

Section 742.APPENDIX A: General

Section 742.TABLE A: Soil Saturation Limits (C_{sat}) for Chemicals Whose Melting Point is Less than 30° C

CAS No.	Chemical Name	C_{sat} (mg/kg)
67-64-1	Acetone	100,000
71-43-2	Benzene	870
111-44-4	Bis(2-chloroethyl)ether	3,300
117-81-7	Bis(2-ethylhexyl)phthalate	31,000
75-27-4	Bromodichloromethane (Dichlorobromomethane)	3,000
75-25-2	Bromoform	1,900
71-36-3	Butanol	10,000
85-68-7	Butyl benzyl phthalate	930
75-15-0	Carbon disulfide	720
56-23-5	Carbon tetrachloride	1,100
108-90-7	Chlorobenzene (Monochlorobenzene)	680
124-48-1	Chlorodibromomethane (Dibromochloromethane)	1,300
67-66-3	Chloroform	2,900
96-12-8	1,2-Dibromo-3-chloropropane	1,400
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	2,800
84-74-2	Di- <i>n</i> -butyl phthalate	2,300
95-50-1	1,2-Dichlorobenzene (o-Dichlorobenzene)	560
75-34-3	1,1-Dichloroethane	1,700
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	1,800
75-35-4	1,1-Dichloroethylene	1,500
156-59-2	<i>cis</i> -1,2-Dichloroethylene	1,200
156-60-5	<i>trans</i> -1,2-Dichloroethylene	3,100
78-87-5	1,2-Dichloropropane	1,100
542-75-6	1,3-Dichloropropene (1,3-Dichloropropylene, <i>cis</i> + <i>trans</i>)	1,400

CAS No.	Chemical Name	C _{sat} (mg/kg)
84-66-2	Diethyl phthalate	2,000
117-84-0	Di- <i>n</i> -octyl phthalate	10,000
100-41-4	Ethylbenzene	400
77-47-4	Hexachlorocyclopentadiene	2,200
78-59-1	Isophorone	4,600
74-83-9	Methyl bromide (Bromomethane)	3,200
75-09-2	Methylene chloride (Dichloromethane)	2,400
98-95-3	Nitrobenzene	1,000
100-42-5	Styrene	1,500
127-18-4	Tetrachloroethylene (Perchloroethylene)	240
108-88-3	Toluene	650
120-82-1	1,2,4-Trichlorobenzene	3,200
71-55-6	1,1,1-Trichloroethane	1,200
79-00-5	1,1,2-Trichloroethane	1,800
79-01-6	Trichloroethylene	1,300
108-05-4	Vinyl acetate	2,700
75-01-4	Vinyl chloride	1,200
108-38-3	m-Xylene	420
95-47-6	o-Xylene	410
106-42-3	p-Xylene	460
1330-20-7	Xylenes (total)	410 320
	Ionizable Organics	
95-57-8	2-Chlorophenol	53,000

(Source: Amended ~~in R00-19(B)~~ at 24-25 Ill. Reg. ____, effective _____)

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Section 742.TABLE D: Percentage Points of the W Test for $N_n=3(1)50$

N_n	0.01	0.05
3	0.753	0.767
4	0.687	0.748
5	0.686	0.762
6	0.713	0.788
7	0.730	0.803
8	0.749	0.818
9	0.764	0.829
10	0.781	0.842
11	0.792	0.850
12	0.805	0.859
13	0.814	0.866
14	0.825	0.874
15	0.835	0.881
16	0.844	0.887
17	0.851	0.892
18	0.858	0.897
19	0.863	0.901
20	0.868	0.905
21	0.873	0.908
22	0.878	0.911
23	0.881	0.914
24	0.884	0.916
25	0.888	0.918
26	0.891	0.920
27	0.894	0.923
28	0.896	0.924
29	0.898	0.926
30	0.900	0.927
31	0.902	0.929
32	0.904	0.930
33	0.906	0.931
34	0.908	0.933
35	0.910	0.934

(Source: Amended ~~in R00-19(B)~~ at 24-25 Ill. Reg. ____, effective _____)

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Section 742.TABLE E: Similar-Acting Noncarcinogenic Chemicals

Kidney

Acetone (Ingestion only)
 Cadmium (Ingestion only)
 Chlorobenzene
 Dalapon
 1,1-Dichloroethane
 Di-n-octyl phthalate (Ingestion only)
 Endosulfan
 Ethylbenzene
 Fluoranthene
 Nitrobenzene
 Pyrene
 Toluene (Ingestion only)
 2,4,5-Trichlorophenol
 Vinyl acetate (Ingestion only)

Liver

Acenaphthene
 Acetone (Ingestion only)
 Butylbenzyl phthalate (Ingestion only)
 Chlorobenzene (Ingestion only)
 1,1-Dichloroethylene (Ingestion only)
 Di-n-octyl phthalate (Ingestion only)
 Endrin
 Ethylbenzene
 Fluoranthene
 Nitrobenzene
 Picloram
 Styrene (Ingestion only)
 2,4,5-TP (Silvex)
 Toluene (Ingestion only)
 1,2,4-Trichlorobenzene (Inhalation only)
 2,4,5-Trichlorophenol

Central Nervous System

Butanol (Ingestion only)
 Cyanide (amenable)
 2,4-Dimethylphenol
 Endrin
 Manganese
 2-Methylphenol
 Mercury (Inhalation only)
 Styrene (Inhalation only)
 Toluene (Inhalation only)
 Xylenes (Ingestion only)

Circulatory System

Antimony
 Barium (Ingestion only)
 2,4-D

cis-1,2-Dichloroethylene (Ingestion only)
 Nitrobenzene
 trans-1,2-Dichloroethylene (Ingestion only)
 2,4-Dimethylphenol
 Fluoranthene
 Fluorene
 Styrene (Ingestion only)
 Zinc

Cholinesterase Inhibition

Aldicarb
 Carbofuran

Decreased Body Weight Gains
and Circulatory System Effects

Atrazine
 Simazine

Adrenal Gland

Nitrobenzene
 1,2,4-Trichlorobenzene (Ingestion only)

Respiratory System

1,2-Dichloropropane (Inhalation only)
 1,3-Dichloropropylene (Inhalation only)
 Hexachlorocyclopentadiene (Inhalation only)
 Methyl bromide (Inhalation only)
 Naphthalene (Inhalation only)
 Toluene (Inhalation only)
 Vinyl acetate (Inhalation only)

Immune System

2,4-Dichlorophenol
 p-Chloroaniline
 Styrene
 Mercury (Ingestion only)
 Styrene
 Zinc

Gastrointestinal System

Beryllium (Ingestion only)
 Endothall
 Hexachlorocyclopentadiene (Ingestion only)
 Methyl bromide (Ingestion only)

Reproductive System

Barium (Inhalation only)
 Boron (Ingestion only)
 Carbon disulfide
 2-Chlorophenol (Ingestion only)
 1,2 Dibromo-3-Chloropropane (Inhalation only)
 Dinoseb
 Ethylbenzene (Inhalation only)
 Methoxychlor
 Phenol

(Source: Amended in R00-19(B) at 24-25 Ill. Reg. _____, effective _____)

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Section 742.TABLE F: Similar-Acting Carcinogenic Chemicals

Kidney

Bromodichloromethane (Ingestion only)
 Chloroform (Ingestion only)
 1,2-Dibromo-3-chloropropane (Ingestion only)
 2,4-Dinitrotoluene
 2,6-Dinitrotoluene
 Hexachlorobenzene

Liver

Aldrin
 Bis(2-chloroethyl)ether
 Bis(2-ethylhexyl)phthalate (Ingestion only)
 Carbazole
 Carbon tetrachloride
 Chlordane
 Chloroform (Inhalation only)
 DDD
 DDE
 DDT
 1,2-Dibromo-3-chloropropane (Ingestion only)
 1,2-Dibromoethane(Ingestion only)
 3,3'-Dichlorobenzidine
 1,2-Dichloroethane
 1,3-Dichloropropane (Ingestion only)
 1,3-Dichloropropylene (Ingestion only)
 Dieldrin
 2,4-Dinitrotoluene
 2,6-Dinitrotoluene
 Heptachlor
 Heptachlor epoxide
 Hexachlorobenzene
 alpha-HCH
 gamma-HCH (Lindane)
 Methylene chloride
 N-Nitrosodiphenylamine
 N-Nitrosodi-n-propylamine
 Pentachlorophenol
 Tetrachloroethylene
 Trichloroethylene
 2,4,6-Trichlorophenol
 Toxaphene
 Vinyl chloride

Circulatory System

Benzene
 2,4,6-Trichlorophenol

Gastrointestinal System

Benzo(a)anthracene
 Benzo(b)fluoranthene
 Benzo(k)fluoranthene
 Benzo(a)pyrene
 Chrysene
 Dibenzo(a,h)anthracene
 Indeno(1,2,3-c,d)pyrene
 Bromodichloromethane (Ingestion only)
 Bromoform
 1,2-Dibromo-3-chloropropane (Ingestion only)
 1,2-Dibromoethane (Ingestion only)
 1,3-Dichloropropylene (Ingestion only)

Lung

Arsenic (Inhalation only)
 Beryllium (Inhalation only)
 Cadmium (Inhalation only)
 Chromium, hexavalent (Inhalation only)
 1,3-Dichloropropylene (Inhalation only)
 Methylene chloride (Inhalation only)
 N-Nitrosodi-n-propylamine
Nickel (Inhalation only)
 Vinyl chloride

Nasal Cavity

1,2-Dibromo-3-chloropropane (Inhalation only)
 1,2-Dibromoethane (Inhalation only)
 N-Nitrosodi-n-propylamine

Bladder

3,3'-Dichlorobenzidine
 1,3-Dichloropropylene (Ingestion only)
 N-Nitrosodiphenylamine

(Source: Amended in R90-19(B) at 24-25 Ill. Reg. _____, effective _____)

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TABLE H: Chemicals Whose Tier 1 Class I Groundwater Remediation Objective Exceeds the 1 in 1,000,000 Cancer Risk Concentration

Chemical	Class I Groundwater Remediation Objective (mg/l)	1 in 1,000,000 Cancer Risk Concentration (mg/l)	ADL (mg/l)
Aldrin	0.000040,014	0.000005	0.000040,014
Benzo(a)pyrene	0.0002	0.00000120,000012	0.00023
Bis(2-chloroethyl)ether	0.01	0.000077	0.01
Bis(2-ethylhexyl)phthalate (Di(2-ethylhexyl)phthalate)	0.006	0.0061	0.0027
Carbon Tetrachloride	0.005	0.00066	0.000030,0001
Chlordane	0.002	0.000066	0.00014
DDD	0.014	0.00023	0.014
DDE	0.01	0.00023	0.01
DDT	0.006	0.00023	0.006
Dibenzo(a,h)anthracene	0.0003	0.000012	0.0003
1,2-Dibromo-3-chloropropane	0.0002	0.000061	0.00020,001
1,2-dibromoethane	0.00005	0.000010	0.000050,001
3,3'-Dichlorobenzidine	0.02	0.00019	0.02
1,2-Dichloroethane	0.005	0.00094	0.0003
Dieldrin	0.00020,009	0.000053	0.00020,009
2,6-Dinitrotoluene	0.00031	0.0001	0.00031
Heptachlor	0.0004	0.000019	0.000030,013
Heptachlor epoxide	0.0002	0.000094	0.00020,015
Hexachlorobenzene	0.00006	0.000053	0.00006
Alpha-HCH	0.000030,00011	0.000014	0.000030,00011
Tetrachloroethylene	0.005	0.0016	0.00040,0004
Toxaphene	0.003	0.000077	0.00086
Vinyl chloride	0.002	0.000045	0.00060,0002
<u>Ionizable Organics</u>			
N-Nitrosodi-n-propylamine	0.040,0018	0.000012	0.040,0018
Pentachlorophenol	0.001	0.00071	0.0040,000076
2,4,6-Trichlorophenol	0.01	0.007	0.01

Inorganics Organics

Arsenic	0.05	0.000057	0.001
Beryllium	0.004	0.00002	0.004

(Source: Amended ~~in R00-19(B)~~ at 24-25 Ill. Reg. _____, effective _____)

Section 742.APPENDIX B: Tier 1 Tables and Illustrations

Section 742.TABLE A: Tier 1 Soil Remediation Objectives^a for Residential Properties

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils			Soil Component of the Groundwater Ingestion Exposure Route Values		
		Ingestion (mg/kg)	Inhalation (mg/kg)		Class I (mg/kg)	Class II (mg/kg)	ADL (mg/kg)
83-32-9	Acenaphthene	4,700 ^b	--- ^c		570 ^b	2,900	*
67-64-1	Acetone	7,800 ^b	100,000 ^d		16 ^b	16	*
15972-60-8	Alachlor ^o	8 ^e	--- ^c		0.04	0.2	NA
116-06-3	Aldicarb ^o	78 ^b	--- ^c		0.013	0.07	NA
309-00-2	Aldrin	0.04 ^e	3 ^e		0.5 ^e	2.5	0.94
120-12-7	Anthracene	23,000 ^b	--- ^c		12,000 ^b	59,000	*
1912-24-9	Atrazine ^o	2700 ^b	--- ^c		0.066	0.33	NA
71-43-2	Benzene	22 ^a 12 ^e	0.8 ^e		0.03	0.17	*
56-55-3	Benzo(a)anthracene	0.9 ^e	--- ^c		2	8	*
205-99-2	Benzo(b)fluoranthene	0.9 ^e	--- ^c		5	25	*

		Exposure Route-Specific Values for Soils			Soil Component of the Groundwater Ingestion Exposure Route Values		
CAS No.	Chemical Name	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	ADL (mg/kg)	
207-08-9	Benzo(<i>k</i>)fluoranthene	9 ^e	--- ^c	49	250	*	
50-32-8	Benzo(<i>a</i>)pyrene	0.09 ^{e,f}	--- ^c	8	82	*	
111-44-4	Bis(2-chloroethyl)ether	0.6 ^e	0.2 ^{e,f}	0.0004 ^{e,f}	0.0004	0.66	
117-81-7	Bis(2-ethylhexyl)phthalate	46 ^e	31,000 ^d	3,600	31,000 ^d	*	
75-27-4	Bromodichloromethane (Dichlorobromomethane)	10 ^e	3,000 ^d	0.6	0.6	*	
75-25-2	Bromoform	81 ^e	53 ^e	0.8	0.8	*	
71-36-3	Butanol	7,800 ^b	10,000 ^e	17 ^b	17	NA	
85-68-7	Butyl benzyl phthalate	16,000 ^b	930 ^d	930 ^d	930 ^d	*	
86-74-8	Carbazole	32 ^e	--- ^c	0.6 ^e	2.8	NA	
1563-66-2	Carbofuran ^o	390 ^b	--- ^c	0.22	1.1	NA	
75-15-0	Carbon disulfide	7,800 ^b	720 ^d	32 ^b	160	*	

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils			Soil Component of the Groundwater Ingestion Exposure Route Values		
		Ingestion (mg/kg)	Inhalation (mg/kg)		Class I (mg/kg)	Class II (mg/kg)	ADL (mg/kg)
56-23-5	Carbon tetrachloride	5 ^e	0.3 ^e		0.07	0.33	*
57-74-9	Chlordane	0.51.8 ^e	2072 ^e		10	48	*
106-47-8	4-Chloroaniline (<i>p</i> -Chloroaniline)	310 ^b	--- ^c		0.7 ^b	0.7	1.3*
108-90-7	Chlorobenzene (Monochlorobenzene)	1,600 ^b	130 ^b		1	6.5	*
124-48-1	Chlorodibromomethane (Dibromochloromethane)	1,600 ^b	1,300 ^d		0.4	0.4	*
67-66-3	Chloroform	100 ^e	0.3 ^e		0.6	2.9	*
218-01-9	Chrysene	88 ^e	--- ^c		160	800	*
94-75-7	2,4-D ^e	780 ^b	--- ^c		1.5	7.7	*
75-99-0	Dalapon ^e	2,300 ^b	--- ^c		0.85	8.5	1.2*
72-54-8	DDD	3 ^e	--- ^c		16 ^e	80	*
72-55-9	DDE	2 ^e	--- ^c		54 ^e	270	*

Exposure Route-Specific Values for Soils							Soil Component of the Groundwater Ingestion Exposure Route Values		
CAS No.	Chemical Name	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	ADL (mg/kg)			
50-29-3	DDT	2 ^e	--- ^g	32 ^e	160	*			
53-70-3	Dibenzo(<i>a,h</i>)anthracene	0.09 ^{e,f}	--- ^c	2	7.6	*			
96-12-8	1,2-Dibromo-3-chloropropane	0.46 ^e	11 ^b	0.002	0.002	*			
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	0.0075 ^e	0.17 ^e	0.0004	0.004	0.005			
84-74-2	Di- <i>n</i> -butyl phthalate	7,800 ^b	2,300 ^d	2,300 ^d	2,300 ^d	*			
95-50-1	1,2-Dichlorobenzene (<i>o</i> - Dichlorobenzene)	7,000 ^b	560 ^d	17	43	*			
106-46-7	1,4-Dichlorobenzene (<i>p</i> - Dichlorobenzene)	--- ^c	--- ^g 11,000 ^b	2	11	*			
91-94-1	3,3'-Dichlorobenzidine	1 ^e	--- ^c	0.007 ^{e,f}	0.033	1.3			
75-34-3	1,1-Dichloroethane	7,800 ^b	1,300 ^b	23 ^b	110	*			

		Exposure Route-Specific Values for Soils			Soil Component of the Groundwater Ingestion Exposure Route Values		
CAS No.	Chemical Name	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	ADL (mg/kg)	
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	7 ^e	0.4 ^e	0.02	0.1	*	
75-35-4	1,1-Dichloroethylene	700 ^b	1,500 ^d	0.06	0.3	*	
156-59-2	<i>cis</i> -1,2-Dichloroethylene	780 ^b	1,200 ^d	0.4	1.1	*	
156-60-5	<i>trans</i> -1,2-Dichloroethylene	1,600 ^b	3,100 ^d	0.7	3.4	*	
78-87-5	1,2-Dichloropropane	9 ^e	15 ^b	0.03	0.15	*	
542-75-6	1,3-Dichloropropene (1,3-Dichloropropylene, <i>cis</i> + <i>trans</i>)	4 ^e 6.4 ^e	0.1 ^b 1.1 ^b	0.004 ^e	0.02	0.005	
60-57-1	Dieldrin ⁿ	0.04 ^e	1 ^e	0.004 ^e	0.02	<u>0.603</u>	
84-66-2	Diethyl phthalate	63,000 ^b	2,000 ^d	470 ^b	470	*	
105-67-9	2,4-Dimethylphenol	1,600 ^b	--- ^c	9 ^b	9	*	
121-14-2	2,4-Dinitrotoluene	0.9 ^e	--- ^c	0.0008 ^{e,f}	0.0008	<u>0.0130, 250</u>	

Exposure Route-Specific Values for Soils							Soil Component of the Groundwater Ingestion Exposure Route Values		
CAS No.	Chemical Name	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	ADL (mg/kg)			
606-20-2	2,6-Dinitrotoluene	0.9 ^e	--- ^c	0.0007 ^{e,f}	0.0007	<u>0.00670.260</u>			
117-84-0	Di- <i>n</i> -octyl phthalate	1,600 ^b	10,000 ^d	10,000 ^d	10,000 ^d	*			
115-29-7	Endosulfan ^a	470 ^b	--- ^c	18 ^b	90	*			
145-73-3	Endothall ^e	1,600 ^b	--- ^c	0.4	0.4	NA			
72-20-8	Endrin	23 ^b	--- ^c	1	5	*			
100-41-4	Ethylbenzene	7,800 ^b	400 ^d	13	19	*			
206-44-0	Fluoranthene	3,100 ^b	--- ^c	4,300 ^b	21,000	*			
86-73-7	Fluorene	3,100 ^b	--- ^c	560 ^b	2,800	*			
76-44-8	Heptachlor	0.1 ^e	0.1 ^e	23	110	<u>0.871</u>			
1024-57-3	Heptachlor epoxide	0.07 ^e	5 ^e	0.7	3.3	<u>1.005</u>			
118-74-1	Hexachlorobenzene	0.4 ^e	1 ^e	2	11	*			
319-84-6	<i>alpha</i> -HCH (<i>alpha</i> -BHC)	0.1 ^e	0.8 ^e	0.0005 ^{e,f}	0.003	<u>0.0020.0074</u>			

		Exposure Route-Specific Values for Soils			Soil Component of the Groundwater Ingestion Exposure Route Values		
CAS No	Chemical Name	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	ADL (mg/kg)	
58-89-9	<i>gamma</i> -HCH (Lindane) ⁿ	0.5 ^e	--- ^c	0.009	0.047	*	
77-47-4	Hexachlorocyclopentadiene	550 ^b	10 ^b	400	2,200 ^d	*	
67-72-1	Hexachloroethane	78 ^b	--- ^c	0.5 ^b	2.6	*	
193-39-5	Indeno(1,2,3- <i>c,d</i>)pyrene	0.9 ^e	--- ^c	14	69	*	
78-59-1	Isophorone	15,600 ^b	4,600 ^d	8 ^b	8	*	
72-43-5	Methoxychlor ^e	390 ^b	--- ^c	160	780	*	
74-83-9	Methyl bromide (Bromomethane)	110 ^b	10 ^b	0.2 ^b	1.2	*	
75-09-2	Methylene chloride (Dichloromethane)	85 ^e	13 ^e	0.02 ^e	0.2	*	
95-48-7	2-Methylphenol (<i>o</i> - Cresol)	3,900 ^b	--- ^c	15 ^b	15	*	
91-20-3	Naphthalene	3,100,1,600 ^b	--- ^e 170 ^b	8412 ^b	42018	*	
98-95-3	Nitrobenzene	39 ^b	92 ^b	0.1 ^{b,f}	0.1	0.26	

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils			Soil Component of the Groundwater Ingestion Exposure Route Values		
		Ingestion (mg/kg)	Inhalation (mg/kg)		Class I (mg/kg)	Class II (mg/kg)	ADL (mg/kg)
86-30-6	N-Nitrosodiphenylamine	130 ^e	--- ^c		1 ^e	5.6	*
621-64-7	N-Nitrosodi-n-propylamine	0.09 ^{e,f}	--- ^c		0.00005 ^{e,f}	0.00005	0.660,0018
108-95-2	Phenol	47,000 ^b	--- ^c		100 ^b	100	*
1918-02-1	Picloram ^o	5,500 ^b	--- ^c		2	20	NA
1336-36-3	Polychlorinated biphenyls (PCBs) ⁿ	14,140 ^h	--- ^{c,h}		--- ^h	--- ^h	*
129-00-0	Pyrene	2,300 ^b	--- ^c		4,200 ^b	21,000	*
122-34-9	Simazine ^o	390 ^b	--- ^c		0.04	0.37	NA
100-42-5	Styrene	16,000 ^b	1,500 ^d		4	18	*
127-18-4	Tetrachloroethylene (Perchloroethylene)	12 ^e	11 ^e		0.06	0.3	*
108-88-3	Toluene	16,000 ^b	650 ^d		12	29	*

		Exposure Route-Specific Values for Soils			Soil Component of the Groundwater Ingestion Exposure Route Values		
CAS No	Chemical Name	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	ADL (mg/kg)	
8001-35-2	Toxaphene ^a	0.6 ^e	89 ^e	31	150	*	
120-82-1	1,2,4-Trichlorobenzene	780 ^b	3,200 ^b	5	53	*	
71-55-6	1,1,1-Trichloroethane	--- ^c	1,200 ^d	2	9.6	*	
79-00-5	1,1,2-Trichloroethane	310 ^b	1,800 ^d	0.02	0.3	*	
79-01-6	Trichloroethylene	58 ^e	5 ^e	0.06	0.3	*	
108-05-4	Vinyl acetate	78,000 ^b	1,000 ^b	170 ^b	170	*	
75-01-4	Vinyl chloride	0.3 ^b 0.46 ^e	0.03 ^b 0.28 ^e	0.01 ^f	0.07	*	
108-38-3	m-Xylene	160,000 ^b	420 ^d	210	210	*	
95-47-6	o-Xylene	160,000 ^b	410 ^d	190	190	*	
106-42-3	p-Xylene	160,000 ^b	460 ^d	200	200	*	

		Exposure Route-Specific Values for Soils			Soil Component of the Groundwater Ingestion Exposure Route Values			
CAS No.	Chemical Name	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	ADL (mg/kg)		
1330-20-7	Xylenes (total)	160,000 ^b	410 ^d 320 ^d	150	150	*		
	Ionizable Organics							
65-85-0	Benzoic Acid	310,000 ^b	--- ^c	400 ^{b,i}	400 ⁱ	*		
95-57-8	2-Chlorophenol	390 ^b	53,000 ^d	4 ^{b,i}	4 ⁱ	*		
120-83-2	2,4-Dichlorophenol	230 ^b	--- ^c	1 ^{b,i}	1 ⁱ	*		
51-28-5	2,4-Dinitrophenol	160 ^b	--- ^c	0.2 ^{b,f}	0.2	3.3		
88-85-7	Dinoseb ^o	78 ^b	--- ^c	0.34 ^{b,i}	3.4 ⁱ	*		
87-86-5	Pentachlorophenol	3 ^{e,j}	--- ^c	0.03 ^{f,i}	0.14 ⁱ	2.4*		
93-72-1	2,4,5-TP (Silvex)	630 ^b	--- ^c	11 ⁱ	55 ⁱ	*		
95-95-4	2,4,5-Trichlorophenol	7,800 ^b	--- ^c	270 ^{b,i}	1,400 ⁱ	*		
88-06-2	2,4,6 Trichlorophenol	58 ^e	200 ^e	0.2 ^{e,f,i}	0.77 ⁱ	0.430.66		

CAS No.	Chemical Name	Exposure Route-specific Values for Soils			Soil Component of the Groundwater Ingestion Exposure Route Values		
		Ingestion (mg/kg)	Inhalation (mg/kg)		Class I (mg/L)	Class II (mg/L)	ADL (mg/kg)
	Inorganics						
7440-36-0	Antimony	31 ^b	--- ^c		0.006 ^m	0.024 ^m	*
7440-38-2	Arsenic ^{1a}	0.4 ^{e,t}	750 ^e		0.05 ^m	0.2 ^m	*
7440-39-3	Barium	5,500 ^b	690,000 ^b		2.0 ^m	2.0 ^m	*
7440-41-7	Beryllium	0.4 ^{e,t} 160 ^b	1,300 ^e		0.004 ^m	0.5 ^m	*
7440-42-8	Boron	7,000 ^b	--- ^g		2.0 ^m	2.0 ^m	*
7440-43-9	Cadmium ^{1a}	78 ^{b,r}	1,800 ^e		0.005 ^m	0.05 ^m	*
16887-00-6	Chloride	--- ^c	--- ^c		200 ^m	200 ^m	*
7440-47-3	Chromium, total	390 230 ^b	270 ^e		0.1 ^m	1.0 ^m	*
16065-83-1	Chromium, ion, trivalent	78,000 120,000 ^b	--- ^c		--- ^g	--- ^g	*
18540-29-9	Chromium, ion, hexavalent	390 230 ^b	270 ^e		---	---	*
7440-48-4	Cobalt	4,700 ^b	--- ^c		1.0 ^m	1.0 ^m	*

CAS No.	Chemical Name	Exposure Route-specific Values for Soils			Soil Component: of the Groundwater Ingestion Exposure Route Values		
		Ingestion (mg/kg)	Inhalation (mg/kg)		Class I (mg/L)	Class II (mg/L)	ADL (mg/kg)
7440-50-8	Copper ⁿ	2,900 ^b	--- ^c		0.65 ^m	0.65 ^m	*
57-12-5	Cyanide (amenable)	1,600 ^b	--- ^c		0.2 ^{q,m}	0.6 ^{q,m}	*
7782-41-4	Fluoride	4,700 ^b	--- ^c		4.0 ^m	4.0 ^m	*
15438-31-0	Iron	--- ^c	--- ^c		5.0 ^m	5.0 ^m	*
7439-92-1	Lead	400 ^k	--- ^c		0.0075 ^m	0.1 ^m	*
7439-96-5	Manganese	3,700 ^b	69,000 ^b		0.15 ^m	10.0 ^m	*
7439-97-6	Mercury ^{1,n,s}	23 ^{b,s}	10 ^{b,d}		0.002 ^m	0.01 ^m	*
7440-02-0	Nickel ^l	1,600 ^b	13,000 ^e		0.1 ^m	2.0 ^m	*
14797-55-8	Nitrate as N ^p	130,000 ^b	--- ^c		10.0 ^q	100 ^q	*
7782-49-2	Selenium ^{1,n}	390 ^b	--- ^c		0.05 ^m	0.05 ^m	*

CAS No.	Chemical Name	Exposure Route-specific Values for Soils			Soil Component of the Groundwater Ingestion Exposure Route Values		ADL (mg/kg)
		Ingestion (mg/kg)	Inhalation (mg/kg)		Class I (mg/L)	Class II (mg/L)	
7440-22-4	Silver	390 ^b	--- ^c		0.05 ^m	---	*
14808-79-8	Sulfate	--- ^c	--- ^c		400 ^m	400 ^m	*
7440-28-0	Thallium	6.3 ^{b,u}	--- ^c		0.002 ^m	0.02 ^m	*
7440-62-2	Vanadium	550 ^b	--- ^c		0.049 ^m	---0.1 ^m	*
7440-66-6	Zinc ^l	23,000 ^b	--- ^c		5.0 ^m	10 ^m	*

"" indicates that the ADL is less than or equal to the specified remediation objective.
 NA means not available; no PQL or EQL available in USEPA analytical methods.

Chemical Name and Soil Remediation Objective Notations

- ^a Soil remediation objectives based on human health criteria only.
- ^b Calculated values correspond to a target hazard quotient of 1.
- ^c No toxicity criteria available for the route of exposure.
- ^d Soil saturation concentration ($C_{(fsat)}$) = the concentration at which the absorptive limits of the soil particles, the solubility limits of the available soil moisture, and saturation of soil pore air have been reached. Above the soil saturation concentration, the assumptions regarding vapor transport to air and/or dissolved phase transport to groundwater (for chemicals which are liquid at ambient soil temperatures) have been violated, and alternative modeling approaches are required.
- ^e Calculated values correspond to a cancer risk level of 1 in 1,000,000.
- ^f Level is at or below Contract Laboratory Program required quantitation limit for Regular Analytical Services (RAS).
- ^g Chemical-specific properties are such that this route is not of concern at any soil contaminant concentration.
- ^h A preliminary goal of 1 ppm has been set for PCBs based on *Guidance on Remedial Actions for Superfund Sites with PCB Contamination*, EPA/540G-90/007, and on USEPA efforts to manage PCB contamination. See 40 CFR 761.120—USEPA "PCB Spill Cleanup Policy." This regulation goes on to say that the remediation goal for an unrestricted area is 10 ppm and 25 ppm for a restricted area, provided both have at least 10 inches of clean cover. 40 CFR 761 contains applicability requirements and methodologies for the development of PCB remediation objectives. Requests for approval of a Tier 3 evaluation must address the applicability of 40 CFR 761.
- ⁱ Soil remediation objective for pH of 6.8. If soil pH is other than 6.8, refer to Appendix B, Tables C and D of this Part.
- ^j Ingestion soil remediation objective adjusted by a factor of 0.5 to account for dermal route.
- ^k A preliminary remediation goal of 400 mg/kg has been set for lead based on *Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities*, OSWER Directive #9355.4-12.
- ^l Potential for soil-plant-human exposure.
- ^m The person conducting the remediation has the option to use: 1) TCLP or SPLP test results to compare with the remediation objectives listed in this Table; or 2) the total amount of contaminant in the soil sample results to compare with pH specific remediation objectives listed in Appendix B, Table C or D of this Part. (See Section 742.510.) If the person conducting the remediation wishes to calculate soil remediation objectives based on background concentrations, this should be done in accordance with Subpart D of this Part.
- ⁿ The Agency reserves the right to evaluate the potential for remaining contaminant concentrations to pose significant threats to crops, livestock, or wildlife.
- ^o For agricultural facilities, remediation objectives for surficial soils which are based on field application rates may be more appropriate for currently registered pesticides. Consult the Agency for further information.
- ^p For agricultural facilities, soil remediation objectives based on site-specific background concentrations of Nitrate as N may be more appropriate. Such determinations shall be conducted in accordance with the procedures set forth in Subparts D and I of this Part.
- ^q The TCLP extraction must be done using water at a pH of 7.0.
- ^r Value based on dietary Reference Dose.
- ^s Value based on Reference Dose for Methylene chloride (CAS No. 7487-94-7). Value for Ingestion based on Reference Dose for Mercuric chloride (CAS No. 7487-94-7). Value for Inhalation based on Reference Concentration for elemental Mercury (CAS No. 7439-97-6).
- ^t Note that Table value is likely to be less than background concentration for this chemical; screening or remediation concentrations using the procedures of Subpart D of this Part may be more appropriate. For the ingestion route for arsenic, see 742 Appendix A, Table G.
- ^u Value based on Reference Dose for ~~arsenic~~ sulfate (CAS No. 7446-18-6).

(Source: Amended ~~in R00-19(B)~~ at 24 25 Ill. Reg. _____, effective _____)

Section 742. APPENDIX B: Tier 1 Tables and Illustrations

Section 742. Table B: Tier 1 Soil Remediation Objectives^a for Industrial/Commercial Properties

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils						Soil Component of the Groundwater Ingestion Exposure Route		
		Industrial-Commercial			Construction Worker			Values		
		Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	ADL (mg/kg)
83-32-9	Acenaphthene	120,000 ^b	----- ^c	120,000 ^b	----- ^c	120,000 ^b	----- ^c	570 ^b	2,900	*
67-64-1	Acetone	200,000 ^b	100,000 ^d	200,000 ^b	100,000 ^d	200,000 ^b	100,000 ^d	16 ^b	16	*
15972-60-8	Alachlor ^o	72 ^e	----- ^c	1,600 ^e	----- ^c	1,600 ^e	----- ^c	0.04	0.2	NA
116-06-3	Aldicarb ^o	2,000 ^b	----- ^c	200 ^b	----- ^c	200 ^b	----- ^c	0.013	0.07	NA
309-00-2	Aldrin	0.3 ^e	6.6 ^e	6.1 ^b	9.3 ^e	6.1 ^b	9.3 ^e	0.5 ^e	2.5	0.94
120-12-7	Anthracene	610,000 ^b	----- ^c	610,000 ^b	----- ^c	610,000 ^b	----- ^c	12,000 ^b	59,000	*
1912-24-9	Atrazine ^o	72,000 ^b	----- ^c	7,100 ^b	----- ^c	7,100 ^b	----- ^c	0.066	0.33	NA
71-43-2	Benzene	200 ^e 100 ^e	1-51.6 ^e	4,300 ^e 2,300 ^e	2-12.2 ^e	4,300 ^e 2,300 ^e	2-12.2 ^e	0.03	0.17	*

Exposure Route-Specific Values for Soils			Soil Component of the Groundwater Ingestion Exposure Route			
CAS No.	Chemical Name	Industrial-Commercial		Construction Worker		Values
		Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	
56-55-3	Benzo(a)anthracene	8 ^e	----- ^c	170 ^e	----- ^c	2 8 *
205-99-2	Benzo(b)fluoranthene	8 ^e	----- ^c	170 ^e	----- ^c	5 25 *
207-08-9	Benzo(k)fluoranthene	78 ^e	----- ^c	1,700 ^e	----- ^c	49 250 *
50-32-8	Benzo(a)pyrene	0.8 ^e	----- ^c	17 ^e	----- ^c	8 82 *
111-44-4	Bis(2-chloroethyl)ether	5 ^e	0.47 ^e	75 ^e	0.66 ^e	0.0004 ^{e,f} 0.0004 0.66
117-81-7	Bis(2-ethylhexyl)phthalate	410 ^e	31,000 ^d	4,100 ^b	31,000 ^d	3,600 31,000 ^d *
75-27-4	Bromodichloromethane (Dichlorobromomethane)	92 ^e	3,000 ^d	2,000 ^e	3,000 ^d	0.6 0.6 *
75-25-2	Bromoform	720 ^e	100 ^e	16,000 ^e	140 ^e	0.8 0.8 *
71-36-3	Butanol	200,000 ^b	10,000 ^d	200,000 ^b	10,000 ^d	17 ^b 17 NA
85-68-7	Butyl benzyl phthalate	410,000 ^b	930 ^d	410,000 ^b	930 ^d	930 ^d 930 ^d *
86-74-8	Carbazole	290 ^e	----- ^c	6,200 ^e	----- ^c	0.6 ^e 2.8 NA

Exposure Route-Specific Values for Soils						Soil Component of the Groundwater Ingestion Exposure Route			
	CAS No.	Chemical Name	Industrial-Commercial		Construction Worker		Values		
			Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	ADL (mg/kg)
	1563-66-2	Carbofuran ^o	10,000 ^t	----- ^c	1,000 ^b	----- ^c	0.22	1.1	NA
	75-15-0	Carbon disulfide	200,000 ^b	720 ^d	20,000 ^b	9.0 ^b	32 ^b	160	*
	56-23-5	Carbon tetrachloride	44 ^e	0.64 ^e	410 ^b	0.90 ^e	0.07	0.33	*
	57-74-9	Chlordane	41.6 ^e	38140 ^e	42100 ^b	53 ^e 22 ^b	10	48	*
	106-47-8	4 - Chloroaniline (<i>p</i> -Chloroaniline)	8,200 ^b	----- ^c	820 ^b	----- ^c	0.7 ^b	0.7	43 [*] _
	108-90-7	Chlorobenzene (Monochlorobenzene)	41,000 ^b	210 ^b	4,100 ^b	1.3 ^b	1	6.5	*
	124-48-1	Chlorodibromomethane (Dibromochloromethane)	41,000 ^b	1,300 ^d	41,000 ^b	1,300 ^d	0.4	0.4	*
	67-66-3	Chloroform	940 ^e	0.54 ^e	2,000 ^b	0.76 ^e	0.6	2.9	*
	218-01-9	Chrysene	780 ^e	----- ^c	17,000 ^e	----- ^e	160	800	*
	94-75-7	2,4-D ^o	20,000 ^b	----- ^c	2,000 ^b	----- ^c	1.5	7.7	*

Exposure Route-Specific Values for Soils						Soil Component of the Groundwater Ingestion Exposure Route			
			Industrial-Commercial		Construction Worker		Values		
			Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	ADL (mg/kg)
75-99-0	Dalapon ^e	61,000 ^b	----- ^c	6,100 ^b	----- ^c	0.85	8.5	1-2*	
72-54-8	DDD	24 ^e	----- ^c	520 ^e	----- ^c	16 ^e	80	*	
72-55-9	DDE	17 ^e	----- ^c	370 ^e	----- ^c	54 ^e	270	*	
50-29-3	DDT	17 ^e	1,500 ^e	100 ^b	2,100 ^e	32 ^e	160	*	
53-70-3	Dibenzo(<i>a,h</i>)anthracene	0.8 ^e	----- ^c	17 ^e	----- ^c	2	7.6	*	
96-12-8	1,2-Dibromo-3-chloropropane	4 ^e	17 ^b	89 ^e	0.11 ^b	0.002	0.002	*	
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	0.07 ^e	0.32 ^e	1.5 ^e	0.45 ^e	0.0004	0.004	0.005	
84-74-2	Di- <i>n</i> -butyl phthalate	200,000 ^b	2,300 ^d	200,000 ^b	2,300 ^d	2,300 ^d	2,300 ^d	*	
95-50-1	1,2-Dichlorobenzene (<i>o</i> - Dichlorobenzene)	180,000 ^b	560 ^d	18,000 ^b	310 ^b	17	43	*	
106-46-7	1,4-Dichlorobenzene (<i>p</i> - Dichlorobenzene)	----- ^c	17,000 ^b	----- ^c	340 ^b	2	11	*	

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils						Soil Component of the Groundwater Ingestion Exposure Route Values		
		Industrial-Commercial			Construction Worker			Class I (mg/kg)	Class II (mg/kg)	ADL (mg/kg)
		Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)			
91-94-1	3,3'-Dichlorobenzidine	13 ^e	----- ^c	280 ^e	----- ^c	280 ^e	----- ^c	0.007 ^{e,f}	0.033	1.3
75-34-3	1,1-Dichloroethane	200,000 ^b	1,700 ^d	200,000 ^b	130 ^b	200,000 ^b	130 ^b	23 ^b	110	*
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	63 ^e	0.70 ^e	1,400 ^e	0.99 ^e	1,400 ^e	0.99 ^e	0.02	0.1	*
75-35-4	1,1-Dichloroethylene	18,000 ^b	1,500 ^d	1,800 ^b	1,500 ^d	1,800 ^b	1,500 ^d	0.06	0.3	*
156-59-2	cis-1,2-Dichloroethylene	20,000 ^b	1,200 ^d	20,000 ^b	1,200 ^d	20,000 ^b	1,200 ^d	0.4	1.1	*
156-60-5	trans-1,2-Dichloroethylene	41,000 ^b	3,100 ^d	41,000 ^b	3,100 ^d	41,000 ^b	3,100 ^d	0.7	3.4	*
78-87-5	1,2-Dichloropropane	84 ^e	23 ^b	1,800 ^e	0.50 ^b	1,800 ^e	0.50 ^b	0.03	0.15	*
542-75-6	1,3-Dichloropropene (1,3-Dichloropropylene, cis + trans)	33 ^e	0.23 ^d	610 ^e	0.33 ^d	610 ^e	0.33 ^d	0.004 ^e	0.02	0.005
60-57-1	Dieldrin ⁿ	0.4 ^e	2.2 ^e	7.8 ^e	3.1 ^e	7.8 ^e	3.1 ^e	0.004 ^e	0.02	0.0013
84-66-2	Diethyl phthalate	1,000,000 ^b	2,000 ^d	1,000,000 ^b	2,000 ^d	1,000,000 ^b	2,000 ^d	470 ^b	470	*

Exposure Route-Specific Values for Soils										Soil Component of the Groundwater Ingestion Exposure Route		
CAS No.	Chemical Name	Industrial-Commercial				Construction Worker				Values		
		Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	ADL (mg/kg)		
105-67-9	2,4-Dimethylphenol	41,000 ^b	----- ^c	41,000 ^b	----- ^c			9 ^b		*		
121-14-2	2,4-Dinitrotoluene	8.4 ^c	----- ^c	180 ^c	----- ^c			0.0008 ^{e,f}	0.0008	0.013 0.250		
606-20-2	2,6-Dinitrotoluene	8.4 ^c	----- ^c	180 ^c	----- ^c			0.0007 ^{e,f}	0.0007	0.0067 0.260		
117-84-0	Di-n-octyl phthalate	41,000 ^e	10,000 ^d	4,100 ^b	10,000 ^d			10,000 ^d	10,000 ^d	*		
115-29-7	Erdosulfan ^e	12,000 ^b	----- ^c	1,200 ^b	----- ^c			18 ^b	90	*		
145-73-3	Erdothall ^o	41,000 ^c	----- ^c	4,100 ^b	----- ^c			0.4	0.4	NA		
72-20-8	Erdrin	610 ^b	----- ^c	61 ^b	----- ^c			1	5	*		
100-41-4	Ethylbenzene	200,000 ^b	400 ^d	20,000 ^b	58 ^b			13	19	*		
206-44-0	Fluoranthene	82,000 ^b	----- ^c	82,000 ^b	----- ^c			4,300 ^b	21,000	*		
86-73-7	Fluorene	82,000 ^b	----- ^c	82,000 ^b	----- ^c			560 ^b	2,800	*		
76-44-8	Heptachlor	1 ^c	11 ^c	28 ^c	16 ^c			23	110	*		

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils						Soil Component of the Groundwater Ingestion Exposure Route		
		Industrial-Commercial			Construction Worker			Values		
		Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	ADL (mg/kg)
1024-57-3	Heptachlor epoxide	0.6 ^e	9.2 ^e	2.7 ^b	13 ^e			0.7	3.3	1,005
118-74-1	Hexachlorobenzene	4 ^e	1.8 ^e	78 ^e	2.6 ^e			2	11	*
319-84-6	<i>alpha</i> -HCH (<i>alpha</i> -BHC)	0.9 ^e	1.5 ^e	20 ^e	2.1 ^e			0.0005 ^{e,f}	0.003	0.002 0.0074
58-89-9	<i>gamma</i> -HCH (Lindane) ^r	4 ^e	----- ^c	96 ^e	----- ^c			0.009	0.047	*
77-47-4	Hexachlorocyclopentadiene	14,000 ^b	16 ^b	14,000 ^b	1.1 ^b			400	2,200 ^d	*
67-72-1	Hexachloroethane	2,000 ^t	----- ^c	2,000 ^b	----- ^c			0.5 ^b	2.6	*
193-39-5	Indeno(1,2,3- <i>c,d</i>)pyrene	8 ^e	----- ^c	170 ^e	----- ^c			14	69	*
78-59-1	Isophorone	410,000 ^b	4,600 ^d	410,000 ^b	4,600 ^d			8 ^b	8	*
72-43-5	Methoxychlor ^a	10,000 ^b	----- ^c	1,000 ^b	----- ^c			160	780	*
74-83-9	Methyl bromide (Bromomethane)	2,900 ^t	15 ^b	1,000 ^b	3.9 ^b			0.2 ^b	1.2	*

Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Exposure Route		
CAS No.	Chemical Name	Industrial-Commercial		Construction Worker		ADL (mg/kg)
		Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	
75-09-2	Methylene chloride (Dichloromethane)	760 ^e	24 ^e	12,000 ^b	34 ^e	0.02 ^e
95-48-7	2-Methylphenol (o - Cresol)	100,000 ^b	----- ^c	100,000 ^b	----- ^c	15 ^b
86-30-6	N-Nitrosodiphenylamine	1,200 ^e	----- ^c	25,000 ^e	----- ^c	1 ^e
621-64-7	N-Nitrosodi-n-propylamine	0.8 ^e	----- ^c	18 ^e	----- ^c	0.00005 ^{e,f}
91-20-3	Naphthalene	82,000-41,000 ^b	----- ^a 270 ^b	8,200-4,100 ^b	----- ^a 1.8 ^b	8412 ^b
98-95-3	Nitrobenzene	1,000 ^b	140 ^b	1,000 ^b	9.4 ^b	0.1 ^{b,f}
108-95-2	Phenol	1,000,000 ^b	----- ^c	120,000 ^b	----- ^c	100 ^b
1918-02-1	Picloram ^o	140,000 ^b	----- ^c	14,000 ^b	----- ^c	2
1336-36-3	Polychlorinated biphenyls (PCBs) ⁿ	14-140-25 ^b	----- ^{c,h}	1 ^b	----- ^{c,h}	----- ^b
129-00-0	Pyrene	61,000 ^b	----- ^c	61,000 ^b	----- ^c	4,200 ^b
						21,000
						NA
						----- ^b
						4,200 ^b
						21,000
						NA
						----- ^b
						4,200 ^b
						21,000
						NA
						----- ^b
						4,200 ^b
						21,000
						NA
						----- ^b
						4,200 ^b
						21,000
						NA
						----- ^b
						4,200 ^b
						21,000
						NA
						----- ^b
						4,200 ^b
						21,000
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Exposure Route-Specific Values for Soils						Soil Component of the Groundwater Ingestion Exposure Route			
			Industrial-Commercial		Construction Worker		Values		
			Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	ADL (mg/kg)
122-34-9	Simazine ^o	10,000 ^c	----- ^c	1,000 ^b	----- ^c	0.04	0.37	NA	
100-42-5	Styrene	410,000 ^b	1,500 ^d	41,000 ^b	430 ^b	4	18	*	
127-18-4	Tetrachloroethylene (Perchloroethylene)	110 ^e	20 ^e	2,400 ^e	28 ^e	0.06	0.3	*	
108-88-3	Toluene	410,000 ^b	650 ^d	410,000 ^b	42 ^b	12	29	*	
8001-35-2	Toxaphene ⁿ	5.2 ^e	170 ^e	110 ^e	240 ^e	31	150	*	
120-82-1	1,2,4-Trichlorobenzene	20,000 ^b	3,200 ^d	2,000 ^b	920 ^b	5	53	*	
71-55-6	1,1,1-Trichloroethane	----- ^c	1,200 ^d	----- ^c	1,200 ^d	2	9.6	*	
79-00-5	1,1,2-Trichloroethane	8,200 ^b	1,800 ^d	8,200 ^b	1,800 ^d	0.02	0.3	*	
79-01-6	Trichloroethylene	520 ^e	8.9 ^e	1,200 ^b	12 ^e	0.06	0.3	*	
108-05-4	Vinyl acetate	1,000,000 ^b	1,600 ^b	200,000 ^b	10 ^b	170 ^b	170	*	

Exposure Route-Specific Values for Soils						Soil Component of the Groundwater Ingestion Exposure Route			
			Industrial-Commercial		Construction Worker		Values		
			Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	ADL (mg/kg)
75-01-4	Vinyl chloride	37.9 ^a	0.06 ^{a,i}	65,170 ^a	0.08 ^{a,i}	0.01 ^f	0.07	*	
108-38-3	m-Xylene	1,000,000	420 ^d	410,000 ^b	420 ^d	210	210	*	
95-47-6	o-Xylene	1,000,000	410 ^d	410,000 ^b	410 ^d	190	190	*	
106-42-3	p-Xylene	1,000,000	460 ^d	410,000 ^b	460 ^d	200	200	*	
1330-20-7	Xylenes (total)	1,000,000 ^b	410 ^d 320 ^d	410,000 ^b	410 ^d 320 ^d	150	150	*	
	Ionizable Organics								
65-85-0	Benzoic Acid	1,000,000 ^b	----- ^c	820,000 ^b	----- ^c	400 ^{b,i}	400 ⁱ	*	
95-57-8	2-Chlorophenol	10,000 ^b	53,000 ^d	10,000 ^b	53,000 ^d	4 ^{b,i}	20 ⁱ	*	
120-83-2	2,4-Dichlorophenol	6,100 ^b	----- ^c	610 ^b	----- ^c	1 ^{b,i}	1 ⁱ	*	
51-28-5	2,4-Dinitrophenol	4,100 ^b	----- ^c	410 ^b	----- ^c	0.2 ^{b,f,i}	0.2 ⁱ	3.3	
88-85-7	Dinoseb ^o	2,000 ^b	----- ^c	200 ^b	----- ^c	0.34 ^{b,i}	3.4 ⁱ	*	

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils						Soil Component of the Groundwater Ingestion Exposure Route		
		Industrial-Commercial			Construction Worker			Values		
		Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	ADL (mg/kg)
87-86-5	Pentachlorophenol	24 ^{e,j}	----- ^c	520 ^{e,j}	----- ^c			0.03 ^{f,i}	0.14 ⁱ	2.4 [*]
93-72-1	2,4,5-TP (Silvex)	16,000 ^b	----- ^c	1,600 ^b	----- ^c			11 ⁱ	55 ⁱ	*
95-95-4	2,4,5-Trichlorophenol	200,000 ^b	----- ^c	200,000 ^b	----- ^c			270 ^{b,i}	1,400 ⁱ	*
88-06-2	2,4,6-Trichlorophenol	520 ^e	390 ^e	11,000 ^e	540 ^e			0.2 ^{e,f,i}	0.77 ⁱ	0.430.66

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils						Soil Component of the Groundwater Ingestion Exposure Route Values		
		Industrial-Commercial			Construction Worker			Class I (mg/L)	Class II (mg/L)	ADL (mg/kg)
		Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)			
	Inorganics									
7440-36-0	Antimony	82 ^b	----- ^c	82 ^b	----- ^c			0.006 ^m	0.024 ^m	*
7440-38-2	Arsenic ^{1,n}	3 ^{e,t}	1,200 ^e	61 ^b	25,000 ^e			0.05 ^m	0.2 ^m	*
7440-39-3	Barium	140,000 ^b	910,000 ^b	14,000 ^b	870,000 ^b			2.0 ^m	2.0 ^m	*
7440-41-7	Beryllium	4 ^{e,t} 4,100 ^b	2,100 ^e	29 ^e 410 ^b	44,000 ^e			0.004 ^m	0.5 ^m	*
7440-42-8	Boron	180,000 ^b	1,000,000	18,000 ^b	1,000,000			2.0 ^m	2.0 ^m	*
7440-43-9	Cadmium ^{1,n}	2,000 ^{b,r}	2,800 ^e	200 ^{b,r}	59,000 ^e			0.005 ^m	0.05 ^m	*
16887-00-6	Chloride	----- ^c	----- ^c	----- ^c	----- ^c			200 ^m	200 ^m	*
7440-47-3	Chromium, total	10,000 6,100 ^b	420 ^e	4,100 ^b	8,800 650 ^b			0.1 ^m	1.0 ^m	*
16065-83-1	Chromium, ion, trivalent	1,000,000 ^b	----- ^c	330,000 310,000 ^b	----- ^c			----- ^g	----- ^g	*
18540-29-9	Chromium, ion, hexavalent	10,000 6,100 ^b	420 ^e	4,100 ^b	8,800 650 ^b			-----	-----	*

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils						Soil Component of the Groundwater Ingestion Exposure Route Values		
		Industrial-Commercial			Construction Worker			Class I (mg/L)	Class II (mg/L)	ADL (mg/kg)
		Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)			
7440-48-4	Cobalt	120,000 ^b	----- ^c	12,000 ^b	----- ^c			1.0 ^m	1.0 ^m	*
7440-50-8	Copper ⁿ	82,000 ^b	----- ^c	8,200 ^b	----- ^c			0.65 ^m	0.65 ^m	*
57-12-5	Cyanide (amenable)	41,000 ^b	----- ^c	4,100 ^b	----- ^c			0.2 ^{q,m}	0.6 ^{q,m}	*
7782-41-4	Fluoride	120,000 ^b	----- ^c	12,000 ^b	----- ^c			4.0 ^m	4.0 ^m	*
15438-31-0	Iron	----- ^c	----- ^c	----- ^c	----- ^c			5.0 ^m	5.0 ^m	*
7439-92-1	Lead	400 ^k	----- ^c	400 ^k	----- ^c			0.0075 ^m	0.1 ^m	*
7439-96-5	Manganese	96,000 ^b	91,000 ^b	9,600 ^b	8,700 ^b			0.15 ^m	10.0 ^m	*
7439-97-6	Mercury ^{l,n,s}	610 ^b	540,000 ^b	61 ^{b,s}	52,000 ^b			0.002 ^m	0.01 ^m	*
7440-02-0	Nickel ^l	41,000 ^b	21,000 ^e	4,100 ^b	440,000 ^e			0.1 ^m	2.0 ^m	*
14797-55-8	Nitrate as NP	1,000,000 ^b	----- ^c	330,000 ^b	----- ^c			10.0 ^q	100 ^q	*
7782-49-2	Selenium ^{l,n}	10,000 ^b	----- ^c	1,000 ^b	----- ^c			0.05 ^m	0.05 ^m	*

CAS No.		Chemical Name	Exposure Route-Specific Values for Soils						Soil Component of the Groundwater Ingestion Exposure Route Values			ADL (mg/kg)		
			Industrial-Commercial		Construction Worker		Inhalation (mg/kg)	Ingestion (mg/kg)					Inhalation (mg/kg)	Ingestion (mg/kg)
7440-22-4	Silver	10,000 ^b	----- ^c	----- ^c	1,000 ^b	----- ^c	0.05 ^m	-----			*			
14808-79-8	Sulfate	----- ^c	----- ^c	----- ^c	----- ^c	----- ^c	400 ^m	400 ^m			*			
7440-28-0	Thallium	160 ^{b,u}	----- ^c	----- ^c	160 ^{b,u}	----- ^c	0.002 ^m	0.02 ^m			*			
7440-62-2	Vanadium	14,000 ^b	----- ^c	----- ^c	1,400 ^b	----- ^c	0.049 ^m	-----0.1 ^m			*			
7440-66-6	Zinc ¹	610,000 ³	----- ^c	----- ^c	61,000 ^b	----- ^c	5.0 ^m	10 ^m			*			

"*" indicates that the ADL is less than or equal to the specified remediation objective.

NA means Not Available, no PQL or EQL available in USEPA analytical methods.

Chemical Name and Soil Remediation Objective Notations (2nd, 5th thru 8th Columns)

- ^a Soil remediation objectives based on human health criteria only.
- ^b Calculated values correspond to a target hazard quotient of 1.
- ^c No toxicity criteria available for this route of exposure.
- ^d Soil saturation concentration (C_{sat}) = the concentration at which the absorptive limits of the soil particles, the solubility limits of the available soil moisture, and saturation of soil pore air have been reached. Above the soil saturation concentration, the assumptions regarding vapor transport to air and/or dissolved phase transport to groundwater (for chemicals which are liquid at ambient soil temperatures) have been violated, and alternative modeling approaches are required.
- ^e Calculated values correspond to a cancer risk level of 1 in 1,000,000.
- ^f Level is at or below Contract Laboratory Program required quantitation limit for Regular Analytical Services (RAS).
- ^g Chemical-specific properties are such that this route is not of concern at any soil contaminant concentration.
- ^h ~~A preliminary goal of 1 ppm has been set for PCBs based on Guidance on Remedial Actions for Superfund Sites with PCB Contamination, EPA/540-G-90/007, and on USEPA efforts to manage PCB contamination. See 40 CFR 761.120 for USEPA "PCB Spill Cleanup Policy." This regulation goes on to say that the remediation goal for an unrestricted area is 10 ppm and 25 ppm for a restricted area; provided both have at least 10 inches of clean cover. 40 CFR 761 contains applicability requirements and methodologies for the development of PCB remediation objectives. Requests for approval of a Tier 3 evaluation must address the applicability of 40 CFR 761.~~
- ⁱ Soil remediation objective for pH of 6.8. If soil pH is other than 6.8, refer to Appendix B, Tables C and D in this Part.
- ^j Ingestion soil remediation objective adjusted by a factor of 0.5 to account for dermal route.
- ^k A preliminary remediation goal of 400 mg/kg has been set for lead based on *Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities*, OSWER Directive #9355.4-12.
- ^l Potential for soil-plant-human exposure.
- ^m The person conducting the remediation has the option to use: (1) TCLP or SPLP test results to compare with the remediation objectives listed in this Table; or (2) the total amount of contaminant in the soil sample results to compare with pH specific remediation objectives listed in Appendix B, Table C or D of this Part. (See Section 742.510.) If the person conducting the remediation wishes to calculate soil remediation objectives based on background concentrations, this should be done in accordance with Subpart D of this Part.
- ⁿ The Agency reserves the right to evaluate the potential for remaining contaminant concentrations to pose significant threats to crops, livestock, or wildlife.
- ^o For agricultural facilities, remediation objectives for surficial soils which are based on field application rates may be more appropriate for currently registered pesticides. Consult the Agency for further information.
- ^p For agricultural facilities, soil remediation objectives based on site-specific background concentrations of Nitrate as N may be more appropriate. Such determinations shall be conducted in accordance with the ~~leached~~ procedures set forth in Subparts D and I of this Part.
- ^q The TCLP extraction must be done using water at a pH of 7.0.
- ^r Value based on dietary Reference Dose.
- ^s ~~Value based on Reference Dose for Mercuric chloride (CAS No. 7487-94-7). Value for Ingestion based on Reference Dose for Mercuric chloride (CAS No. 7487-94-7). value for Inhalation based on Reference Concentration for elemental Mercury (CAS No. 7439-97-6).~~
- ^t ~~Note that Table value is likely to be less than background concentration for this chemical; screening or remediation concentrations using the procedures of Subpart D of this Part. For the ingestion route for arsenic for industrial/commercial, see 742 Appendix A, Table G.~~
- ^u Value based on Reference Dose for ~~barium~~ sulfate (CAS No. 7446-18-6).
- ~~Calculated values correspond to soil concentrations that should not result in air concentrations that exceed criteria for workplace air.~~

(Source: ~~Amerised in R00-1903~~ at 24 25 III. Reg. ____, effective ____)

Section 742.APPENDIX B: Tier 1 Tables and Illustrations

Section 742. Table C: pH Specific Soil Remediation Objectives for Inorganics and Ionizing Organics for the Soil Component of the Groundwater Ingestion Route (Class I Groundwater)

Chemical (totals) (mg/kg)	pH 4.5 to 4.74	pH 4.75 to 5.24	pH 5.25 to 5.74	pH 5.75 to 6.24	pH 6.25 to 6.64	pH 6.65 to 6.89	pH 5.9 to 7.24	pH 7.25 to 7.74	pH 7.75 to 8.0 8.24	pH 8.25 to 8.74	pH 8.75 to 9.0
Inorganics											
Antimony	5	5	5	5	5	5	5	5	5	5	5
Arsenic	25	26	27	28	29	29	29	30	31	32	33
Barium	260	490	850	1,200	1,500	1,600	1,700	1,800	2,100	^a	ⁱ
Beryllium	1.1	2.1	3.4	6.6	22	63	140	1,000	8,000	^a	ⁱ
Cadmium	1.0	1.7	2.7	3.7	5.2	7.5	11	59	430	^a	ⁱ
Chromium (+6)	70	62	54	46	40	38	36	32	28	24	21
Copper	330	580	2,100	11,000	59,000	130,000	200,000	330,000	330,000	^a	ⁱ
Cyanide	40	40	40	40	40	40	40	40	40	40	40
Mercury	0.01	0.01 ⁱ	0.03	0.15	0.89	2.1	3.3	6.4	8.0	^a	ⁱ
Nickel	20	36	56	76	100	130	180	700	3,800	^a	ⁱ
Selenium	24	17	12	8.8	6.3	5.2	4.5	3.3	2.4	1.8	1.3
Silver	0.24	0.33	0.62	1.5	4.4	8.5	13	39	110	^a	ⁱ

Chemical (totals) (mg/kg)	pH 4.5 to 4.74	pH 4.75 to 5.24	pH 5.25 to 5.74	pH 5.75 to 6.24	pH 6.25 to 6.64	pH 6.65 to 6.89	pH 6.9 to 7.24	pH 7.25 to 7.74	pH 7.75 to 8.0 8.24	pH 8.25 to 8.74	pH 8.75 to 9.0
Thallium	1.6	1.8	2.0	2.4	2.6	2.8	3.0	3.4	3.8	4.4	4.9
Vanadium	980	980	980	980	980	980	980	980	980	980	980
Zinc	1,000	1,800	2,600	3,600	5,100	6,200	7,500	16,000	53,000	a	a
Organics											
Benzoic Acid	440	420	410	400	400	400	400	400	400	400	400
2-Chlorophenol	4.0	4.0	4.0	4.0	3.9	3.9	3.9	3.6	3.1	2.2	1.5
2,4-Dichlorophenol	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.86	0.69	0.56	0.48
Dinoseb	8.4	4.5	1.9	0.82	0.43	0.34	0.31	0.27	0.25	0.25	0.25
Pentachlorophenol	0.54	0.32	0.15	0.07	0.04	0.03	0.02	0.02	0.02	0.02	0.02
2,4,5-TP (Silvex)	26	16	12	11	11	11	11	11	11	11	11
2,4,5-Trichlorophenol	400	390	390	370	320	270	230	130	64	36	26
2,4,6-Trichlorophenol	0.37	0.36	0.34	0.29	0.20	0.15	0.13	0.09	0.07	0.07	0.07

* No data available for this pH range.

(Source: Amended in R-60-19(B) at 24 25 Ill. Reg. _____, effective _____)

Section 742.APPENDIX B

Section 742. Table D: pH Specific Soil Remediation Objectives for Inorganics and Ionizing Organics for the Soil Component of the Groundwater Ingestion Route (Class II Groundwater)

Chemical (totals) (mg/kg)	pH 4.5 to 4.74	pH 4.75 to 5.24	pH 5.25 to 5.74	pH 5.75 to 5.24	pH 6.25 to 6.64	pH 6.65 to 6.89	pH 6.9 to 7.24	pH 7.25 to 7.74	pH 7.75 to 8.0 8.24	pH 8.25 to 8.74	pH 8.75 to 9.0
Inorganics											
Antimony	20	20	20	20	20	20	20	20	20	20	20
Arsenic	100	100	100	110	110	120	120	120	120	130	130
Barium	260	490	850	1,200	1,500	1,600	1,700	1,800	2,100	a	a
Beryllium	140	260	420	820	2,800	7,900	17,000	130,000	1,000,000	a	a
Cadmium	10	17	27	37	52	75	110	590	4,300	a	a
Chromium (+6)	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
Copper	330	580	2,100	11,000	59,000	130,000	200,000	330,000	330,000	a	a
Cyanide	120	120	120	120	120	120	120	120	120	120	120
Mercury	0.05	0.06	0.14	0.75	4.4	10	16	32	40	a	a
Nickel	400	730	1,100	1,500	2,000	2,600	3,500	14,000	76,000	a	a
Selenium	24	17	12	8.8	6.3	5.2	4.5	3.3	2.4	1.8	1.3
Thallium	16	18	20	24	26	28	30	34	38	44	49
Zinc	2,000	3,600	5,200	7,200	10,000	12,000	15,000	32,000	110,000	a	a

Chemical (totals) (mg/kg)	pH 4.5 to 4.74	pH 4.75 to 5.24	pH 5.25 to 5.74	pH 5.75 to 6.24	pH 6.25 to 6.64	pH 6.65 to 6.89	pH 6.9 to 7.24	pH 7.25 to 7.74	pH 7.75 to 8.0 8.24	pH 8.25 to 8.74	pH 8.75 to 9.0
Organics											
Benzoic Acid	440	420	410	400	400	400	400	400	400	400	400
2-Chlorophenol	20	20	20	20	20	20	19	3.6	3.1	2.2	1.5
2,4-Dichlorophenol	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.86	0.69	0.56	0.48
Dinoseb	84	45	19	82	4.3	3.4	3.1	2.7	2.5	2.5	2.5
Pentachlorophenol	2.7	1.6	0.75	0.33	0.18	0.15	0.12	0.11	0.10	0.10	0.10
2,4,5-TP (Silvex)	130	79	62	57	55	55	55	55	55	55	55
2,4,5-Trichlorophenol	2,000	2,000	1,900	1,800	1,600	1,400	1,200	640	64	36	26
2,4,6-Trichlorophenol	1.9	1.8	1.7	1.4	1.0	0.77	0.13	0.09	0.07	0.07	0.07

^a No data available for this pH range.

(Source: Amended ~~in R60-190B~~ at 24 25 Ill. Reg. _____, effective _____)

Section 742.APPENDIX B: Tier 1 Tables and Illustrations

Section 742.TABLE E: Tier 1 Groundwater Remediation Objectives for the Groundwater Component of the Groundwater Ingestion Route

CAS No.	Chemical Name	Groundwater Remediation Objective	
		Class I (mg/L)	Class II (mg/L)
83-32-9	Acenaphthene	0.42	2.1
67-64-1	Acetone	0.7	0.7
15972-60-8	Alachlor	0.002 ^c	0.01 ^c
116-06-3	Aldicarb	0.003 ^c	0.015 ^c
309-00-2	Aldrin	0.000040.014 ^a	0.00020.07
120-12-7	Anthracene	2.1	10.5
1912-24-9	Atrazine	0.003 ^c	0.015 ^c
71-43-2	Benzene	0.005 ^c	0.025 ^c
56-55-3	Benzo(a)anthracene	0.00013 ^a	0.00065
205-99-2	Benzo(b)fluoranthene	0.00018 ^a	0.0009
207-08-9	Benzo(k)fluoranthene	0.00017 ^a	0.00085
50-32-8	Benzo(a)pyrene	0.0002 ^{a,c}	0.002 ^c
111-44-4	Bis(2-chloroethyl)ether	0.01 ^a	0.01
117-81-7	Bis(2-ethylhexyl)phthalate (Di(2-ethylhexyl)phthalate)	0.006 ^{a,c}	0.06 ^c
75-27-4	Bromodichloromethane (Dichlorobromomethane)	0.000020.0002 ^a	0.000020.0002
75-25-2	Bromoform	0.00020.001 ^a	0.00020.001
71-36-3	Butanol	0.7	0.7
85-68-7	Butyl benzyl phthalate	1.4	7.0
86-74-8	Carbazole	---	---
1563-66-2	Carbofuran	0.04 ^c	0.2 ^c
75-15-0	Carbon disulfide	0.7	3.5
56-23-5	Carbon tetrachloride	0.005 ^c	0.025 ^c
57-74-9	Chlordane	0.002 ^c	0.01 ^c

Groundwater Remediation Objective		
CAS No.	Chemical Name	Class I (mg/L) Class II (mg/L)
108-90-7	Chlorobenzene (Monochlorobenzene)	0.1 ^c 0.5 ^c
124-48-1	Chlorodibromomethane (Dibromochloromethane)	0.14 0.14
67-66-3	Chloroform	0.000020.0002 ^a 0.00040.001
218-01-9	Chrysene	0.0015 ^a 0.0075
94-75-7	2,4-D	0.07 ^c 0.35 ^c
75-99-0	Dalapon	0.2 ^c 2.0 ^c
72-54-8	DDD	0.000110.014 ^d 0.000550.07
72-55-9	DDE	0.000040.01 ^a 0.00020.05
50-29-3	DDT	0.000120.006 ^d 0.00060.03
53-70-3	Dibenz(<i>a,h</i>)anthracene	0.0003 ^a 0.0015
96-12-8	1,2-Dibromo-3-chloropropane	0.0002 ^c 0.0002 ^c
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	0.00005 ^{a,c} 0.0005 ^c
84-74-2	Di- <i>n</i> -butyl phthalate	0.7 3.5
95-50-1	1,2-Dichlorobenzene (<i>o</i> - Dichlorobenzene)	0.6 ^c 1.5 ^c
106-46-7	1,4-Dichlorobenzene (<i>p</i> - Dichlorobenzene)	0.075 ^c 0.375 ^c
91-94-1	3,3'-Dichlorobenzidine	0.02 ^a 0.1
75-34-3	1,1-Dichloroethane	0.7 3.5
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	0.005 ^c 0.025 ^c
75-35-4	1,1-Dichloroethylene ^b	0.007 ^c 0.035 ^c
156-59-2	<i>cis</i> -1,2-Dichloroethylene	0.07 ^c 0.2 ^c
156-60-5	<i>trans</i> -1,2-Dichloroethylene	0.1 ^c 0.5 ^c
78-87-5	1,2-Dichloropropane	0.005 ^c 0.025 ^c
542-75-6	1,3-Dichloropropene (1,3-Dichloropropylene, <i>cis</i> + <i>trans</i>)	0.001 ^a 0.005

		Groundwater Remediation Objective	
CAS No.	Chemical Name	Class I (mg/L)	Class II (mg/L)
60-57-1	Dieldrin	0.00020.009 ^a	0.0010.045
84-66-2	Diethyl phthalate	5.6	5.6
121-14-2	2,4-Dinitrotoluene ^a	0.00002 ^a	0.00002
606-20-2	2,6-Dinitrotoluene ^a	0.00010.0003 ^a	0.00010.00031
88-85-7	Dinoseb	0.007 ^c	0.07 ^c
117-84-0	Di-n-octyl phthalate	0.14	0.7
115-29-7	Endosulfan	0.042	0.21
145-73-3	Endosulfan	0.1 ^c	0.1 ^c
72-20-8	Endrin	0.002 ^c	0.01 ^c
100-41-4	Ethylbenzene	0.7 ^c	1.0 ^c
206-44-0	Fluoranthene	0.28	1.4
86-73-7	Fluorene	0.28	1.4
76-44-8	Heptachlor	0.0004 ^c	0.002 ^c
1024-57-3	Heptachlor epoxide	0.0002 ^c	0.001 ^c
118-74-1	Hexachlorobenzene	0.00006 ^a	0.0003
319-84-6	<i>alpha</i> -HCH (<i>alpha</i> -BHC)	0.000030.00011 ^a	0.000150.00055
58-89-9	<i>gamma</i> -HCH (Lindane)	0.0002 ^c	0.001 ^c
77-47-4	Hexachlorocyclopentadiene	0.05 ^c	0.5 ^c
67-72-1	Hexachloroethane	0.007	0.035
193-39-5	Indeno(1,2,3- <i>c,d</i>)pyrene	0.00043 ^a	0.00215
78-59-1	Isophorone	1.4	1.4
72-43-5	Methoxychlor	0.04 ^c	0.2 ^c
74-83-9	Methyl bromide (Bromomethane)	0.0098	0.049
75-09-2	Methylene chloride (Dichloromethane)	0.005 ^c	0.05 ^c
91-20-3	Naphthalene ^a	0.025-0.14	0.0390.22
98-95-3	Nitrobenzene ^{ab}	0.0035	0.0035

Groundwater Remediation Objective		
CAS No.	Chemical Name	Class I (mg/L)
86-30-6	<i>N</i> -Nitrosodiphenylamine	0.040.0032 ^a
621-64-7	<i>N</i> -Nitrosodi- <i>n</i> -propylamine	0.040.0018 ^a
87-86-5	Pentachlorophenol	0.001 ^{a,c}
108-95-2	Phenol	0.1 ^c
1918-02-1	Picloram	0.5 ^c
1336-36-3	Polychlorinated biphenyls (PCBs) ^b	0.0005 ^c
129-00-0	Pyrene	0.21
122-34-9	Simazine	0.004 ^c
100-42-5	Styrene	0.1 ^c
93-72-1	2,4,5-TP (Silvex)	0.05 ^c
127-18-4	Tetrachloroethylene (Perchloroethylene)	0.005 ^c
108-88-3	Toluene	1.0 ^c
8001-35-2	Toxapiene	0.003 ^c
120-82-1	1,2,4-Trichlorobenzene	0.07 ^c
71-55-6	1,1,1-Trichloroethane ^{2b}	0.2 ^c
79-00-5	1,1,2-Trichloroethane	0.005 ^c
79-01-6	Trichloroethylene	0.005 ^c
108-05-4	Vinyl acetate	7.0
75-01-4	Vinyl chloride	0.002 ^c
1330-20-7	Xylenes (total)	10.0 ^c
Ionizable Organics		
65-85-0	Benzoic Acid	28
106-47-8	4-Chloroaniline (<i>p</i> -Chloroaniline)	0.028
95-57-8	2-Chlorophenol	0.035
120-83-2	2,4-Dichlorophenol	0.021

CAS No.		Chemical Name	Groundwater Remediation Objective	
95-95-4		2,4,5-Trichlorophenol	Class I (mg/L)	Class II (mg/L)
			0.7	3.5
88-06-2		2,4,6 Trichlorophenol	0.00640,01 ^a	0.0320,05
		Inorganics		
7440-36-0		Antimony	0.006 ^c	0.024 ^c
7440-38-2		Arsenic	0.05 ^c	0.2 ^c
7440-39-3		Barium	2.0 ^c	2.0 ^c
7440-41-7		Beryllium	0.004 ^c	0.5 ^c
7440-42-8		Boron	2.0 ^c	2.0 ^c
7440-43-9		Cadmium	0.005 ^c	0.05 ^c
16887-00-6		Chloride	200 ^c	200 ^c
7440-47-3		Chromium, total	0.1 ^c	1.0 ^c
18540-29-9		Chromium, ion, hexavalent	---	---
7440-48-4		Cobalt	1.0 ^c	1.0 ^c
7440-50-8		Copper	0.65 ^c	0.65 ^c
57-12-5		Cyanide	0.2 ^c	0.6 ^c
7782-41-4		Fluoride	4.0 ^c	4.0 ^c
15438-31-0		Iron	5.0 ^c	5.0 ^c
7439-92-1		Lead	0.0075 ^c	0.1 ^c
7439-96-5		Manganese	0.15 ^c	10.0 ^c
7439-97-6		Mercury	0.002 ^c	0.01 ^c
7440-02-0		Nickel	0.1 ^c	2.0 ^c
14797-55-8		Nitrate as N	10.0 ^c	100 ^c
7782-49-2		Selenium	0.05 ^c	0.05 ^c
7440-22-4		Silver	0.05 ^c	---
14808-79-8		Sulfate	400 ^c	400 ^c

CAS No.	Chemical Name	Groundwater Remediation Objective	
		Class I (mg/L)	Class II (mg/L)
7440-28-0	Thallium	0.002 ^c	0.02 ^c
7440-62-2	Vanadium ^{2b}	0.049	0.1
7440-66-6	Zinc	5.0 ^c	10 ^c

Chemical Name and Groundwater Remediation Objective Notations

^a ~~The groundwater Health Advisory concentration is equal to ADL for carcinogens.~~ The groundwater remediation objective is equal to the ADL for carcinogens according to the procedures specified in 35 Ill. Adm. Code 620.

^b Oral Reference Dose and/or Reference Concentration under review by USEPA. Listed values subject to change.

^c Value listed is also the Groundwater Quality Standard for this chemical pursuant to 35 Ill. Adm. Code 620.410 for Class I Groundwater or 35 Ill. Adm. Code 620.420 for Class II Groundwater.

(Source: Amended ~~in R04-190B~~ at 24 ~~25~~ Ill. Reg. _____, effective _____)

Section 742.APPENDIX B: Tier 1 Tables and Illustrations

Section 742.TABLE F: Values Used to Calculate the Tier 1 Soil Remediation Objectives for the Soil Component of the Groundwater Ingestion Route

CAS No.	Chemical Name	GW _{obj} Concentration used to Calculate Tier 1 Soil Remediation Objectives ^a	
		Class I (mg/L)	Class II (mg/L)
83-32-9	Acenaphthene	2.0 ^b	10
67-64-1	Acetone	4.0 ^b	4.0
15972-60-8	Alachlor	0.002 ^c	0.01 ^c
116-06-3	Aldicarb	0.003 ^c	0.015 ^c
309-00-2	Aldrin	5.0E-6 ^b	2.5E-5
120-12-7	Anthracene	10 ^b	50
1912-24-9	Atrazine	0.003 ^c	0.015 ^c
71-43-2	Benzene	0.005 ^c	0.025 ^c
56-55-3	Benzo(a)anthracene	0.0001 ^b	0.0005
205-99-2	Benzo(b)fluoranthene	0.0001 ^b	0.0005
207-08-9	Benzo(k)fluoranthene	0.001 ^b	0.005
50-32-8	Benzo(a)pyrene	0.0002 ^{a,c}	0.002 ^c
111-44-4	Bis(2-chloroethyl)ether	8.0E-5 ^b	8.0E-5
117-81-7	Bis(2-ethylhexyl)phthalate [Di(2-ethylhexyl)phthalate	0.006 ^{a,c}	0.06 ^c
75-27-4	Bromodichloromethane (Dichlorobromomethane)	0.1 ^b	0.1
75-25-2	Bromoform	0.1 ^b	0.01
71-36-3	Butanol	4.0 ^b	4.0
85-68-7	Butyl benzyl phthalate	7.0 ^b	35
86-74-8	Carbazole	0.004 ^b	0.02
1563-66-2	Carbofuran	0.04 ^c	0.2 ^c
75-15-0	Carbon disulfide	4.0 ^b	20
56-23-5	Carbon tetrachloride	0.005 ^c	0.025 ^c
57-74-9	Chlordane	0.002 ^c	0.01 ^c

CAS No.		Chemical Name	GW _{obj} Concentration used to Calculate Tier I Soil Remediation Objectives ^a	
			Class I (mg/L)	Class II (mg/L)
108-90-7		Chlorobenzene (Monochlorobenzene)	0.1 ^c	0.5 ^c
124-48-1		Chlorodibromomethane (Dibromochloromethane)	0.06 ^b	0.06
67-66-3		Chloroform	0.1 ^b	0.5
218-01-9		Chrysene	0.1 ^b	0.05
94-75-7		2,4-D	0.07 ^c	0.35 ^c
75-99-0		Dalapon	0.2 ^c	2.0 ^c
72-54-8		DDD	0.0004 ^b	0.002
72-55-9		DDE	0.0003 ^b	0.0015
50-29-3		DDT	0.0003 ^b	0.0015
53-70-3		Dibenzo(a,h)anthracene	1.0E-5 ^b	5.0E-5
96-12-8		1,2-Dibromo-3-chloropropane	0.0002 ^c	0.0002 ^c
106-93-4		1,2-Dibromoethane (Ethylene dibromide)	0.00005 ^{a,c}	0.0005 ^c
84-74-2		Di-n-butyl phthalate	4.0 ^b	20
95-50-1		1,2-Dichlorobenzene (o - Dichlorobenzene)	0.6 ^c	1.5 ^c
106-46-7		1,4-Dichlorobenzene (p - Dichlorobenzene)	0.075 ^c	0.375 ^c
91-94-1		3,3'-Dichlorobenzidine	0.0002 ^b	0.001
75-34-3		1,1-Dichloroethane	4.0 ^b	20
107-06-2		1,2-Dichloroethane (Ethylene dichloride)	0.005 ^c	0.025 ^c
75-35-4		1,1-Dichloroethylene	0.007 ^c	0.035 ^c
156-59-2		cis-1,2-Dichloroethylene	0.07 ^c	0.2 ^c
156-60-5		trans-1,2-Dichloroethylene	0.1 ^c	0.5 ^c
78-97-5		1,2-Dichloropropane	0.005 ^c	0.025 ^c
542-75-6		1,3-Dichloropropene (1,3-Dichloropropylene, cis + trans)	0.0005 ^b	0.0025

CAS No.	Chemical Name	GW _{obj} Concentration used to Calculate Tier I Soil Remediation Objectives ^a	
		Class I (mg/L)	Class II (mg/L)
60-57-1	Dieldrin	5.0E-6 ^b	2.5E-5
84-66-2	Diethyl phthalate	30 ^b	30
121-14-2	2,4-Dinitrotoluene	0.0001 ^b	0.0001
606-20-2	2,6-Dinitrotoluene	0.0001	0.0001
88-85-7	Dinoseb	0.007 ^c	0.07 ^c
117-84-0	Di- <i>n</i> -octyl phthalate	0.7 ^b	3.5
115-29-7	Endosulfan	0.2 ^b	1.0
145-73-3	Endothall	0.1 ^c	0.1 ^c
72-20-8	Endrin	0.002 ^c	0.01 ^c
100-41-4	Ethylbenzene	0.7 ^c	1.0 ^c
206-44-0	Fluoranthene	1.0 ^b	5.0
86-73-7	Fluorene	1.0 ^b	5.0
76-44-8	Heptachlor	0.0004 ^c	0.002 ^c
1024-57-3	Heptachlor epoxide	0.0002 ^c	0.001 ^c
118-74-1	Hexachlorobenzene	0.001 ^b	0.005
319-84-6	<i>alpha</i> -HCH (<i>alpha</i> -BHC)	1.0E-5 ^b	5.0E-5
58-89-9	<i>gamma</i> -HCH (Lindane)	0.0002 ^c	0.001 ^c
77-47-4	Hexachlorocyclopentadiene	0.05 ^c	0.5 ^c
67-72-1	Hexachloroethane	0.007	0.035
193-39-5	Indeno(1,2,3- <i>c,d</i>)pyrene	0.0001 ^b	0.0005
78-59-1	Isophorone	1.4	1.4
72-43-5	Methoxychlor	0.04 ^c	0.2 ^c
74-83-9	Methyl bromide (Bromomethane)	0.05 ^b	0.25
75-09-2	Methylene chloride (Dichloromethane)	0.005 ^c	0.05 ^c
91-20-3	Naphthalene	1.0 ^b 0.14	5.00.22
98-95-3	Nitrobenzene	0.02 ^b	0.02

CAS No.	Chemical Name	GW _{obj} Concentration used to Calculate Tier I Soil Remediation Objectives ^a	
		Class I (mg/L)	Class II (mg/L)
1918-02-1	Picloram	0.5 ^c	5.0 ^c
1336-36-3	Polychlorinated biphenyls (PCBs)	---	---
129-00-0	Pyrene	1.0 ^b	5.0
122-34-9	Simazine	0.004 ^c	0.04 ^c
100-42-5	Styrene	0.1 ^c	0.5 ^c
93-72-1	2,4,5-TP (Silvex)	0.05 ^c	0.25 ^c
127-18-4	Tetrachloroethylene (Perchloroethylene)	0.005 ^c	0.025 ^c
108-88-3	Toluene	1.0 ^c	2.5 ^c
8001-35-2	Toxaphene	0.003 ^c	0.015 ^c
120-82-1	1,2,4-Trichlorobenzene	0.07 ^c	0.7 ^c
71-55-6	1,1,1-Trichloroethane ²	0.2 ^c	1.0 ^c
79-00-5	1,1,2-Trichloroethane	0.005 ^c	0.05 ^c
79-01-6	Trichloroethylene	0.005 ^c	0.025 ^c
108-05-4	Vinyl acetate	40 ^b	40
75-01-4	Vinyl chloride	0.002 ^c	0.01 ^c
1330-20-7	Xylenes (total)	10.0 ^c	10.0 ^c
	Ionizable Organics		
65-85-0	Benzoic Acid	100 ^b	100
106-47-8	4-Chloroaniline (<i>p</i> -Chloroaniline)	0.1 ^b	0.1
95-57-8	2-Chlorophenol	0.2 ^b	1.0
120-83-2	2,4-Dichlorophenol	0.1 ^b	0.1
105-67-9	2,4-Dimethylphenol	0.7 ^b	0.7
51-28-5	2,4-Dinitrophenol	0.04 ^b	0.04 ^c
95-48-7	2-Methylphenol (<i>o</i> -Cresol)	2.0 ^b	2.0
86-30-6	<i>N</i> -Nitrosodiphenylamine	0.02 ^b	0.1

CAS No.	Chemical Name	GW _{obj} Concentration used to Calculate Tier 1 Soil Remediation Objectives ^a	
		Class I (mg/L)	Class II (mg/L)
621-64-7	<i>N</i> -Nitrosodi- <i>n</i> -propylamine	1.0E-5 ^b	1.0E-5
87-86-5	Pentachlorophenol	0.001 ^{a,c}	0.005 ^c
108-95-2	Phenol	0.1 ^c	0.1 ^c
95-95-4	2,4,5-Trichlorophenol	4.0 ^b	20
88-06-2	2,4,6-Trichlorophenol	0.008 ^b	0.04
	Inorganics		
7440-36-0	Antimony	0.006 ^c	0.024 ^c
7440-38-2	Arsenic	0.05 ^c	0.2 ^c
7440-39-3	Barium	2.0 ^c	2.0 ^c
7440-41-7	Beryllium	0.004 ^c	0.5 ^c
7440-42-8	Boron	2.0 ^c	2.0 ^c
7440-43-9	Cadmium	0.005 ^c	0.05 ^c
16887-00-6	Chloride	200 ^c	200 ^c
7440-47-3	Chromium, total	0.1 ^c	1.0 ^c
18540-29-9	Chromium, ion, hexavalent	---	---
7440-48-4	Cobalt	1.0 ^c	1.0 ^c
7440-50-8	Copper	0.65 ^c	0.65 ^c
57-12-5	Cyanide	0.2 ^c	0.6 ^c
7782-41-4	Fluoride	4.0 ^c	4.0 ^c
15438-31-0	Iron	5.0 ^c	5.0 ^c
7439-92-1	Lead	0.0075 ^c	0.1 ^c
7439-96-5	Manganese	0.15 ^c	10.0 ^c
7439-97-6	Mercury	0.002 ^c	0.01 ^c
7440-02-0	Nickel	0.1 ^c	2.0 ^c
14797-55-8	Nitrate as N	10.0 ^c	100 ^c
7782-49-2	Selenium	0.05 ^c	0.05 ^c
7440-22-4	Silver	0.05 ^c	---
14808-79-8	Sulfate	400 ^c	400 ^c

CAS No.	Chemical Name	GW _{obj} Concentration used to Calculate Tier I Soil Remediation Objectives ^a	
		Class I (mg/L)	Class II (mg/L)
7440-28-0	Thallium	0.002 ^c	0.02 ^c
7440-62-2	Vanadium	0.049	0.1
7440-66-6	Zinc	5.0 ^c	10 ^c

Chemical Name and Groundwater Remediation Objective Notations

^a The Equation S17 is used to calculate the Soil Remediation Objective for the Soil Component of the Groundwater Ingestion Route; this equation requires calculation of the Target Soil Leachate Concentration (C_w) from Equation S18: C_w = DF x GW_{obj}.

^b Value listed is the Water Health Based Limit (HBL) for this chemical from Soil Screening Guidance: User's Guide, incorporated by reference at Section 742.210 for carcinogens. The HBL is equal to the non-zero MCLG (if available); the MCL (if available); or, for carcinogens, a cancer risk of 1.0E-6, and for noncarcinogens is equal to a Hazard Quotient of 1.0.

NOTE: These GW_{obj} concentrations are not equal to the Tier I Groundwater Remediation Objectives for the Direct Ingestion of Groundwater Component of the Groundwater Ingestion Route, listed in Section 742. Appendix B, Table E.

^c Value listed is also the Groundwater Quality Standard for this chemical pursuant to 35 Ill. Adm. Code 620.410 for Class I Groundwater or 35 Ill. Adm. Code 620.420 for Class II Groundwater.

(Source: Amended in R00-19(B) at 24 25 Ill. Reg. ____, effective ____)

Section 742. APPENDIX C: Tier 2 Tables and Illustrations

Section 742. Table A: SSL Equations

Equations for Soil Ingestion Exposure Route	Remediation Objectives for Noncarcinogenic Contaminants (mg/kg)	$\frac{THQ \cdot BW \cdot AT \cdot 365 \frac{d}{yr}}{\frac{1}{RfD_o} \cdot 10^{-6} \frac{kg}{mg} \cdot EF \cdot ED \cdot IR_{soil}}$	S1
	Remediation Objectives for Carcinogenic Contaminants - Residential (mg/kg)	$\frac{TR \cdot AT_c \cdot 365 \frac{d}{yr}}{SF_o \cdot 10^{-6} \frac{kg}{mg} \cdot EF \cdot IF_{soil-adj}}$	S2
	Remediation Objectives for Carcinogenic Contaminants - Industrial/Commercial, Construction Worker (mg/kg)	$\frac{TR \cdot BW \cdot AT_c \cdot 365 \frac{d}{yr}}{SF_o \cdot 10^{-6} \frac{kg}{mg} \cdot EF \cdot ED \cdot IR_{soil}}$	S3
Equations for Inhalation Exposure Route (Volatile Organic Contaminants and Mercury)	Remediation Objectives for Noncarcinogenic Contaminants - Residential, Industrial/Commercial (mg/kg)	$\frac{THQ \cdot AT \cdot 365 \frac{d}{yr}}{EF \cdot ED \cdot \left(\frac{1}{RfC} \cdot \frac{1}{VF} \right)}$	S4

Remediation Objectives for Noncarcinogenic Contaminants - Construction Worker (mg/kg)	$\frac{THQ \bullet AT \bullet 365 \frac{d}{yr}}{EF \bullet ED \bullet \left(\frac{1}{RfC} \bullet \frac{1}{VF'} \right)}$	S5
Remediation Objectives for Carcinogenic Contaminants - Residential, Industrial/ Commercial (mg/kg)	$\frac{TR \bullet AT_c \bullet 365 \frac{d}{yr}}{URF \bullet 1,000 \frac{ug}{mg} \bullet EF \bullet ED \bullet \frac{1}{VF}}$	S6
Remediation Objectives for Carcinogenic Contaminants - Construction Worker (mg/kg)	$\frac{TR \bullet AT_c \bullet 365 \frac{d}{yr}}{URF \bullet 1,000 \frac{ug}{mg} \bullet EF \bullet ED \bullet \frac{1}{VF'}}$	S7
Equation for Derivation of the Volatilization Factor - Residential, Industrial/ Commercial, VF (m ³ /kg)	$VF = \frac{Q}{C} \bullet \frac{(3.14 \bullet D_A \bullet T)^{1/2}}{(2 \bullet \rho_b \bullet D_A)} \bullet 10^{-4} \frac{m^2}{cm^2}$	S8
Equation for Derivation of the Volatilization Factor - Construction Worker, VF' (m ³ /kg)	$VF' = \frac{VF}{10}$	S9
Equation for Derivation of Apparent Diffusivity, D _A (cm ² /s)	$D_A = \frac{(\theta_a^{3.33} \bullet D_i \bullet H') + (\theta_w^{3.33} \bullet D_w)}{\eta^2} \bullet \frac{1}{(\rho_b \bullet K_d) + \theta_w + (\theta_a \bullet H')}$	S10

Equations for Inhalation Exposure Route (Fugitive Dusts)	Remediation Objectives for Noncarcinogenic Contaminants - Residential, Industrial/Commercial (mg/kg)	$\frac{THQ \bullet AT \bullet 365 \frac{d}{yr}}{EF \bullet ED \bullet \left(\frac{1}{RfC} \bullet \frac{1}{PEF} \right)}$	S11
	Remediation Objectives for Noncarcinogenic Contaminants - Construction Worker (mg/kg)	$\frac{THQ \bullet AT \bullet 365 \frac{d}{yr}}{EF \bullet ED \bullet \left(\frac{1}{RfC} \bullet \frac{1}{PEF'} \right)}$	S12
	Remediation Objectives for Carcinogenic Contaminants - Residential, Industrial/Commercial (mg/kg)	$\frac{TR \bullet AT_c \bullet 365 \frac{d}{yr}}{URF \bullet 1,000 \frac{ug}{mg} \bullet EF \bullet ED \bullet \frac{1}{PEF}}$	S13
	Remediation Objectives for Carcinogenic Contaminants - Construction Worker (mg/kg)	$\frac{TR \bullet AT_c \bullet 365 \frac{d}{yr}}{URF \bullet 1,000 \frac{ug}{mg} \bullet EF \bullet ED \bullet \frac{1}{PEF'}}$	S14
	Equation for Derivation of Particulate Emission Factor, PEF (m ³ /kg)	$PEF = \frac{Q}{C} \bullet \frac{3,600 \frac{s}{hr}}{0.036 \bullet (1 - V) \bullet \left(\frac{U_m}{U_t} \right)^3 \bullet F(x)}$	S15

Equations for the Soil Component of the Groundwater Ingestion Exposure Route	Equation for Derivation of Particulate Emission Factor, PEF' - Construction Worker (m ³ /kg)	$PEF' = \frac{PEF}{10}$ NOTE: PEF must be the industrial/commercial value	S16
	Remediation Objective (mg/kg)	$C_w \bullet \left[K_d + \frac{(\theta_w + \theta_a \bullet H')}{\rho_b} \right]$ NOTE: This equation can only be used to model contaminant migration not in the water bearing unit.	S17
	Target Soil Leachate Concentration, C _w (mg/L)	$C_w = \frac{DF \bullet GW_{obj}}{}$	S18
	Soil-Water Partition Coefficient, K _d (cm ³ /g)	$K_d = K_{oc} \bullet f_{oc}$	S19
	Water-Filled Soil Porosity, θ _w (L _{water} /L _{soil})	$\theta_w = \eta \bullet \left(\frac{I}{K_s} \right)^{1/(2b+3)}$	S20
	Air-Filled Soil Porosity, θ _a (L _{air} /L _{soil})	$\theta_a = \eta - \theta_w$	S21
	Dilution Factor, DF (unitless)	$DF = 1 + \frac{K \bullet i \bullet d}{I \bullet L}$	S22

Mass-Limit Equations for Inhalation [Exposure Route and Soil Component of the Groundwater Ingestion Exposure Route]	Groundwater Remediation Objective for Carcinogenic Contaminants, CW_{ng} (mg/L)	$\frac{TR \bullet BW \bullet AT \bullet 365}{SF_g \bullet IR_g \bullet EF \bullet ED} d$	S23
	Total Soil Porosity, η (kg/m^3)	$\eta = 1 - \frac{\rho_b}{\rho_s}$	S24
	Equation for Estimation of Mixing Zone Depth, d (m)	$d = \left(0.0112 \bullet L^2 \right)^{0.5} + d_n \left[1 - \exp \left(\frac{(-L \bullet t)}{K \bullet t \bullet d_n} \right) \right]$	S25
	Mass-Limit Volatilization Factor for the Inhalation Exposure Route - Residential, Industrial/Commercial, VF (m^3/kg)	NOTE: This equation may be used when area and depth of contaminant source are vertical thickness of contamination is known or can be estimated reliably. $VF_{M-L} = \frac{Q}{C} \bullet \left[\frac{T_{M-L} \bullet \left(3.15 \bullet 10^7 \frac{s}{yr} \right)}{\rho_b \bullet d_s \bullet 10^6 \frac{g}{cm^3} \bullet 10^3 \frac{m^3}{m^3}} \right]$	S26
	Mass-Limit Volatilization Factor for Inhalation Exposure Route - Construction Worker, VF - (m^3/kg)	$VF_{M-L} = \frac{VF_{M-L}}{10}$	S27

Mass-Limit Remediation Objective for Soil Component of the Groundwater Ingestion Exposure Route (mg/kg)	$\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{\rho_l \bullet d_s}$ NOTE: This equation may be used when area and depth of contaminant source and vertical thickness is known or can be estimated reliably.	S28
Equation for Derivation of the Soil Saturation Limit, C_{sat}	$C_{sat} = \frac{S}{\rho_b} \bullet [(K_d \bullet \rho_b) + \theta_w + (H' \bullet \theta_w)]$	S29

(Source: Amended ~~40 CFR 199.10~~ 40 CFR 199.10, 24.25 Ill. Reg. _____, effective _____)

Section 742.APPENDIX C: Tier 2 Tables and Illustrations

Section 742.Table B: SSL Parameters

Symbol	Parameter	Units	Source	Parameter Value(s)
AT	Averaging Time for Noncarcinogens in Ingestion Equation	yr		Residential= 6 Industrial/Commercial = 25 Construction Worker = 0.1:5
AT	Averaging Time for Noncarcinogens in Inhalation Equation	yr		Residential= 30 Industrial/Commercial = 25 Construction Worker = 0.1:5
AT _c	Averaging Time for Carcinogens	yr	SSL	70
BW	Body Weight	kg		Residential= 15, noncarcinogens 70, carcinogens Industrial/Commercial = 70 Construction Worker = 70
C _{soil}	Soil Saturation Concentration	mg/kg	Appendix A, Table A or Equation S29 in Appendix C, Table A	Chemical-specific or Calculated Value
C _w	Target Soil Leachate Concentration	mg/l	Equation S18 in Appendix C, Table A	Groundwater Standard, Health Advisory concentration, or Calculated Value
d	Mixing Zone Depth	m	SSL or Equation S25 in Appendix C, Table A	2 m or Calculated Value
d _a	Aquifer Thickness	m	Field Measurement	Site-Specific

Symbol	Parameter	Units	Source	Parameter Value(s)
d_s	Depth of Source (vertical thickness of contamination)	m	Field Measurement or Estimation	Site-Specific
D_A	Apparent Diffusivity	cm^2/s	Equation S10 in Appendix C, Table A	Calculated Value
D_i	Diffusivity in Air	cm^2/s	Appendix C, Table E	Chemical-specific
D_w	Diffusivity in Water	cm^2/s	Appendix C, Table E	Chemical-specific
DF	Dilution Factor	unitless	Equation S22 in Appendix C, Table A	20 or Calculated Value
ED	Exposure Duration for Ingestion of Carcinogens	yr		Industrial/Commercial = 25 Construction Worker = 1
ED	Exposure Duration for Inhalation of Carcinogens	yr		Residential = 30 Industrial/Commercial = 25 Construction Worker = 1
ED	Exposure Duration for Ingestion of Noncarcinogens	yr		Residential = 6 Industrial/Commercial = 25 Construction Worker = 1
ED	Exposure Duration for Inhalation of Noncarcinogens	yr		Residential = 30 Industrial/Commercial = 25 Construction Worker = 1
ED	Exposure Duration for the Direct Ingestion of Groundwater	yr		Residential = 30 Industrial/Commercial = 25 Construction Worker = 1

Symbol	Parameter	Units	Source	Parameter Value(s)
t/D_{ML}	Exposure Duration for Migration to Groundwater Mass-Limit Equation S28	yr	SSL	70
PF	Exposure Frequency	d/yr		Residential = 350 Industrial/Commercial = 250 Construction Worker = 30
$R(x)$	Function dependent on U_{σ}/U_i	unitless	SSL	0.194
f_{oc}	Organic Carbon Content of Soil	g/g	SSL or Field Measurement (See Appendix C, Table F)	Surface Soil = 0.006 Subsurface soil = 0.002, or Site-Specific
GW_{adj}	Groundwater Remediation Remediation Objective	mg/L	Appendix B, Table F, 35-AC 620 Subpart F, or Equation S23 in Appendix C, Table A	Chemical-Specific or Calculated
H'	Henry's Law Constant	unitless	Appendix C, Table F	Chemical-Specific
I	Hydraulic Gradient	m/m	Field Measurement (See Appendix C, Table F)	Site-Specific
I	Infiltration Rate	m/yr	SSL	0.3
I_{ML}	Infiltration Rate for Migration to Groundwater Mass-Limit Equation S28	m/yr	SSL	0.18

Symbol	Parameter	Units	Source	Parameter Value(s)
$IF_{\text{soil+di}}$ (residential)	Age Adjusted Soil Ingestion Factor for Carcinogens	$(\text{mg-yr})/(\text{kg-l})$	SSL	114
IR_{soil}	Soil Ingestion Rate	mg/d		Residential = 200 Industrial/Commercial = 50 Construction Worker = 480
IR_{sw}	Daily Water Ingestion Rate	L/d		Residential = 2 Industrial/Commercial = 1
K	Aquifer Hydraulic Conductivity	m/yr	Field Measurement (See Appendix C, Table F)	Site-Specific
K_d (Non-ionizing organics)	Soil-Water Partition Coefficient	cm^3/g or L/kg	Equation S19 in Appendix C, Table A	Calculated Value
K_d (Ionizing organics)	Soil-Water Partition Coefficient	cm^3/g or L/kg	Equation S19 in Appendix C, Table A	Chemical and pH-Specific (see Appendix C, Table I)
K_d (Inorganic)	Soil-Water Partition Coefficient	cm^3/g or L/kg	Appendix C, Table J	Chemical and pH-Specific
K_{oc}	Organic Carbon Partition Coefficient	cm^3/g or L/kg	Appendix C, Table E or Appendix C, Table J	Chemical-specific
K_s	Saturated Hydraulic Conductivity	m/yr	Appendix C, Table K Appendix C, Illustration C	Site-Specific
L	Source Length Parallel to Groundwater Flow	m	Field Measurement	Site-Specific
PEP	Particulate Emission Factor	m^3/kg	SSL or Equation S15 in Appendix C, Table A	Residential = $1.32 \cdot 10^9$ or Site-Specific Industrial/Commercial = $1.24 \cdot 10^9$ or Site-Specific
PEP'	Particulate Emission Factor adjusted for agitation (construction worker)	m^3/kg	Equation S16 in Appendix C, Table A using PEP (industrial/construction)	$1.24 \cdot 10^9$ or Site-Specific

Symbol	Parameter	Units	Source	Parameter Value(s)
Q/C (used in VI equations)	Inverse of the mean concentration at the center of a square source	$(\text{m}^2 \cdot \text{s})/(\text{kg} \cdot \text{m}^3)$	Appendix C, Table H	Residential = 68.81 Industrial/Commercial = 85.81 Construction Worker = 85.81
Q/C (used in PF equations)	Inverse of the mean concentration at the center of a square source	$(\text{g} \cdot \text{m}^2 \cdot \text{s})/(\text{kg} \cdot \text{m}^3)$	SSL or Appendix C, Table H	Residential = 90.80 Industrial/Commercial = 85.81 Construction Worker = 85.81
RIC	Inhalation Reference Concentration	mg/m^3	IEPA (IRIS/HEAST [®])	Toxicological-Specific (Note: for Construction Workers use subchronic reference concentrations)
RID _c	Oral Reference Dose	$\text{mg}/(\text{kg} \cdot \text{d})$	IEPA (IRIS/HEAST [®])	Toxicological-Specific (Note: for Construction Workers use subchronic reference doses)
S	Solubility in Water	mg/L	Appendix C, Table E	Chemical-Specific
SK ₀	Oral Slope Factor	$(\text{mg} \cdot \text{kg} \cdot \text{d})^{-1}$	IEPA (IRIS/HEAST [®])	Toxicological-Specific
T	Exposure Interval	s		Residential = 9.5×10^8 Industrial/Commercial = 7.9×10^8 Construction Worker = 3.6×10^8
T _{W-L}	Exposure Interval for Mass-Limit Volatilization Factor Equation S26	yr	SSL	30
THQ	Target Hazard Quotient	unitless	SSL	1

Symbol	Parameter	Units	Source	Parameter Value(s)
TR	Target Cancer Risk	unitless		Residential $\cdot 10^{-6}$ at the point of human exposure Industrial/Commercial $\cdot 10^{-6}$ at the point of human exposure Construction Worker $\cdot 10^{-4}$ at the point of human exposure
U_m	Mean Annual Windspeed	m/s	SSL	4.69
URE	Inhalation Unit Risk Factor	$(\mu\text{g}/\text{m}^3)^{-1}$	EPA (RISHT,AST)	Toxicological-Specific
U_1	Equivalent Threshold Value of Windspeed at 7 m	m/s	SSL	11.32
V	Proportion of Vegetative Cover	unitless	SSL or Field Measurement	0.5 or Site-Specific
VF	Volatilization Factor	m^3/kg	Equation S8 in Appendix C, Table A	Calculated Value
VF _a	Volatilization Factor adjusted for Agitation	m^3/kg	Equation S9 in Appendix C, Table A	Calculated Value
VF _{ML}	Mass-Limit Volatilization Factor	m^3/kg	Equation S26 in Appendix C, Table A	Calculated Value
VF _{MLA}	Mass-Limit Volatilization Factor adjusted for Agitation	m^3/kg	Equation S27 in Appendix C, Table A	Calculated Value

Symbol	Parameter	Units	Source	Parameter Value(s)
e	Total Soil Porosity	$L_{\text{pore}}/L_{\text{soil}}$	SSL or Equation S24 in Appendix C, Table A	0.43, or Gravel = 0.15 Sand = 0.32 Silt = 0.40 Clay = 0.36, or Calculated Value
e_g	Air-Filled Soil Porosity	$L_{\text{air}}/L_{\text{soil}}$	SSL or Equation S21 in Appendix C, Table A	Surface Soil (top 1 meter) = 0.28 Subsurface Soil (below 1 meter) = 0.13, or Gravel = 0.05 Sand = 0.14 Silt = 0.24 Clay = 0.19, or Calculated Value
e_w	Water-Filled Soil Porosity	$L_{\text{water}}/L_{\text{soil}}$	SSL or Equation S20 in Appendix C, Table A	Surface Soil (top 1 meter) = 0.15 Subsurface Soil (below 1 meter) = 0.30, or Gravel = 0.20 Sand = 0.18 Silt = 0.16 Clay = 0.17, or Calculated Value

Symbol	Parameter	Units	Source	Parameter Value(s)
ρ_b	Dry Soil Bulk Density	kg/L or g/cm ³	SSL or Field Measurement (See Appendix C, Table F)	1.5, or Gravel = 2.0 Sand = 1.8 Silt = 1.6 Clay = 1.7, or Site-Specific
ρ_s	Soil Particle Density	g/cm ³	SSL or Field Measurement (See Appendix C, Table F)	2.65, or Site-Specific
ρ_w	Water Density	g/cm ³	SSL	1
$1/(2b+3)$	Exponential in Equation S20	unitless	Appendix C, Table K Appendix C, Illustration C	Site-Specific

a. REOs 1 – Health Effects Assessment Summary Tables. USEPA, Office of Solid Waste and Emergency Response. EPA/504/R-96/016. Updated Quarterly.

(Source: Amended ~~REOs 1~~ at 24.25 T1, Reg ~~111~~, effective _____)

Section 742. Appendix C: Tier 2 Tables and Illustrations

Section 742. Table C: RBCA Equations

Equations for the combined exposures routes of soil ingestion, inhalation of vapors and particulates, and dermal contact with soil	Remediation Objectives for Carcinogenic Contaminants (mg/kg)	$EF \cdot ED \cdot \left[SV_o \cdot 10^{-6} \frac{\text{kg}}{\text{mg}} \cdot \left((IR_{\text{soil}} \cdot RAF_o) + (SA \cdot M \cdot RAF_d) \right) \right] + \left[SI_i \cdot IR_{\text{air}} \cdot (VF_{\text{ss}} + VF_p) \right]$ $TR \cdot BW \cdot AT_C \cdot 365 \frac{\text{d}}{\text{yr}}$	R1
Remediation Objectives for Non-carcinogenic Contaminants (mg/kg)	Remediation Objectives for Non-carcinogenic Contaminants (mg/kg)	$EF \cdot ED \cdot \left[10^{-6} \frac{\text{kg}}{\text{mg}} \cdot \left((IR_{\text{soil}} \cdot RAF_o) + (SA \cdot M \cdot RAF_d) \right) \right] + \frac{IR_{\text{air}} \cdot (VF_{\text{ss}} + VF_p)}{RfD_o}$ $THQ \cdot BW \cdot AT_n \cdot 365 \frac{\text{d}}{\text{yr}}$	R2
Volatilization Factor for Surface Soils, VF_{ss} Whichever is less between R3 and R4	Volatilization Factor for Surface Soils, VF_{ss} (kg/m^3)	$VF_{\text{ss}} = \frac{2 \cdot W \cdot \rho_s \cdot 10^3 \frac{\text{cm}^3 \cdot \text{kg}}{\text{m}^3 \cdot \text{g}}}{U_{\text{air}} \cdot \delta_{\text{air}}} \cdot \left[\frac{D_n^{\text{eff}} \cdot II'}{\pi \cdot [\theta_{\text{ns}} + (k_s \cdot \rho_s) + (II' \cdot \theta_{\text{ss}})] \cdot t} \right]$	R3
		$VF_{\text{ss}} = \frac{W \cdot \rho_s \cdot d \cdot 10^3 \frac{\text{cm}^3 \cdot \text{kg}}{\text{m}^3 \cdot \text{g}}}{U_{\text{air}} \cdot \delta_{\text{air}} \cdot t}$	R4

Volatilization Factor for Surface Soils Regarding Particulates, VF_F (kg·m ⁻¹)	$VF_F = \frac{P_s \cdot W \cdot 10^3 \frac{\text{cm}^3 \cdot \text{kg}}{\text{m}^3 \cdot \text{g}}}{U_{air} \cdot \delta_{air}}$	R5
Effective Diffusion Coefficient in Soil Based on Vapor-Phase Concentration $D_{s,eff}$ (cm ² /s)	$D_{s,eff} = \frac{D_{air} \cdot \theta_{air}^{2.33}}{\theta_T^2} + \frac{D_{water} \cdot \theta_{w,3.33}}{H' \cdot \theta_T^2}$	R6
Remediation Objectives for Carcinogenic Contaminants (mg/kg)	$\frac{RBSL_{air} \cdot 10^3}{VF_{soil}}$	R7
Remediation Objectives for Non-carcinogenic Contaminants (mg/kg)	$\frac{RBSL_{air} \cdot 10^3}{VF_{soil}}$	R8

Equations for the
ambient vapor
inhalation
(outdoor) route
from surface
soils

Carcinogenic Risk-Based Screening Level for Air, $RBSL_{air}$ ($\mu\text{g}/\text{m}^3$)	$RBSL_{air} = \frac{TR \bullet BW \bullet A''_c \bullet 365 \frac{d}{yr} \bullet 10^3 \frac{\mu\text{g}}{\text{mg}}}{SF_1 \bullet R_{air} \bullet EF \bullet ED}$	R9
Noncarcinogenic Risk-Based Screening Level for Air, RSL_{air} ($\mu\text{g}/\text{m}^3$)	$RBSL_{air} = \frac{THQ \bullet RfD_i \bullet BW \bullet A''_n \bullet 365 \frac{d}{yr} \bullet 10^3 \frac{\mu\text{g}}{\text{mg}}}{HR_{air} \bullet Hf \bullet ED}$	R10
Volatilization Factor - Subsurface Soil to Ambient Air, VF_{sub} (mg/m^3)($\text{mg}/\text{kg}_{soil}$)	$VF_{sub} = \frac{H' \bullet \rho_s \bullet 10^3 \frac{\text{cm}^3}{\text{m}^3} \cdot \text{kg}}{[\theta_{ws} + (k_s \bullet \rho_s) + (H' \bullet q_{at})] \left[1 + \frac{(U_{air} \bullet \delta_{air} \bullet L_s)}{(L_s^{eff} \bullet W)} \right]}$	R11

Equations for the Soil Component of the Groundwater Ingestion Exposure Route	Remediation Objective (mg/kg)	$\frac{GW_{source}}{LF_{soil}}$ NOTE: This equation can only be used to model contaminant migration not in the water bearing unit.	R12
	Groundwater at the source: GW_{source} (mg/l)	$GW_{source} = \frac{GW_{comp}}{C_0/C_{source}}$	R13
	Leaching Factor, LF_{sw} (mg/L _{water})/(mg/kg _{soil})	$LF_{sw} = \frac{\rho_s \cdot \frac{C_0^3 \cdot K_d}{L \cdot g}}{\left[\theta_{ws} + (k_s \cdot \rho_s) + (H' \cdot \theta_{ws}) \right] \cdot \left[1 + \frac{(U_{gw} \cdot \delta_{gw})}{(I \cdot W)} \right]}$	R14
	Steady-State Attenuation Along the Centerline of a Dissolved Plume, C_0/C_{source}	$C_0/C_{source} = \exp \left(\frac{X}{2\alpha_s} \right) \cdot \left(1 - \sqrt{1 - \frac{4\lambda \cdot \alpha_s}{U}} \right) \cdot \operatorname{erf} \left[\frac{S_v}{4 \cdot \sqrt{\alpha_s \cdot X}} \right] \cdot \operatorname{erf} \left[\frac{S_d}{2 \cdot \sqrt{\alpha_s \cdot X}} \right]$ NOTE: 1. This equation does not predict the contaminant flow width in bedrock and may not accurately predict downgradient concentrations in the presence of a confining layer. 2. If the value of the First Order Degradation Constant (λ) is not readily available, then set $\lambda = 0$.	R15
	Longitudinal Dispersivity, α_s (cm)	$\alpha_s = 0.10 \cdot X$	R16

Transverse Dispersion, α_y (cm)	$\alpha_y = \frac{\alpha_x}{2}$	R17
Vertical Dispersion, α_z (cm)	$\alpha_z = \frac{\alpha_x}{20}$	R18
Specific Discharge, U (cm/d)	$U = \frac{K \cdot I}{\theta_i}$	R19
Soil-Water Sorption Coefficient, k_s	$k_s = K_{oc} \cdot f_{oc}$	R20
Volumetric Air Content in Vadose Zone Soils, θ_a (cm ³ air/cm ³ soil)	$\theta_a = \theta_T - \frac{(w \cdot \rho_s)}{\rho_w}$	R21
Volumetric Water Content in Vadose Zone Soils, θ_w (cm ³ water/cm ³ soil)	$\theta_w = \frac{w \cdot \rho_s}{f_w}$	R22
Total Soil Porosity, θ_T (cm ³ /cm ³ soil)	$\theta_T = \theta_{gr} + \theta_{mic}$	R23

	Groundwater Darcy Velocity, U_{gw} (cm/yr)	$U_{gw} = K \cdot i$	R24
Equations for the Groundwater Ingestion Exposure Route	Remediation Objective for Carcinogenic Contaminants (mg/L)	$\frac{TR \cdot BW \cdot AT_c \cdot 365 \frac{d}{yr}}{SF_o \cdot IR_o \cdot EF \cdot ED}$	R25
	Dissolved Hydrocarbon Concentration along Centerline, C_{dx} (g/cm ³ mg/L water)	$C_{(x)} = C_{source} \cdot \exp \left[\left(\frac{X}{2\alpha_x} \right) \cdot \left(1 - \sqrt{1 + \frac{4\lambda \cdot \alpha_x}{U}} \right) \right] \cdot \exp \left[\frac{S_{1w}}{4 \cdot \sqrt{\alpha_y \cdot X}} \right] \cdot \exp \left[\frac{S_d}{2 \cdot \sqrt{\alpha_z \cdot X}} \right]$ NOTE: 1. This equation does not predict the contaminant flow within bedrock and may not accurately predict downgradient concentrations in the presence of a confining layer. 2. If the value of the First Order Degradation Coefficient (λ) is not readily available, then set $\lambda = 0$.	R26

(Source: Amended ~~6000000000~~ at 24.25 III Reg. , effective)

Section 742 APPENDIX C: Tier 2 Tables and Illustrations

Section 742 Table D: RBCA Parameters

Symbol	Parameter	Units	Source	Parameter Value(s)
AT_c	Averaging Time for Carcinogens	yr	RBCA	70
AT_n	Averaging Time for Noncarcinogens	yr	RBCA	Residential = 30 Industrial/Commercial = 25 Construction Worker = 0.115
BW	Adult Body Weight	kg	RBCA	70
C_{source}	The greatest potential concentration of the contaminant of concern in the groundwater, based on the concentrations of contaminants in groundwater due to the release and the projected concentration of the contaminant migrating from the soil to the groundwater.	mg/L	Field Measurements	Site-Specific
C_{60}	Concentration of Contaminant in Groundwater at Distance X from the source	mg/L	Equation E2.6 in Appendix C, Table C	Calculated Value

Symbol	Parameter	Units	Source	Parameter Value(s)
C_{eq}/C_{max}	Steady-State Attenuation Along the Centerline of a Dissolved Plume	unitless	Equation E15 in Appendix D, Table C	Calculated Value
d	Lower Depth of Surficial Soil Zone	cm	Field Measurement	100 or Site-Specific (not to exceed 100)
D^a	Diffusion Coefficient in Air	cm^2/s	Appendix D, Table E	Chemical-Specific
D^{water}	Diffusion Coefficient in Water	cm^2/s	Appendix D, Table E	Chemical-Specific
D_p^{eff}	Effective Diffusion Coefficient in Soil Based on Vapor-Phase Concentration	cm^2/s	Equation E6 in Appendix D, Table C	Calculated Value
ED	Exposure Duration	yr	RUCIA	Residential = 30 Industrial/Commercial = 25 Construction Worker = 1
EF	Exposure Frequency	d/yr	RUCIA	Residential = 350 Industrial/Commercial = 250 Construction Worker = 30
erf	Error Function	unitless	Appendix D, Table G	Mathematical Function

Symbol	Parameter	Units	Source	Parameter Value(s)
f_{oc}	Organic Carbon Content of Soil	g/g	RBCA or Field Measurement (See Appendix C, Table F)	Surface Soil = 0.006 Subsurface Soil = 0.002 or Site-Specific
GW_{comp}	Groundwater Objective at the Compliance Point	mg/L	Appendix B, Table E, 35 LAC 630 Subpart F, or Equation R25 in Appendix C, Table C	Site-Specific
GW_{source}	Groundwater Concentration at the Source	mg/L	Equation R13 in Appendix C, Table C	Calculated Value
H'	Henry's Law Constant	$\text{cm}^3 \text{air}/\text{cm}^3 \text{air}$	Appendix C, Table E	Chemical-Specific
I	Hydraulic Gradient	cm/cm (unitless)	Field Measurement (See Appendix C, Table F)	Site-Specific
I	Infiltration Rate	cm/yr	RBCA	30
IR_{air}	Daily Outdoor Inhalation Rate	m^3/d	RBCA	20
IR_{soil}	Soil Ingestion Rate	mg/d	RBCA	Residential = 100 Industrial/Commercial = 50 Construction Worker = 480
IR_{sw}	Daily Water Ingestion Rate	L/d	RBCA	Residential = 2 Industrial/Commercial = 1

Symbol	Parameter	Units	Source	Parameter Value(s)
K	Aquifer Hydraulic Conductivity	cm/d for Equations R15, R19 and R26 cm/yr for Equation R24	Field Measurement (See Appendix C, Table F)	Site-Specific
K_{oc}	Organic Carbon Partition Coefficient	cm ³ /g or L/kg	Appendix C, Table E or Appendix C, Table I	Chemical-Specific
k_s (non-ionizing organics)	Soil Water Sorption Coefficient	cm ³ water/g soil	Equation R20 in Appendix C, Table C	Calculated Value
k_s (ionizing organics)	Soil Water Sorption Coefficient	cm ³ water/g soil	Equation R20 in Appendix C, Table C	Chemical and pH-Specific (See Appendix C, Table J)
k_s (inorganic)	Soil Water Sorption Coefficient	cm ³ water/g soil	Appendix C, Table J	Chemical and pH-Specific
L_s	Depth to Subsurface Soil Sources	cm	RBCA	100
L/F_{sw}	Leaching Factor	(mg/L _{water}) / (mg/kg _{soil})	Equation R14 in Appendix C, Table C	Calculated Value
M	Soil to Skin Adherence Factor	mg/cm ²	RBCA	0.5

Synbol	Parameter	Units	Source	Parameter Value(s)
Pe	Particulate Emission Rate	$g/cm^2 \cdot s$	RBCA	6.9×10^{-4}
RAF_d	Dermal Relative Absorption Factor	unitless	RBCA	0.5
RAF_d (TNAs)	Dermal Relative Absorption Factor	unitless	RBCA	0.05
RAF_d (inorganics)	Dermal Relative Absorption Factor	unitless	RBCA	0
RAF_o	Oral Relative Absorption Factor	unitless	RBCA	1.0
$RUSL_{car}$	Carcinogenic Risk-Based Screening Level for Air	ug/m^3	Equation B9 in Appendix C, Table C	Chemical-, Media-, and Exposure Route-Specific
$RUSL_{ncr}$	Noncarcinogenic Risk-Based Screening Level for Air	ug/m^3	Equations R10 in Appendix C, Table C	Chemical-, Media-, and Exposure Route-Specific
RD_i	Inhalation Reference Dose	$mg/kg \cdot d$	IEPA (IRIS/IEAST TM)	Toxicological-Specific
RD_o	Oral Reference Dose	$mg/(kg \cdot d)$	IEPA (IRIS/IEAST TM)	Toxicological-Specific (Note: for Construction Worker use subchronic reference doses)
SA	Skin Surface Area	cm^2/d	RBCA	3,160

Symbol	Parameter	Units	Source	Parameter Value(s)
S_d	Source Width Perpendicular to Groundwater Flow Direction in Vertical Plane	cm	Field Measurement	For Migration to Groundwater Route: Use 200 or Site-Specific For Groundwater remediation objective: Use Site-Specific
S_w	Source Width Perpendicular to Groundwater Flow Direction in Horizontal Plane	cm	Field Measurement	Site-Specific
SF_i	Inhalation Cancer Slope Factor	(mg/kg-d) ⁻¹	IEPA (IRIS/HEAST ³)	Toxicological-Specific
SF_o	Oral Slope Factor	(mg/kg-d) ⁻¹	IEPA (IRIS/HEAST ³)	Toxicological-Specific
THQ	Target Hazard Quotient	unitless	RBCA	1
FR	Target Cancer Risk	unitless	RBCA	Residential = 10^{-6} at the point of human exposure Industrial/Commercial = 10^{-5} at the point of human exposure Construction Worker = 10^{-4} at the point of human exposure
U	Specific Discharge	cm/d	Equation R19 in Appendix C, Table C	Calculated Value

Symbol	Parameter	Units	Source	Parameter Value(s)
U_{air}	Average Wind Speed Above Ground Surface in Ambient Mixing Zone	cm/s	RBCA	225
U_{gw}	Groundwater Darcy Velocity	cm/yr	Equation R24 in Appendix C, Table C	Calculated Value
VF_{so}	Volatilization Factor for Surficial Soils Regarding Particulates	kg/m ³	Equation R3 in Appendix C, Table C	Calculated Value
VF_{subso}	Volatilization Factor (Subsurface Soils to Ambient Air)	(mg/m ³ ·m)/(mg/kg·m) or kg/m ³	Equation R11 in Appendix C, Table C	Calculated Value
VF_{sa}	Volatilization Factor for Surficial Soils	kg/m ³	Use Equations R3 and R4 in Appendix C, Table C	Calculated Value from Equation R3 or R4 (whichever is less)
W	Width of Source Area Parallel to Direction to Wind or Groundwater Movement	cm	Field Measurement	Site-Specific

Symbol	Parameter	Units	Source	Parameter Value(s)
w	Average Soil Moisture Content	$\text{g}_{\text{water}}/\text{g}_{\text{soil}}$	RBCA or Field Measurement (See Appendix C, Table F)	0.1, or Surface Soil (top 1 meter) = 0.1 Subsurface Soil (below 1 meter) = 0.2, or Site-Specific
X	Distance along the Centerline of the Groundwater Plume Emanating from a Source. The x direction is the direction of groundwater flow	cm	Field Measurement	Site-Specific
α_x	Longitudinal Dispersivity	cm	Equation R16 in Appendix C, Table C	Calculated Value
α_y	Transverse Dispersivity	cm	Equation R17 in Appendix C, Table C	Calculated Value
α_z	Vertical Dispersivity	cm	Equation R18 in Appendix C, Table C	Calculated Value
δ_{Li}	Ambient Air Mixing Zone Height	cm	RBCA	200

Symbol	Parameter	Units	Source	Parameter Value(s)
δ_{gw}	Groundwater Mixing Zone Thickness	cm	RBCA	200
θ_{zs}	Volumetric Air Content in Vadose Zone Soils	$\text{cm}^3 \text{ air} / \text{cm}^3 \text{ soil}$	RBCA or Equation E21 in Appendix C, Table C	Surface Soil (top 1 meter) = 0.28 Subsurface Soil (below 1 meter) = 0.13, Or Gravel = 0.05 Sand = 0.14 Silt = 0.16 Clay = 0.17, or Calculated Value
θ_{ws}	Volumetric Water Content in Vadose Zone Soils	$\text{cm}^3 \text{ water} / \text{cm}^3 \text{ soil}$	RBCA or Equation E22 in Appendix C, Table C	Surface Soil (top 1 meter) = 0.15 Subsurface Soil (below 1 meter) = 0.30, or Gravel = 0.20 Sand = 0.18 Silt = 0.16 Clay = 0.17, or Calculated Value

Symbol	Parameter	Units	Source	Parameter Value(s)
θ_t	Total Soil Porosity	$\text{cm}^3/\text{cm}^3_{\text{soil}}$	RBCA or Equation R23 in Appendix C, Table C	0.43, or Gravel = 0.25 Sand = 0.32 Silt = 0.40 Clay = 0.36, or Calculated Value
λ	First Order Degradation Constant	d^{-1}	Appendix C, Table E	Chemical-Specific
n	n			3.14/6
ρ_s	Soil Bulk Density	g/cm^3	RBCA or Field Measurement (See Appendix C, Table F)	1.5, or Gravel = 2.0 Sand = 1.8 Silt = 1.6 Clay = 1.7, or Site-Specific
ρ_w	Water Density	g/cm^3	RBCA	1
τ	Averaging Time for Vapor Flux	s	RBCA	9.46×10^5

^a HFAST - Health Effects Assessment Summary Tables. USEPA, Office of Solid Waste and Emergency Response. EPA/540/R-93/036. Updated Quarterly.

(Source: Appendix B, Table B-1, at 24-25 (11 Reg. _____, effective _____))

Section 742 APPENDIX C: Tier 2 Tables and Illustrations

Section 742 Table E: Default Physical and Chemical Parameters

CAS No.	Chemical	Solubility in Water (S) (mg/L)	Diffusivity in Air (D _A) (cm ² /s)	Diffusivity in Water (D _w) (cm ² /s)	Dimensionless Henry's Law Constant (H) (25°C)	Organic Carbon Partition Coefficient (K _{oc}) (L/kg)	First Order Degradation Constant (k _d) (d ⁻¹)
Neutral Organics							
83-32-9	Acenaphthene	4.24	0.0421	7.69E-6	0.00636	7,080	0.0034
67-64-1	Acetone	1,000,000	0.124	1.14E-5	0.00159	0.575	0.0495
15972-60-8	Alachlor	242	0.0198	5.69E-6	0.00000132	304	No Data
116-06-3	Aldicarb	6,000	0.0305	7.19E-6	0.0000000074	12	0.00109
309-00-2	Aldrin	0.18	0.0132	4.86E-6	0.00697	2,450,000	0.00039
120-12-7	Anthracene	0.0454	0.0124	7.74E-6	0.00267	29,500	0.00075
1912-24-9	Atrazine	70	0.0258	6.69E-6	0.00000001	451	No Data
71-43-2	Benzene	1,750	0.088	9.80E-6	0.228	58.9	0.0009

CAS No.	Chemical	Solubility in Water (S) (mg/L)	Diffusivity in Air (D _A) (cm ² /s)	Diffusivity in Water (D _w) (cm ² /s)	Dimensionless Henry's Law Constant (H') (25°C)	Organic Carbon Partition Coefficient (K _{oc}) (L/kg)	First Order Degradation Constant (λ) (d ⁻¹)
56-55-3	Benzofluoranthene	0.0094	0.0510	9.00E-6	0.000137	398,000	0.00051
205-99-2	Benzo(b)fluoranthene	0.0015	0.0226	5.56E-6	0.00035	1,230,000	0.00057
207-08-9	Benzok(k)fluoranthene	0.0008	0.0226	5.56E-6	0.000034	1,230,000	0.00016
65-85-0	Benzoic Acid	3,500	0.0536	7.97E-6	0.0000631	0.600	No Data
50-32-8	Benzo(a)pyrene	0.00162	0.043	9.00E-6	0.0000463	1,020,000	0.00065
111-44-4	Bis(2-chloroethyl)ether	17,200	0.0592	7.53E-6	0.000738	15.5	0.0019
117-81-7	Bis(2-ethylhexyl)phthalate	0.34	0.0351	3.66E-6	0.00000411	15,100,000	0.0018
75-27-4	Bromodichloromethane	6,740	0.0298	1.06E-5	0.0656	55.0	No Data
75-25-2	Bromoform	3,100	0.0149	1.03E-5	0.0219	87.1	0.0019
71-36-3	Butanol	74,000	0.0800	9.30E-6	0.000361	6.92	0.01283
85-68-7	Buryl Benzyl Phthalate	2.69	0.0174	4.83E-6	0.0000517	57,500	0.00385
86-74-8	Carbazole	7.48	0.0390	7.03E-6	0.00000666	3,390	No Data

CAS No	Chemical	Solubility in Water (S) (mg/L)	Diffusivity in Air (D _A) (cm ² /s)	Diffusivity in Water (D _w) (cm ² /s)	Dimensionless Henry's Law Constant (H) (25°C)	Organic Carbon Partition Coefficient (K _{oc}) (L/kg)	First Order Degradation Constant (k _d) (d ⁻¹)
1563-66-2	Carbofuran	320	0.0249	6.63E-6	.00377	37	No Data
75-15-0	Carbon Disulfide	1,190	0.104	1.00E-5	1.24	43.7	No Data
56-23-5	Carbon Tetrachloride	793	0.0780	8.80E-6	1.23	174	0.0019
57-74-9	Chlordane	0.056	0.0118	4.37E-6	0.00199	120,000	0.00025
106-47-8	p-Chloroaniline	5,300	0.0483	1.41E-5	0.0000136	66.1	No Data
108-09-7	Chlorobenzene	472	0.0730	8.70E-6	0.152	219	0.0023
124-48-1	Chlorodibromomethane	2,600	0.0196	1.05E-5	0.0321	63.1	0.00385
67-66-3	Chloroform	7,920	0.104	1.00E-5	0.15	39.8	0.00039
95-57-8	2-Chlorophenol	22,000	0.0501	9.46E-6	0.016	388	No Data
218-01-9	Chrysene	0.0016	0.0248	6.21E-6	0.00388	398,000	0.00035
94-75-7	2,4-D	680	0.0231	7.31E-6	0.00000041	451	0.00385
72-54-8	o,p'-DDE	0.09	0.9169	4.76E-6	0.000164	1,000,000	0.000062

CAS No.	Chemical	Solubility in Water (S) (mg/L)	Diffusivity in Air (D _A) (cm ² /s)	Diffusivity in Water (D _w) (cm ² /s)	Dimensionless Henry's Law Constant (H') (25°C)	Organic Carbon Partition Coefficient (K _{oc}) (L/kg)	First Order Degradation Constant (k _d) (d ⁻¹)
72-55-9	4,4'-DDT	0.12	0.0144	5.87E-6	0.000861	4,476,000	0.000062
50-29-3	4,4'-DDE	0.025	0.0137	4.95E-6	0.000332	2,630,000	0.000062
75-99-0	Dalapon	900,000	0.0414	9.46E-6	0.0000026	5.8	0.005775
53-70-3	Dibenzol(h)anthracene	0.00249	0.0202	5.18E-6	0.000000603	3,800,000	0.00037
96-12-8	1,2-Dibromo-3-chloropropane	1,200	0.0212	7.02E-6	0.00615	182	0.001025
106-93-4	1,2-Dichloroethane	4,200	0.0287	8.06E-6	0.0303	93	0.005775
84-74-2	Dibutyl Phthalate	112	0.0438	7.86E-6	0.000000085	33,900	0.00013
95-50-1	1,2-Dichlorobenzene	156	0.0690	7.90E-6	0.0779	617	0.0019
106-46-7	1,4-Dichlorobenzene	73.8	0.0690	7.90E-6	0.0996	617	0.0019
91-94-1	3,3'-Dichlorobenzidine	3.11	0.0194	6.74E-6	0.000000164	724	0.0019

CAS No.	Chemical	Solubility in Water (S) (mg/L)	Diffusivity in Air (D _a) (cm ² /s)	Diffusivity in Water (D _w) (cm ² /s)	Dimensionless Henry's Law Constant (H') (25°C)	Organic Carbon Partition Coefficient (K _{oc}) (L/kg)	First Order Degradation Constant (k _d) (d ⁻¹)
75-34-3	1,1-Dichloroethane	5,060	0.0742	1.05E-5	0.23	31.6	0.0019
107-06-2	1,2-Dichloroethane	8,520	0.104	9.90E-6	0.0401	17.4	0.0019
75-35-4	1,1-Dichloroethylene	2,250	0.0900	1.01E-5	1.07	58.9	0.0053
156-59-2	cis-1,2-Dichloroethylene	3,500	0.0736	1.13E-5	0.167	35.5	0.00024
156-60-5	trans-1,2-Dichloroethylene	6,300	0.0707	1.19E-5	0.385	52.5	0.00024
120-83-2	2,4-Dichlorophenol	4,500	0.0346	8.77E-6	0.00013	147	0.00027
78-87-5	1,2-Dichloropropane	2,800	0.0782	8.73E-6	0.115	43.7	0.00027
542-75-6	1,3-Dichloropropylene (cis + trans)	2,800	0.0636	1.00E-5	0.726	45.7	0.061
60-57-1	Dieldrin	0.195	0.0125	4.74E-6	0.000619	21,400	0.00032
84-66-2	Diethyl Phthalate	1,080	0.0256	6.35E-6	0.000185	288	0.00019
105-67-9	2,4-Dimethylphenol	7,870	0.0584	8.69E-6	0.000082	209	0.0495
51-28-5	2,4-Dinitrophenol	2,790	0.0273	9.06E-6	0.000182	0.01	0.00132

CAS No.	Chemical	Solubility in Water (S) (mg/L)	Diffusivity in Air (D _A) (cm ² /s)	Diffusivity in Water (D _w) (cm ² /s)	Dimensionless Henry's Law Constant (H') (25°C)	Organic Carbon Partition Coefficient (K _{OC}) (L/kg)	First Order Degradation Constant (λ) (d ⁻¹)
121-14-2	2,4-Dinitrotoluene	270	0.203	7.06E-6	0.0000038	95.5	0.00192
606-20-2	2,6-Dinitrotoluene	182	0.0327	7.26E-6	0.0000306	69.2	0.00192
88-85-7	Dioxin	52	0.0215	6.62E-6	0.0000189	1,120	0.002817
117-84-0	Di-n-octyl Phthalate	0.02	0.0151	3.58E-6	0.00274	80,200,000	0.0019
115-29-7	Endosulfan	0.51	0.0115	4.55E-6	0.000459	2,140	0.07629
145-73-3	Endothal	21,000	0.0291	8.07E-6	0.000000007	0.29	No Data
72-20-8	Endrin	0.25	0.0125	4.74E-6	0.000308	12,300	0.00032
100-41-4	Ethylbenzene	169	0.0750	7.80E-6	0.323	363	0.003
206-44-0	Fluoranthene	0.206	0.0302	6.35E-6	0.00066	107,000	0.00019
86-73-7	Fluorene	1.93	0.0363	7.88E-6	0.00261	13,800	0.000691
76-11-8	Heptachlor	0.18	0.012	5.69E-6	0.7	1,410,000	0.13
1024-57-3	Heptachlor epoxide	0.2	0.0132	4.23E-6	0.00039	83,200	0.00063

CAS No.	Chemical	Solubility in Water (S) (mg/L)	Diffusivity in Air (D _A) (cm ² /s)	Diffusivity in Water (D _w) (cm ² /s)	Dimensionless Henry's Law Constant (H') (25°C)	Organic Carbon Partition Coefficient (K _{oc}) (L/kg)	First Order Degradation Constant (λ) (d ⁻¹)
118-74-1	Hexachlorobenzene	6.2	0.0342	5.91E-6	0.9541	55,000	0.00017
319-84-6	alpha-HCH (alpha-BHC)	2.0	0.0142	7.34E-6	0.000435	1,230	0.0025
58-89-9	gamma-HCH (Lindane)	6.8	0.0142	7.34E-6	0.000574	1,070	0.0029
77-47-4	Hexachlorocyclopentadiene	1.8	0.0161	7.21E-6	1.11	200,000	0.012
67-72-1	Hexachloroethene	50	0.0025	6.80E-6	0.159	1,780	0.00192
193-39-5	Indeno(1,2,3-c,d)pyrene	0.000022	0.0190	5.66E-6	0.0000656	5,470,000	0.00047
78-59-1	Isophorone	12,000	0.0623	6.76E-6	0.000272	46.8	0.01238
7439-97-6	Mercury	—	0.0307	6.30E-6	0.467	---	No Data
77-43-5	Methoxyflor	0.045	0.0156	4.46E-6	0.000648	97,700	0.0019
74-83-9	Methyl Bromide	15,200	0.0728	1.21E-5	0.256	10.5	0.01824
75-09-2	Methylene Chloride	13,000	0.101	1.17E-5	0.0898	11.7	0.012
95-48-7	2-Methylphenol	26,000	0.0740	8.30E-6	0.000492	91.2	0.0495

CAS No.	Chemical	Solubility in Water (S) (µg/L)	Diffusivity in Air (D _A) (cm ² /s)	Diffusivity in Water (D _w) (cm ² /s)	Dimensionless Henry's Law Constant (J ¹) (25°C)	Organic Carbon Partition Coefficient (K _{oc}) (L/kg)	First Order Degradation Constant (λ) (d ⁻¹)
91-20-3	Naphthalene	31.0	0.0550	7.50E-6	0.0158	2,000	0.0027
98-05-3	Nitrobenzene	2,090	0.0760	8.60E-6	0.000984	64.6	0.00176
86-30-6	N-Nitrosodiphenylamine	35.1	0.0312	6.35E-6	0.000205	1,290	0.01
621-64-7	N-Nitrosodi-n-propylamine	9,890	0.0545	8.17E-6	0.0009923	24.0	0.0019
87-86-5	Perfluorophenol	1,950	0.0360	6.10E-6	0.000001	592	0.00045
108-95-2	Phenol	82,800	0.0820	9.10E-6	0.0000163	28.8	0.099
1918-02-1	Picloram	430	0.0255	5.28E-6	0.0000000166	1.98	No Data
1336-36-3	Polychlorinated biphenyls (PCBs)	0.7	----- ^a	----- ^b	----- ^a	309,000	No Data
129-00-0	Pyrene	0.135	0.0272	7.24E-6	0.000451	105,000	0.00018
122-34-9	Simazine	5	0.027	7.36E-6	0.0000000133	133	No Data
100-42-5	Styrene	310	0.0710	8.00E-6	0.113	776	0.0033
93-72-1	2,4,5-TP (Silvex)	31	0.0194	5.83E-6	0.000000032	5,440	No Data

CAS No.	Chemical	Solubility in Water (S) (mg/l)	Diffusivity in Air (D _a) (cm ² /s)	Diffusivity in Water (D _w) (cm ² /s)	Dimensionless Henry's Law Constant (H) (25°C)	Organic Carbon Partition Coefficient (K _{oc}) (L/kg)	First Order Degradation Constant (λ) (d ⁻¹)
127-18-4	Tetrachloroethylene	200	0.0720	8.20E-6	0.734	155	0.00096
108-88-3	Toluene	526	0.0870	8.60E-6	0.272	182	0.011
8001-35-2	Toxaphene	0.74	0.0116	4.34E-6	0.000246	257,000	No Data
120-82-1	1,2,4-Trichlorobenzene	300	0.0360	8.23E-6	0.0582	1,780	0.0019
71-55-6	1,1,1-Trichloroethane	1,330	0.0780	8.80E-6	0.705	110	0.0013
79-00-5	1,1,2-Trichloroethane	4,420	0.0780	8.80E-6	0.0174	50.1	0.00095
79-01-6	Trichloroethylene	1,100	0.0790	9.10E-6	0.422	166	0.00042
95-95-4	2,4,5-Trichlorophenol	1,200	0.0291	7.03E-6	0.000178	1,600	0.00038
88-06-2	2,4,6-Trichlorophenol	800	0.0118	6.25E-6	0.000319	381	0.00038
108-05-4	Vinyl Acetate	20,000	0.0850	9.20E-6	0.021	5.25	No Data
57-01-4	Vinyl Chloride	2,760	0.106	1.23E-6	1.11	18.6	0.00024
108-38-3	m-Xylene	161	0.070	7.83E-6	0.301	497	0.0019

CAS No.	Chemical	Solubility in Water (S) (mg/L)	Diffusivity in Air (D _A) (cm ² /s)	Diffusivity in Water (D _w) (cm ² /s)	Dimensionless Henry's Law Constant (H') (25°C)	Organic Carbon Partition Coefficient (K _{oc}) (L/kg)	First Order Degradation Constant (λ) (d ⁻¹)
95-47-6	o-Xylene	178	0.087	1.00E-5	0.213	463	0.0019
106-42-3	p-Xylene	185	0.0769	8.44E-6	0.314	389	0.0019
1338-20-7	Xylenes (total)	186	0.0720	9.34E-6	0.25	260	0.0019

Chemical Abstracts Service (CAS) registry number. This number is the format xxx-xx-x, is unique for each chemical and allows efficient searching on computerized data bases.

*Soil Remediation objectives are determined pursuant to 40 CFR 761.44 as incorporated by reference at Section 7.2.104 (the US EPA "PCB Spill Cleanup Policy"); for most sites, persons remediating sites should consult with BDL if calculation of Tier 2 soil remediation objectives is desired.

(Source: Amended ~~XXXXXX~~ at 24.25 Ill. Reg. . . , effective _____)

Section 742-APPENDIX C: Fig. 2 Tables and Illustrations

Section 742-TABLE I: K_{ac} Values for Ionizing Organics as a Function of pH (cm^3/g or L/kg or $\text{cm}^3/\text{water}/\text{g}_{\text{solid}}/\text{cm}^3_{\text{water}}/\text{g}_{\text{solid}}$)

pH	Benzoic Acid	2-Chloro-phenol	2,4-Dichloro-phenol	Pentachloro-phenol	2,4,6-Trichloro-phenol	2,4,6-Trichloro-phenol	2,3,5-TP (Silvex)
4.5	1.07E+01	3.98E+02	1.59E+02	1.34E+01	2.37E+03	1.06E+03	1.28E+04
4.6	9.16E+00	3.98E+02	1.59E+02	1.24E+01	2.37E+03	1.05E+03	1.13E+04
4.7	7.79E+00	3.98E+02	1.59E+02	1.13E+01	2.37E+03	1.05E+03	1.01E+04
4.8	6.58E+00	3.98E+02	1.59E+02	1.02E+01	2.37E+03	1.05E+03	9.16E+03
4.9	5.54E+00	3.98E+02	1.59E+02	9.05E+00	2.37E+03	1.04E+03	8.40E+03
5.0	4.64E+00	3.98E+02	1.59E+02	7.96E+00	2.36E+03	1.03E+03	7.76E+03
5.1	3.88E+00	3.98E+02	1.59E+02	6.93E+00	2.36E+03	1.02E+03	7.30E+03
5.2	3.25E+00	3.98E+02	1.59E+02	5.97E+00	2.35E+03	1.01E+03	6.91E+03
5.3	2.72E+00	3.98E+02	1.59E+02	5.10E+00	2.34E+03	9.99E+02	6.60E+03
5.4	2.29E+00	3.98E+02	1.58E+02	4.32E+00	2.33E+03	9.82E+02	6.36E+03
5.5	1.94E+00	3.97E+02	1.58E+02	3.65E+00	2.32E+03	9.62E+02	6.16E+03
5.6	1.65E+00	3.97E+02	1.58E+02	3.07E+00	2.31E+03	9.38E+02	6.00E+03
5.7	1.42E+00	3.97E+02	1.58E+02	2.58E+00	2.29E+03	9.10E+02	5.88E+03
5.8	1.24E+00	3.97E+02	1.58E+02	2.18E+00	2.27E+03	8.77E+02	5.78E+03
5.9	1.09E+00	3.97E+02	1.57E+02	1.84E+00	2.24E+03	8.39E+02	5.70E+03

pH	Benzoic Acid	2-Chloro-phenol	2,4-Dichloro-phenol	Pentachloro-phenol	2,4,6-Trichloro-phenol	2,4,6-Trichloro-phenol	Dicoseb	2,3,5-TP (Silver)
6.0	9.69E-01	3.96E+02	1.57E+02	1.56E+01	2.21E+03	7.96E-02	2.84E+03	5.64E+03
6.1	8.75E-01	2.96E+02	1.57E+02	1.33E+01	2.17E+03	7.48E-02	2.43E+03	5.59E+03
6.2	7.99E-01	3.96E+02	1.56E+02	1.15E+01	2.12E+03	6.97E+02	2.19E+03	5.55E+03
6.3	7.36E-01	3.95E+02	1.55E+02	9.98E+01	2.06E+03	6.44E+02	1.83E+03	5.52E+03
6.4	6.89E-01	3.94E+02	1.54E+02	8.77E+01	1.99E+03	5.89E-02	1.62E+03	5.50E+03
6.5	6.51E-01	3.93E+02	1.53E+02	7.81E+01	1.92E+03	5.33E-02	1.45E+03	5.48E+03
6.6	6.20E-01	3.92E+02	1.52E+02	7.03E+01	1.82E+03	4.80E+02	1.32E+03	5.46E+03
6.7	5.95E-01	3.90E+02	1.50E+02	6.40E+01	1.71E+03	4.29E+02	1.21E+03	5.45E+03
6.8	5.76E-01	3.88E+02	1.47E+02	5.92E+01	1.60E+03	3.81E+02	1.12E+03	5.44E+03
6.9	5.60E-01	3.86E+02	1.45E+02	5.52E+01	1.47E+03	3.38E+02	1.05E+03	5.43E+03
7.0	5.47E-01	3.83E+02	1.41E+02	5.21E+01	1.34E+03	3.00E+02	9.96E+02	5.43E+03
7.1	5.38E-01	3.79E+02	1.38E+02	4.96E+01	1.21E+03	2.67E+02	9.52E+02	5.42E+03
7.2	5.32E-01	3.75E+02	1.33E+02	4.76E+01	1.07E+03	2.39E+02	9.18E-02	5.42E+03
7.3	5.25E-01	3.69E+02	1.28E+02	4.61E+01	9.43E+02	2.15E+02	8.90E-02	5.42E+03
7.4	5.19E-01	3.62E+02	1.21E+02	4.47E+01	8.19E+02	1.95E+02	8.68E-02	5.41E+03
7.5	5.16E-01	3.54E+02	1.14E+02	4.17E+01	7.03E+02	1.78E+02	8.50E-02	5.41E+03
7.6	5.13E-01	3.44E+02	1.07E+02	4.29E+01	5.99E+02	1.64E+02	8.36E-02	5.41E+03

pH	Benzoic Acid	2-Chloro-phenol	2,4-Dichloro-phenol	Pentachloro-phenol	2,4,5-Trichloro-phenol	2,4,6-Trichloro-phenol	Dinoseb	2,3,5-TP (Silver)
7.7	5.09E-01	3.33E+02	9.84E-01	4.23E+02	5.07E+02	1.53E+02	8.25E+02	5.41E+03
7.8	5.08E-01	3.19E+02	8.97E-01	4.18E+02	4.36E+02	1.44E+02	8.17E+02	5.41E+03
7.9	5.06E-01	3.04E+02	8.07E-01	4.14E+02	3.57E+02	1.37E+02	8.10E+02	5.41E+03
8.0	5.06E-01	2.86E+02	7.17E-01	4.10E+02	2.98E+02	1.31E+02	8.04E+02	5.41E+03

(Source: Amended ~~1000000000~~ at 24 25 III. Reg. , effective)

pH	As	Ba	Be	Cd	Cr(+3)	Cr(+6)	Hg	Ni	Ag	Se	Ti	Zn
6.7	2.9E+01	4.0E+01	5.5E+02	6.4E+01	1.5E+06	1.9E+01	4.0E+01	5.8E+01	6.6E+00	5.3E+00	6.5E+01	5.8E+01
6.8	2.9E+01	4.1E+01	7.9E+02	7.5E+01	1.8E+06	1.9E+01	5.2E+01	6.5E+01	8.3E+00	5.0E+00	7.1E+01	6.2E+01
6.9	2.9E+01	4.2E+01	1.1E+03	9.1E+01	2.1E+06	1.8E+01	6.6E+01	7.4E+01	1.0E+01	4.7E+00	7.3E+01	6.8E+01
7.0	2.9E+01	4.2E+01	1.7E+03	1.1E+02	2.5E+06	1.8E+01	8.2E+01	8.8E+01	1.3E+01	4.3E+00	7.4E+01	7.5E+01
7.1	2.9E+01	4.3E+01	2.5E+03	1.5E+02	2.8E+06	1.7E+01	9.9E+01	1.7E+02	1.6E+01	4.1E+00	7.7E+01	8.3E+01
7.2	3.0E+01	4.4E+01	3.8E+03	2.0E+02	3.1E+06	1.7E+01	1.2E+02	1.4E+02	2.0E+01	3.8E+00	7.8E+01	9.5E+01
7.3	3.0E+01	4.4E+01	5.7E+03	2.8E+02	3.4E+06	1.6E+01	1.3E+02	1.8E+02	2.5E+01	3.5E+00	8.0E+01	1.1E+02
7.4	3.0E+01	4.5E+01	8.6E+03	4.0E+02	3.7E+06	1.6E+01	1.5E+02	2.5E+02	3.1E+01	3.3E+00	8.2E+01	1.3E+02
7.5	3.0E+01	4.6E+01	1.3E+04	5.9E+02	3.9E+06	1.6E+01	1.6E+02	3.5E+02	3.9E+01	3.1E+00	8.5E+01	1.6E+02
7.6	3.1E+01	4.6E+01	2.0E+04	8.7E+02	4.1E+06	1.5E+01	1.7E+02	4.9E+02	4.8E+01	2.9E+00	8.7E+01	1.9E+02
7.7	3.1E+01	4.7E+01	3.0E+04	1.3E+03	4.2E+06	1.5E+01	1.8E+02	7.0E+02	5.9E+01	2.7E+00	8.9E+01	2.4E+02
7.8	3.1E+01	4.9E+01	4.6E+04	1.9E+03	4.3E+06	1.4E+01	1.9E+02	9.9E+02	7.3E+01	2.5E+00	9.1E+01	3.1E+02
7.9	3.1E+01	5.0E+01	6.9E+04	2.9E+03	4.3E+06	1.4E+01	1.9E+02	1.4E+03	8.9E+01	2.4E+00	9.4E+01	4.0E+02
8.0	3.1E+01	5.2E+01	1.0E+05	4.3E+03	4.3E+06	1.4E+01	2.0E+02	1.9E+03	1.1E+02	2.2E+00	9.6E+01	5.3E+02

(Source: Amended ~~Table 1~~ at 24 25 III. Reg. effective _____)

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, do hereby certify that the above opinion and order was adopted on the _____ day of _____ 2001 by a vote of _____.

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board