cis)	156-59-2	200	600	20 000
1,2-dichloroethene, trans (1,2-dichloroethylene, trans)	156-60-5	600	2 000	55 000
1,1-dichloroethylene (1,1-dichloroethene)	75-35-4	10	10	200
1,2-dichloroethylene, cis (1,2-dichloroethene, cis)	156-59-2	200	600	20 000
1,2-dichloroethylene, trans (1,2-dichloroethene, trans)	156-60-5	600	2 000	55 000

Table 8. Human Health Vapour Exposure Upper Cap Concentrations for Schedule 11 Substances^{1,2,3,4}

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substance	CAS No.	Agricultural, Urban Park, Residential Use⁵	Commercial Use⁶	Industrial Use⁷
dichloromethane (methylene chloride)	75-09-2	200	650	20 000
1,2-dichloropropane (propylene dichloride)	78-87-5	6.5	20	600
1,3-dichloropropane	142-28-9	500	1 500	55 000
1,3-dichloropropene	542-75-6	25	75	2 500
dicyclopentadiene	77-73-6	70	200	6 500
diethyl ether (ethyl ether)	60-29-7	4 000	10 000	350 000
diisopropyl methylphosphonate (DIMP)	1445-75-6	2 000	6 500	200 000
dimethylamine	124-40-3	2 000	2 000	9 000 ⁹
n-n-dimethylaniline	121-69-7	50	150	5 500
DIMP (diisopropyl methylphosphonate)	1445-75-6	2 000	6 500	200 000
EDB (ethylene dibromide) (1,2-dibromoethane)	106-93-4	10	10	100
epichlorohydrin (chloromethyl-ethylene oxide)	106-89-8	85	250	400 ⁹
1,2-epoxybutane	106-88-7	200	600	20 000
ethenyl acetate (vinyl acetate)	108-05-4	2 000	6 000	35 000 ⁹
ethyl acetate	141-78-6	20 000	55 000	550 000 ⁹
ethyl acrylate	140-88-5	70	200	6 500
ethylbenzene	100-41-4	10 000	30 000	450 000 ⁹
ethyl chloride (chloroethane)	75-00-3	100 000	250 000 ⁹	250 000 ⁹
ethyl ether (diethyl ether)	60-29-7	4 000	10 000	350 000
ethyl methacrylate (ethyl 2-methyl-2-propenoate)	97-63-2	2 000	5 500	150 000
ethyl 2-methyl-2-propenoate (ethyl methacrylate)	97-63-2	2 000	5 500	150 000
ethylene dibromide (EDB) (1,2-dibromoethane)	106-93-4	10	10	100
ethylene oxide	75-21-8	100	100	200 ⁹

Table 8. Human Health Vapour Exposure Upper Cap Concentrations for Schedule 11 Substances^{1,2,3,4}

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substance	CAS No.	Agricultural, Urban Park, Residential Use⁵	Commercial Use⁶	Industrial Use⁷
Freon 11 (trichlorofluoromethane)	75-69-4	7 000	20 000	650 000
Freon 12 (dichlorodifluoromethane)	75-71-8	2 000	6 000	200 000
Freon 113 (1,2,2-trichloro-1,2,2-trifluoroethane)	76-13-1	300 000	900 000	4 000 000 ⁹
furan	110-00-9	20	60	2 000
HCFC-142b (1-chloro-1,1-difluoroethane)	75-68-3	500 000	1 500 000	4 000 000 ⁹
1,3-hexachlorobutadiene	87-68-3	20	20	200 ⁹
hexachlorocyclopentadiene	77-47-4	20	20	100 ⁹
hexachloroethane	67-72-1	25	100	2 500
n-hexane	110-54-3	7 000	20 000	70 500 ⁹
hydrogen cyanide (cyanide)	74-90-8	30	90	3 000
isopropylbenzene (cumene)	98-82-8	4 000	10 000	100 000 ⁹
methacrylonitrile (2-methylprop-2-enenitrile)	126-98-7	100	100	1 000
methanethiol (methyl mercaptan)	74-93-1	20	60	1 000 ⁹
methyl acetate	79-20-9	20 000	60 000	600 000 ⁹
methyl acrylate	96-33-3	600	2 000	7 000 ⁹
methyl bromide (bromomethane)	74-83-9	50	150	4 000 ⁹
methyl chloride (chloromethane)	74-87-3	55	150	5 000
methylcyclohexane	108-87-2	30 000	90 000	1 500 000 ⁹
methylene bromide (dibromomethane)	74-95-3	50	150	4 500
methylene chloride (dichloromethane)	75-09-2	200	650	20 000
methyl ethyl ketone (2-butanone)	78-93-3	50 000	145 000 ⁹	145 000 ⁹
methyl isobutyl ketone (4-methyl-2-pentanone)	108-10-1	30 000	90 000	200 000 ⁹
methyl mercaptan (methanethiol)	74-93-1	20	60	1 000 ⁹

Table 8. Human Health Vapour Exposure Upper Cap Concentrations for Schedule 11 Substances^{1,2,3,4}

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substance	CAS No.	Agricultural, Urban Park, Residential Use⁵	Commercial Use⁶	Industrial Use⁷
methyl methacrylate	80-62-6	7 000	20 000	200 000 ⁹
4-methyl-2-pentanone (methyl isobutyl ketone)	108-10-1	30 000	90 000	200 000 ⁹
1-methyl-1-phenylethylene (α -methylstyrene)	98-83-9	2 000	5 500	200 000
2-methylprop-2-enenitrile (methacrylonitrile)	126-98-7	100	100	1 000
α -methylstyrene (1-methyl-1-phenylethylene)	98-83-9	2 000	5 500	200 000
methyl styrene, mixture (vinyl toluene) ¹¹	25013-15-4	400	1 000	35 000
methyl tert-butyl ether (MTBE)	1634-04-4	30 000	90 000	200 000 ⁹
monochlorobenzene (chlorobenzene)	108-90-7	500	1 500	45 000
monochlorophenol (2-chlorophenol)	95-57-8	100	300	9 000
MTBE (methyl tert-butyl ether)	1634-04-4	30 000	90 000	200 000 ⁹
naphthalene	91-20-3	30	90	2 500
nitrobenzene	98-95-3	20	60	2 000
2-nitrotoluene	88-72-2	25	75	2 500
PCE (tetrachloroethylene) (PERC)	127-18-4	6 000	20 000	150 000 ⁹
PERC (tetrachloroethylene) (PCE)	127-18-4	6 000	20 000	150 000 ⁹
phosphine	7803-51-2	100	100	400 ⁹
2-propenal (acrolein)	107-02-8	20	20	200
2-propenenitrile (acrylonitrile)	107-13-1	15	15	150
propylene dichloride (1,2-dichloropropane)	78-87-5	6.5	20	600
propylene oxide	75-56-9	25	80	2 500
pyridine	110-86-1	25	80	3 000
styrene	100-42-5	10 000	30 000	200 000 ⁹

Table 8. Human Health Vapour Exposure Upper Cap Concentrations for Schedule 11 Substances^{1,2,3,4}

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substance	CAS No.	Agricultural, Urban Park, Residential Use⁵	Commercial Use⁶	Industrial Use⁷
TCE (trichloroethylene)	79-01-6	5	5	100
1,1,1,2-tetrachloroethane	630-20-6	15	40	1 000
1,1,2,2-tetrachloroethane	79-34-5	10	10	150
tetrachloroethylene (PCE) (PERC)	127-18-4	6 000	20 000	150 000 ⁹
tetrachloromethane (carbon tetrachloride)	56-23-5	6.5	20	600
tetrahydrofuran	109-99-9	40	100	4 000
toluene	108-88-3	50 000	75 500 ⁹	75 500 ⁹
tribromomethane (bromoform)	75-25-2	90	300	5 000 ⁹
1,2,4-trichlorobenzene	120-82-1	40	100	3 500
1,1,1-trichloroethane	71-55-6	20 000	65 000	2 000 000 ⁹
1,1,2-trichloroethane	79-00-5	6	20	500
trichloroethylene (TCE)	79-01-6	5	5	100
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	76-13-1	300 000	900 000	4 000 000 ⁹
trichlorofluoromethane (Freon 11)	75-69-4	7 000	20 000	650 000
trichloromethane (chloroform)	67-66-3	10	15	400
1,1,2-trichloropropane	598-77-6	100	300	9 000
1,2,3-trichloropropane	96-18-4	100	350	10 000
1,2,3-trichloropropene	96-19-5	10	30	900
α,α,α -trichlorotoluene (benzotrichloride)	98-07-7	2	2	20
triethylamine	121-44-8	70	200	4 000 ⁹
1,2,4-trimethylbenzene	95-63-6	60	200	5 500
1,3,5-trimethylbenzene	108-67-8	60	200	5 500

Table 8. Human Health Vapour Exposure Upper Cap Concentrations for Schedule 11 Substances^{1,2,3,4}

COLUMN I	COLUMN II	COLUMN III	COLUMN IV	COLUMN V
Substance	CAS No.	Agricultural, Urban Park, Residential Use⁵	Commercial Use⁶	Industrial Use⁷
vinyl acetate (ethenyl acetate)	108-05-4	2 000	6 000	35 000 ⁹
vinyl bromide (bromoethene)	593-60-2	10	10	300
vinyl chloride (chloroethene)	75-01-4	10	35	1 000
vinyl toluene (methyl styrene, mixture) ¹¹	25013-15-4	400	1 000	35 000
VPHv ¹²		10 000	30 000	1 150 000
xylenes, mixture ¹³	1330-20-7	1 000	3 000	90 000

1. All values in $\mu\text{g}/\text{m}^3$ unless otherwise stated. Substances must be analyzed using methods specified in a director's protocol or alternate methods acceptable to a director.
2. Upper cap concentrations were derived by application of Appendix 1, Table 9 upper cap multipliers to existing Schedule 11 Vapour standards for substance and corresponding vapour use.
3. Upper cap concentrations of this schedule are specific to human health only.
4. Upper cap concentrations applied to soil may be adjusted for depth dependent attenuation.
5. Upper cap concentrations for Agricultural, Urban Park and Residential Use apply to: soil at agricultural, urban park and residential land use sites; freshwater or marine sediment at sensitive sediment sites; and to water at any site, irrespective of the water or site use, which gives rise to contaminated vapours.
6. Upper cap concentrations for Commercial Use apply to soil at commercial land use sites which gives rise to contaminated vapours.
7. Upper cap concentrations for Industrial Use apply to soil at industrial land use sites and to freshwater or marine sediment at typical sediment sites, which gives rise to contaminated vapours.
8. Upper cap concentration represents Worksafe BC 2009 TLV-Short Term Exposure Limit for substance
9. Upper cap concentration represents Worksafe BC 2009 TLV-Time Weighted Average for substance
10. Upper cap concentration applies to sum of cis and trans isomers for the substance.
11. Upper cap concentration applies to sum of meta and para isomers for substance.
12. VPHv includes the sum of those compounds that elute on a 100% polydimethylsiloxane gas chromatographic column between the retention times for n-hexane (nC6) and n-tridecane (nC13) minus the sum of: benzene, n-decane, n-hexane, toluene and xylenes.
13. Upper cap concentration applies to sum of meta, ortho and para isomers for the substance.

Appendix 1

Derivation of Upper Cap Concentrations of Substances

Derivation of Upper Cap Concentrations of Substances

1.0 Upper cap multipliers

Table 9 specifies the upper cap multipliers for each of the exposure media.

Table 9. Upper cap multipliers for substances in the Contaminated Sites Regulation

Media and Pathway	Contaminated Sites Regulation Standards/Criteria	Upper Cap Multiplier	Notes
Human Health Protection			
Soil ingestion exposure	Schedule 4, 5, 10	10	1
Vapour exposure	Schedule 11	10 or TLV AL,RL,PL,CL 100 or TLV Industrial	2, 3
Drinking water exposure	Schedule 6, 10	1	4
Environmental Health Protection			
Invertebrate and plant soil exposure	Schedule 4, 5	10	1
Livestock ingesting soil and fodder exposure	Schedule 5	10	5
Aquatic life sediment exposure	Schedule 9	10	6
Aquatic life water exposure	Schedule 6	10	4, 7
Livestock drinking water exposure	Schedule 6	1	4
Plant irrigation water exposure	Schedule 6	1	4

Notes:

1. Reference soil standards and upper cap concentrations are specific to land uses of the Regulation.
2. Reference vapour standards and upper cap concentrations are specific to vapour uses of the Regulation.
3. Agricultural, residential, urban park land, commercial (AL,RL,PL,CL) and industrial vapour use upper cap concentrations represent the lesser of either the upper cap multiplier applied to the Schedule 11 vapour use standard or the WorksafeBC 2009 threshold limit value (TLV), for the substance
4. The application of upper cap concentrations for the specified water exposure at a site is determined in accordance with Technical Guidance 6 "Applying Water Quality Standards to Groundwater and Surface Water".
5. Upper cap multiplier Reference soil standards and upper cap concentrations are specific to agricultural land use.

6. The application of upper cap concentrations for aquatic life sediment exposure at a site is determined in accordance with Technical Guidance 19 "Assessing and Managing Contaminated Sediments".
7. Current CSR Schedule 6 aquatic life standards for VPHw6-10 and EPHw10-19 effectively represent a 10-fold multiple of related respective CSR Schedule 6 aquatic life standards for VPHw and LEPhw. Consequently, an upper cap multiplier of 1 rather than 10 was used to derive VPHw6-10 and EPHw10-19 upper cap concentrations.

Upper cap concentrations were limited to a 100% concentration by weight in each environmental medium.

2.0 Upper cap concentrations for vapours

In the case of upper cap concentrations for vapours, occupational threshold limit values (TLVs) were also taken into consideration. TLVs are provided in WorkSafeBC's Occupational Health and Safety Regulation Guidelines - Part 5, available at http://www2.worksafebc.com/PDFs/regulation/exposure_limits.pdf.

TLVs are exposure limits representing a maximum allowable airborne concentration of a substance to which a worker can be exposed without provoking adverse health effects. For some substances, WorksafeBC provides multiple TLVs, including: a time-weighted average (TLV-TWA), a short-term exposure limit (TLV-STEL) and/or a ceiling exposure limit (TLV-C). For the purposes of this protocol, where multiple TLVs were available for a substance, the most stringent (lowest) TLV concentration was used in deriving the upper cap concentrations of Table 9.

3.0 Special case derivation of Table 1 and Table 2 upper cap concentrations

Table 1 provides human health soil ingestion exposure upper cap concentrations for substances listed in Schedule 4 of the Regulation. These human health upper cap concentrations were derived by applying the upper cap multiplier, as specified in Table 9, to values calculated in accordance with the CSST procedures for derivation of soil quality standards as described in BC Ministry of Environment. 1996. "Overview of CSST Procedures for the Derivation of Soil Quality Matrix Standards for Contaminated Sites. Victoria, B.C. Human health toxicity reference values (TRVs) used in these calculations were drawn from:

- US EPA. 2008. Integrated Risk Information System (IRIS). United States Environmental Protection Agency. Washington. D.C.
<http://cfpub.epa.gov/ncea/iris/index.cfm>,
- Health Canada. 2004. Federal Contaminated Site Risk Assessment in Canada Part II: Health Canada Toxicological Reference Values (TRVs). Environmental Health Assessment Services. Safe Environments Program. Ottawa, Canada.

http://www.hc-sc.gc.ca/ewh-semt/pubs/contamsite/part-partie_ii/index-eng.php, or

- Toxicology Excellence for Risk Assessment (TERA). 2008. TERA - ITER database. http://iter.ctcnet.net/publicurl/pub_search_list.cfm.

In the case where no relevant human health TRV was available for a substance listed in Table 1, the Table 1 upper cap concentration was derived by applying the upper cap multiplier, as specified in Table 9, to the existing Schedule 4 soil quality standard for the substance.

Table 2 provides environmental health invertebrate and plant soil exposure upper cap concentrations for Schedule 4 substances. These environmental health upper cap concentrations were derived by applying the upper cap multiplier, as specified in Table 9, to the existing Schedule 4 soil quality standard for the substance.

4.0 Special case derivation of Table 8 upper cap concentrations

Table 8 provides human health vapour exposure upper cap concentrations for substances listed in Schedule 11 of the Regulation.

For human health vapour exposure upper cap concentrations derived for agricultural, urban park, residential or commercial vapour exposures, the Table 8 upper cap concentration represents the more stringent (i.e. the lesser) of either the threshold limit value (TLV) or 10 times the corresponding Schedule 11 standard for the substance (i.e. a 10 fold upper cap multiplier applied to the Schedule 11 standard).

For human health vapour exposure upper cap concentrations derived for industrial vapour exposures, the Table 8 upper cap concentration represents the more stringent (i.e. the lesser) of either the threshold limit value (TLV) or 100 times the corresponding Schedule 11 standard for the substance (i.e. a 100 fold upper cap multiplier applied to the Schedule 11 standard).