

ILLINOIS POLLUTION CONTROL BOARD  
December 6, 2001

IN THE MATTER OF: )  
)  
PROPOSED AMENDMENTS TO TIERED ) R00-19(C)  
APPROACH TO CORRECTIVE ACTION ) (Rulemaking – Land)  
OBJECTIVES (TACO) (MTBE): 35 ILL. )  
ADM. CODE 742 )

Proposed Rule. Second Notice.

OPINION AND ORDER OF THE BOARD (by C.A. Manning, N.J. Melas, R.C. Flemal):

On May 15, 2000, the Illinois Environmental Protection Agency (Agency) filed a proposal to amend 35 Ill. Adm. Code 742 of the Board's land regulations, commonly referred to as the Tiered Approach to Corrective Action Objectives (TACO) rules. The Board accepted this matter for hearing on May 18, 2000. On July 27, 2000, the Board moved the Agency's proposed rulemaking to first notice. In doing so, the Board divided the proposal into two subdockets, A and B.<sup>1</sup> The cleanup standards for methyl tertiary-butyl ether (MTBE) were originally proposed at first notice as part of the Board's first-notice opinion and order in R00-19(B). See Proposed Amendments to Tiered Approach to Corrective Action Objectives (TACO): 35 Ill. Adm. Code 742, R00-19(B) (July 27, 2000).

On June 7, 2001, the Board opened this Subdocket C for the purpose of addressing separately the proposed MTBE cleanup standards that were originally contained in Subdocket B. The Board adopted its first-notice opinion and order in this matter on September 6, 2001, and it was published on September 21, 2001. 25 Ill. Reg. 11994. It is these proposed MTBE cleanup standards that the Board is adopting today for second notice.

The Board intends to coordinate this rulemaking with another pending Agency proposal that would add groundwater quality standards for MTBE. See generally Proposed MTBE Groundwater Quality Standards Amendments: 35 Ill. Adm. Code 620, R01-14.

By today's action, the Board sends this proposal to second notice, pursuant to the Administrative Procedure Act (5 ILCS 100/1-1 *et seq.* (2000)), for consideration by the Joint Committee on Administrative Rules (JCAR).

**PROCEDURAL HISTORY**

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<sup>1</sup> The Subdocket A amendments were adopted on December 21, 2000 (Proposed Amendments to Tiered Approach to Corrective Action Objectives (TACO): 35 Ill. Adm. Code 742, R00-19(A)), and the Subdocket B amendments were adopted on July 26, 2001 (Proposed Amendments to Tiered Approach to Corrective Action Objectives (TACO): 35 Ill. Adm. Code 742, R00-19(B)).

The subject matter of this proposal was discussed at three public hearings: two in Chicago on August 25, 2000 and September 21, 2000; and one in Springfield on September 11, 2000. A variety of witnesses testified regarding the proposed MTBE standards, including: Douglas Clay, Manager of the Leaking Underground Storage Tank Section of the Agency's Bureau of Land; Thomas Hornshaw, Senior Public Service Administrator and Manager of the Agency's Toxicity Assessment Unit, Office of Chemical Safety; Richard Cobb, Manager of the Groundwater Section of the Agency's Bureau of Water; and David Sykuta on behalf of the Illinois Petroleum Council (Petroleum Council). The Agency also offered two exhibits at hearing.

The first-notice public comment period began with the September 21, 2001 publication of the Board's first-notice opinion and order in the *Illinois Register*, and ended on November 5, 2001. During the first-notice public comment period, the Board received two public comments. The Agency filed supplemental comments and exhibits on October 11, 2001 (PC 1). Additionally, on November 1, 2001, the Petroleum Council filed comments (PC 2). Both comments support the substance of the proposal.

### **DISCUSSION OF SUBDOCKET C SECOND NOTICE PROPOSAL**

There have been only a few minor, non-substantive changes to the rule from that proposed by the Board in its first notice opinion and order. These minor changes amount to basically typographical changes prompted by comments from JCAR. The public comments, discussed in more detail below, did not seek to change the substance of the rule proposed at first notice, and accordingly, no changes were made in response to those comments.

#### **Public Comments**

The Agency filed its supplemental comments in response to a Board request and, "in the interest of establishing a more complete, technically sound record." PC 1 at 1. In Exhibit 1 to its comments, the Agency provided the Board with further explanation regarding the manner in which it calculated the proposed MTBE remediation standards. Specifically, the Agency provided a detailed analysis of the Health Advisory that was proposed by the Agency in 1994 for MTBE. According to the Agency, the "Health Advisory served as a base for determining remediation objectives for groundwater in this proceeding." PC 1 at 2. The Agency's public comment also provided a supplementation to the Agency's calculation of the proposed soil remediation objectives for MTBE. *See* PC 1, Exh. 2.

Exhibit 1 to the Agency's public comment is a "Notice of Health Advisory for Methyl Tertiary-Butyl Ether (MTBE)." In this June 9, 1994 document, the Agency stated that, "[a]s a result of routine monitoring of public water supply systems, the gasoline additive Methyl Tertiary-Butyl Ether (MTBE) has been detected at least in two public water supplies. . . . [and as a result, the Agency] is announcing its intention to issue a health advisory." PC 1, Exh. 1 at 1. The remainder of this exhibit offers a detailed explanation regarding the Agency's decision to issue a precautionary health advisory concentration for MTBE of 70 parts per billion for public water supplies.

Exhibit 2 to the Agency's public comment contains additional explanation regarding the Agency's calculation of the soil remediation objectives for MTBE. In Exhibit 2, the Agency provides that:

Calculation of the soil remediation objectives was accomplished through use of the risk-based soil screening level (SSL) equations from 742.Appendix C, Table A of TACO. Default exposure durations and contact rates from 742.Appendix C, Table B of TACO were used in these calculations. . . .

TACO equation S1 was used to calculate the soil ingestion exposure route cleanup objectives. The inhalation exposure route remediation objectives were calculated using equation S4 for the residential and industrial/commercial scenarios and equation S5 was used for the construction worker. Equations S17 and S18 were used to calculate the soil component of the groundwater ingestion exposure route objectives. The saturation limit (C<sub>sat</sub>) for MTBE was calculated using equation S29. C<sub>sat</sub> may be substituted for the inhalation objective, if lower, due to MTBE's melting point of -109 degrees C. PC 1, Exh. 2 at 1-2.

With its supplemental comments, the Agency provided further justification and explanation of the manner in which the proposed MTBE remediation objectives were calculated. The Board appreciates this supplementation and the additional support it gives for the remediation objectives proposed in both the first and second notice opinions and orders.

A public comment was also filed by the Petroleum Council. In its comments, the Petroleum Council expressed its support for the proposed MTBE standards:

The [Petroleum Council] supports the Board's action in adopting the Illinois Environmental Protection Agency's proposed MTBE standards. . . . the record compiled before the Board included a comprehensive discussion of the scientific information available regarding MTBE and supports the proposed standards. . . . [n]o one testified in opposition to the proposed standard . . . the Board should adopt the MTBE values proposed by the Agency. PC 2 at 1.

The Petroleum Council also commented on the Board's purported inability to treat MTBE as a carcinogen. The Petroleum Council presented "the most recent evaluations of MTBE by the main independent health organizations," (PC 2 at 2) including: the International Agency for Research on Cancer; the National Toxicology Program; the Office of Environmental Health Hazard Assessment; the World Health Organization; and the European Union MTBE Risk Assessment. *See generally* PC 2. According to the Petroleum Council, "[t]hese findings indicate that MTBE has not been determined to be a human carcinogen and does not fall into the categories required by the [Environmental Protection] Act for the Board to determine that it should be treated as a carcinogen." PC 2 at 2.

Accordingly, the Petroleum Council urges the Board to adopt the remediation objectives proposed by the Agency and previously adopted by the Board for first notice.

## **Board Discussion**

The Board appreciates the comments by the Agency and the Petroleum Council, which offer further support for these proposed standards.

The Board again recognizes that there is evidence suggesting the possible carcinogenicity of MTBE. However, the Board remains convinced that, in adopting standards for 35 Ill. Adm. Code 742, it cannot consider MTBE to be a carcinogen unless the contaminant meets the definition of a “carcinogen” found at Section 58.2 of the Environmental Protection Act (Act) (415 ILCS 5/58.2 (2000)) and again at 35 Ill. Adm. Code 742.200. As of this date, MTBE cannot be regulated as a human carcinogen pursuant to Section 58.2 of the Act. Accordingly, the Board will proceed to second notice with the remediation objectives originally proposed by the Agency and adopted by the Board for first notice on September 6, 2001.

Since no public comments were received which questioned the Board’s legal or technical conclusions in this regard, and since three public hearings have already been held on the subject matter of this Subdocket C, the Board concludes that no further public hearings are necessary before proceeding to second notice with the proposed regulations.

## **ORDER**

The Board directs the Clerk to cause the filing of the following with the Joint Committee on Administrative Rules for second-notice review. TITLE 35: ENVIRONMENTAL PROTECTION  
SUBTITLE G: WASTE DISPOSAL  
CHAPTER I: POLLUTION CONTROL BOARD  
SUBCHAPTER f: RISK BASED CLEANUP OBJECTIVES  
PART 742  
TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES

### **SUBPART A: INTRODUCTION**

Section	
742.100	Intent and Purpose
742.105	Applicability
742.110	Overview of Tiered Approach
742.115	Key Elements
742.120	Site Characterization

### **SUBPART B: GENERAL**

Section	
742.200	Definitions
742.205	Severability
742.210	Incorporations by Reference
742.215	Determination of Soil Attenuation Capacity

742.220	Determination of Soil Saturation Limit
742.225	Demonstration of Compliance with Remediation Objectives
742.230	Agency Review and Approval

#### SUBPART C: EXPOSURE ROUTE EVALUATIONS

Section	
742.300	Exclusion of Exposure Route
742.305	Contaminant Source and Free Product Determination
742.310	Inhalation Exposure Route
742.315	Soil Ingestion Exposure Route
742.320	Groundwater Ingestion Exposure Route

#### SUBPART D: DETERMINING AREA BACKGROUND

Section	
742.400	Area Background
742.405	Determination of Area Background for Soil
742.410	Determination of Area Background for Groundwater
742.415	Use of Area Background Concentrations

#### SUBPART E: TIER 1 EVALUATION

Section	
742.500	Tier 1 Evaluation Overview
742.505	Tier 1 Soil and Groundwater Remediation Objectives
742.510	Tier 1 Remediation Objectives Tables

#### SUBPART F: TIER 2 GENERAL EVALUATION

Section	
742.600	Tier 2 Evaluation Overview
742.605	Land Use
742.610	Chemical and Site Properties

#### SUBPART G: TIER 2 SOIL EVALUATION

Section	
742.700	Tier 2 Soil Evaluation Overview
742.705	Parameters for Soil Remediation Objective Equations
742.710	SSL Soil Equations
742.715	RBCA Soil Equations
742.720	Chemicals with Cumulative Noncarcinogenic Effects

#### SUBPART H: TIER 2 GROUNDWATER EVALUATION

Section	
742.800	Tier 2 Groundwater Evaluation Overview
742.805	Tier 2 Groundwater Remediation Objectives
742.810	Calculations to Predict Impacts from Remaining Groundwater Contamination

#### SUBPART I: TIER 3 EVALUATION

Section	
742.900	Tier 3 Evaluation Overview
742.905	Modifications of Parameters
742.910	Alternative Models
742.915	Formal Risk Assessments
742.920	Impractical Remediation
742.925	Exposure Routes
742.930	Derivation of Toxicological Data

#### SUBPART J: INSTITUTIONAL CONTROLS

Section	
742.1000	Institutional Controls
742.1005	No Further Remediation Letters
742.1010	Environmental Land Use Controls
742.1012	Federally Owned Property: Land Use Control Memorandums of Agreement
742.1015	Ordinances
742.1020	Highway Authority Agreements

#### SUBPART K: ENGINEERED BARRIERS

Section	
742.1100	Engineered Barriers
742.1105	Engineered Barrier Requirements

#### APPENDIX A General

ILLUSTRATION A Developing Soil Remediation Objectives Under the Tiered Approach

ILLUSTRATION B Developing Groundwater Remediation Objectives Under the Tiered Approach

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

TABLE B Tolerance Factor (K)

TABLE C Coefficients  $\{A_{N-1+1}\}$  for W Test of Normality, for  $N=2(1)50$

TABLE D Percentage Points of the W Test for  $n=3(1)50$

TABLE E Similar-Acting Noncarcinogenic Chemicals

TABLE F Similar-Acting Carcinogenic Chemicals

TABLE G Concentrations of Inorganic Chemicals in Background Soils

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

APPENDIX B Tier 1 Tables and Illustrations

ILLUSTRATION A Tier 1 Evaluation

TABLE A Tier 1 Soil Remediation Objectives for Residential Properties

TABLE B Tier 1 Soil Remediation Objectives for Industrial/Commercial Properties

TABLE C pH Specific Soil Remediation Objectives for Inorganics and Ionizing Organics for the Soil Component of the Groundwater Ingestion Route (Class I Groundwater)

TABLE D pH Specific Soil Remediation Objectives for Inorganics and Ionizing Organics for the Soil Component of the Groundwater Ingestion Route (Class II Groundwater)

TABLE E Tier 1 Groundwater Remediation Objectives for the Groundwater Component of the Groundwater Ingestion Route

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

APPENDIX C Tier 2 Tables and Illustrations

ILLUSTRATION A Tier 2 Evaluation for Soil

ILLUSTRATION B Tier 2 Evaluation for Groundwater

ILLUSTRATION C US Department of Agriculture Soil Texture Classification

TABLE A SSL Equations

TABLE B SSL Parameters

TABLE C RBCA Equations

TABLE D RBCA Parameters

TABLE E Default Physical and Chemical Parameters

TABLE F Methods for Determining Physical Soil Parameters

TABLE G Error Function (erf)

TABLE H Q/C Values By Source Area

TABLE I  $K_{oc}$  Values for Ionizing Organics as a Function of pH ( $\text{cm}^3/\text{g}$  or  $\text{L}/\text{kg}$  or  $\text{cm}^3_{\text{water}}/\text{g}_{\text{soil}}$ )

TABLE J Values to be Substituted for  $k_d$  or  $k_s$  when Evaluating Inorganics as a Function of pH ( $\text{cm}^3/\text{g}$  or  $\text{L}/\text{kg}$  or  $\text{cm}^3_{\text{water}}/\text{g}_{\text{soil}}$ )

TABLE K Parameter Estimates for Calculating Water-Filled Soil Porosity ( $\theta_w$ )

AUTHORITY: Implementing Sections 22.4, 22.12, Title XVI, and Title XVII and authorized by Sections 27 and 58.5 of the Environmental Protection Act [415 ILCS 5/22.4, 22.12, 27, and 58.5 and Title XVI and Title XVII].

SOURCE: Adopted in R97-12(A) at 21 Ill. Reg. 7942, effective July 1, 1997; amended in R97-12(B) at 21 Ill. Reg. 16391, effective December 8, 1997; amended in R97-12(C) at 22 Ill. Reg. 10847, effective June 8, 1998; amended in R00-19(A) at 25 Ill. Reg. 651, effective January 6, 2001; amended in R00-19(B) at 25 Ill. Reg. 10374, effective August 15, 2001; amended in R00-19(C) at 25 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_.

**NOTE: Capitalization indicates statutory language.**

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
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
1634-04-4	<del>Methyl tert-butyl ether</del> Methyl tertiary-butyl ether	<u>8,800</u>
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)	320
	<b>Ionizable Organics</b>	
95-57-8	2-Chlorophenol	53,000

(Source: Amended at 25 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

Section 742.APPENDIX A: General

Section 742.TABLE E: Similar-Acting Noncarcinogenic Chemicals

<u>Kidney</u>	<u>Central Nervous System</u>
Acetone	Butanol (Ingestion only)
Cadmium (Ingestion only)	Cyanide (amenable)
Chlorobenzene	2,4-Dimethylphenol
Dalapon	Endrin
1,1-Dichloroethane	Manganese
Di-n-octyl phthalate (Ingestion only)	2-Methylphenol
Endosulfan	Mercury (Inhalation only)
Ethylbenzene	Styrene (Inhalation only)
Fluoranthene	Toluene (Inhalation only)
Nitrobenzene	Xylenes (Ingestion only)
Pyrene	
Toluene (Ingestion only)	<u>Circulatory System</u>
2,4,5-Trichlorophenol	Antimony
Vinyl Acetate (Ingestion only)	Barium (Ingestion only)
	2,4-D
<u>Liver</u>	cis-1,2-Dichloroethylene (Ingestion only)
Acenaphthene	Nitrobenzene
Acetone (Ingestion only)	trans-1,2-Dichloroethylene (Ingestion only)
Butylbenzyl phthalate (Ingestion only)	2,4-Dimethylphenol
Chlorobenzene (Ingestion only)	Fluoranthene
1,1-Dichloroethylene (Ingestion only)	Fluorene
Di-n-octyl phthalate (Ingestion only)	Styrene (Ingestion only)
Endrin	Zinc
Ethylbenzene	
Fluoranthene	<u>Gastrointestinal System</u>
Nitrobenzene	Beryllium (Ingestion only)
Picloram	Endothall
Styrene (Ingestion only)	Hexachlorocyclopentadiene (Ingestion only)
2,4,5-TP (Silvex)	Methyl bromide (Ingestion only)
Toluene (Ingestion only)	
1,2,4-Trichlorobenzene (Inhalation only)	
2,4,5-Trichlorophenol	

### 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

### 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

Mercury (Ingestion only)

Adrenal Gland

Nitrobenzene

1,2,4-Trichlorobenzene (Ingestion only)

Kidney

Acetone (Ingestion only)

Cadmium (Ingestion only)

Chlorobenzene

Dalapon

1,1-Dichloroethane

Di-n-octyl phthalate (Ingestion only)

Endosulfan

Ethylbenzene

Fluoranthene

~~Methyl tert-butyl ether (Inhalation only)~~

Methyl tertiary-butyl ether (Inhalation only)

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

~~Methyl tert-butyl ether (Inhalation only)~~

Methyl tertiary-butyl ether (Inhalation only)

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~~2,4-Dimethylphenol

Endrin

Manganese

~~2-Methylphenol~~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

Gastrointestinal System

Beryllium (Ingestion only)

Endothall

Hexachlorocyclopentadiene (Ingestion only)

Methyl bromide (Ingestion only)

~~Methyl tert-butyl ether (Ingestion only)~~

Methyl tertiary-butyl ether (Ingestion only)

Immune System

2,4-Dichlorophenol

p-Chloroaniline

Mercury (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

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)

Cholinesterase Inhibition

Aldicarb

Carbofuran

Decreased Body Weight Gains  
and Circulatory System Effects

Atrazine

Simazine

(Source: Amended at 25 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)



Section 742.APPENDIX B: Tier 1 Tables and Illustrations

Section 742.TABLE A: Tier 1 Soil Remediation Objectives<sup>a</sup> for Residential Properties

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/kg)	Class II (mg/kg)	
83-32-9	Acenaphthene	4,700 <sup>b</sup>	--- <sup>c</sup>	570 <sup>b</sup>	2,900	*
67-64-1	Acetone	7,800 <sup>b</sup>	100,000 <sup>d</sup>	16 <sup>b</sup>	16	*
15972-60-8	Alachlor <sup>o</sup>	8 <sup>e</sup>	--- <sup>c</sup>	0.04	0.2	NA
116-06-3	Aldicarb <sup>o</sup>	78 <sup>b</sup>	--- <sup>c</sup>	0.013	0.07	NA
309-00-2	Aldrin	0.04 <sup>e</sup>	3 <sup>e</sup>	0.5 <sup>e</sup>	2.5	0.94
120-12-7	Anthracene	23,000 <sup>b</sup>	--- <sup>c</sup>	12,000 <sup>b</sup>	59,000	*
1912-24-9	Atrazine <sup>o</sup>	2700 <sup>b</sup>	--- <sup>c</sup>	0.066	0.33	NA
71-43-2	Benzene	12 <sup>e</sup>	0.8 <sup>e</sup>	0.03	0.17	*
56-55-3	Benzo( <i>a</i> )anthracene	0.9 <sup>e</sup>	--- <sup>c</sup>	2	8	*
205-99-2	Benzo( <i>b</i> )fluoranthene	0.9 <sup>e</sup>	--- <sup>c</sup>	5	25	*

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/kg)	Class II (mg/kg)	
207-08-9	Benzo(k)fluroanthene	9 <sup>e</sup>	--- <sup>c</sup>	49	250	*
50-32-8	Benzo(a)pyrene	0.09 <sup>e,f</sup>	--- <sup>c</sup>	8	82	*
111-44-4	Bis(2-chloroethyl)ether	0.6 <sup>e</sup>	0.2 <sup>e,f</sup>	0.0004 <sup>e,f</sup>	0.0004	0.66
117-81-7	Bis(2-ethylhexyl)phthalate	46 <sup>e</sup>	31,000 <sup>d</sup>	3,600	31,000 <sup>d</sup>	*
75-27-4	Bromodichloromethane (Dichlorobromomethane)	10 <sup>e</sup>	3,000 <sup>d</sup>	0.6	0.6	*
75-25-2	Bromoform	81 <sup>e</sup>	53 <sup>e</sup>	0.8	0.8	*
71-36-3	Butanol	7,800 <sup>b</sup>	10,000 <sup>d</sup>	17 <sup>b</sup>	17	NA
85-68-7	Butyl benzyl phthalate	16,000 <sup>b</sup>	930 <sup>d</sup>	930 <sup>d</sup>	930 <sup>d</sup>	*
86-74-8	Carbazole	32 <sup>e</sup>	--- <sup>c</sup>	0.6 <sup>e</sup>	2.8	NA
1563-66-2	Carbofuran <sup>o</sup>	390 <sup>b</sup>	--- <sup>c</sup>	0.22	1.1	NA
75-15-0	Carbon disulfide	7,800 <sup>b</sup>	720 <sup>d</sup>	32 <sup>b</sup>	160	*



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/kg)	Class II (mg/kg)	
56-23-5	Carbon tetrachloride	5 <sup>e</sup>	0.3 <sup>e</sup>	0.07	0.33	*
57-74-9	Chlordane	1.8 <sup>e</sup>	72 <sup>e</sup>	10	48	*
106-47-8	4-Chloroaniline ( <i>p</i> -Chloroaniline)	310 <sup>b</sup>	--- <sup>c</sup>	0.7 <sup>b</sup>	0.7	*
108-90-7	Chlorobenzene (Monochlorobenzene)	1,600 <sup>b</sup>	130 <sup>b</sup>	1	6.5	*
124-48-1	Chlorodibromomethane (Dibromochloromethane)	1,600 <sup>b</sup>	1,300 <sup>d</sup>	0.4	0.4	*
67-66-3	Chloroform	100 <sup>e</sup>	0.3 <sup>e</sup>	0.6	2.9	*
218-01-9	Chrysene	88 <sup>e</sup>	--- <sup>c</sup>	160	800	*
94-75-7	2,4-D <sup>o</sup>	780 <sup>b</sup>	--- <sup>c</sup>	1.5	7.7	*
75-99-0	Dalapon <sup>o</sup>	2,300 <sup>b</sup>	--- <sup>c</sup>	0.85	8.5	*
72-54-8	DDD	3 <sup>e</sup>	--- <sup>c</sup>	16 <sup>e</sup>	80	*
72-55-9	DDE	2 <sup>e</sup>	--- <sup>c</sup>	54 <sup>e</sup>	270	*

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/kg)	Class II (mg/kg)	
50-29-3	DDT	2 <sup>e</sup>	--- <sup>g</sup>	32 <sup>e</sup>	160	*
53-70-3	Dibenzo( <i>a,h</i> )anthracene	0.09 <sup>e,f</sup>	--- <sup>c</sup>	2	7.6	*
96-12-8	1,2-Dibromo-3-chloropropane	0.46 <sup>e</sup>	11 <sup>b</sup>	0.002	0.002	*
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	0.0075 <sup>e</sup>	0.17 <sup>e</sup>	0.0004	0.004	0.005
84-74-2	Di- <i>n</i> -butyl phthalate	7,800 <sup>b</sup>	2,300 <sup>d</sup>	2,300 <sup>d</sup>	2,300 <sup>d</sup>	*
95-50-1	1,2-Dichlorobenzene ( <i>o</i> – Dichlorobenzene)	7,000 <sup>b</sup>	560 <sup>d</sup>	17	43	*
106-46-7	1,4-Dichlorobenzene ( <i>p</i> – Dichlorobenzene)	--- <sup>c</sup>	11,000 <sup>b</sup>	2	11	*
91-94-1	3,3'-Dichlorobenzidine	1 <sup>e</sup>	--- <sup>c</sup>	0.007 <sup>e,f</sup>	0.033	1.3
75-34-3	1,1-Dichloroethane	7,800 <sup>b</sup>	1,300 <sup>b</sup>	23 <sup>b</sup>	110	*

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)
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	7 <sup>e</sup>	0.4 <sup>e</sup>	0.02	0.1	*
75-35-4	1,1-Dichloroethylene	700 <sup>b</sup>	1,500 <sup>d</sup>	0.06	0.3	*
156-59-2	<i>cis</i> -1,2-Dichloroethylene	780 <sup>b</sup>	1,200 <sup>d</sup>	0.4	1.1	*
156-60-5	<i>trans</i> -1,2-Dichloroethylene	1,600 <sup>b</sup>	3,100 <sup>d</sup>	0.7	3.4	*
78-87-5	1,2-Dichloropropane	9 <sup>e</sup>	15 <sup>b</sup>	0.03	0.15	*
542-75-6	1,3-Dichloropropene (1,3-Dichloropropylene, <i>cis</i> + <i>trans</i> )	6.4 <sup>e</sup>	1.1 <sup>e</sup>	0.004 <sup>e</sup>	0.02	0.005
60-57-1	Dieldrin <sup>n</sup>	0.04 <sup>e</sup>	1 <sup>e</sup>	0.004 <sup>e</sup>	0.02	0.603
84-66-2	Diethyl phthalate	63,000 <sup>b</sup>	2,000 <sup>d</sup>	470 <sup>b</sup>	470	*
105-67-9	2,4-Dimethylphenol	1,600 <sup>b</sup>	--- <sup>c</sup>	9 <sup>b</sup>	9	*
121-14-2	2,4-Dinitrotoluene	0.9 <sup>e</sup>	--- <sup>c</sup>	0.0008 <sup>e,f</sup>	0.0008	0.250

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/kg)	Class II (mg/kg)	
606-20-2	2,6-Dinitrotoluene	0.9 <sup>e</sup>	--- <sup>c</sup>	0.0007 <sup>e,f</sup>	0.0007	0.260
117-84-0	Di- <i>n</i> -octyl phthalate	1,600 <sup>b</sup>	10,000 <sup>d</sup>	10,000 <sup>d</sup>	10,000 <sup>d</sup>	*
115-29-7	Endosulfan <sup>o</sup>	470 <sup>b</sup>	--- <sup>c</sup>	18 <sup>b</sup>	90	*
145-73-3	Endothall <sup>o</sup>	1,600 <sup>b</sup>	--- <sup>c</sup>	0.4	0.4	NA
72-20-8	Endrin	23 <sup>b</sup>	--- <sup>c</sup>	1	5	*
100-41-4	Ethylbenzene	7,800 <sup>b</sup>	400 <sup>d</sup>	13	19	*
206-44-0	Fluoranthene	3,100 <sup>b</sup>	--- <sup>c</sup>	4,300 <sup>b</sup>	21,000	*
86-73-7	Fluorene	3,100 <sup>b</sup>	--- <sup>c</sup>	560 <sup>b</sup>	2,800	*
76-44-8	Heptachlor	0.1 <sup>e</sup>	0.1 <sup>e</sup>	23	110	0.871
1024-57-3	Heptachlor epoxide	0.07 <sup>e</sup>	5 <sup>e</sup>	0.7	3.3	1.005
118-74-1	Hexachlorobenzene	0.4 <sup>e</sup>	1 <sup>e</sup>	2	11	*
319-84-6	<i>Alpha</i> -HCH ( <i>alpha</i> -BHC)	0.1 <sup>e</sup>	0.8 <sup>e</sup>	0.0005 <sup>e,f</sup>	0.003	0.0074

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/kg)	Class II (mg/kg)	
58-89-9	<i>Gamma</i> -HCH (Lindane) <sup>a</sup>	0.5 <sup>e</sup>	--- <sup>c</sup>	0.009	0.047	*
77-47-4	Hexachlorocyclopentadiene	550 <sup>b</sup>	10 <sup>b</sup>	400	2,200 <sup>d</sup>	*
67-72-1	Hexachloroethane	78 <sup>b</sup>	--- <sup>c</sup>	0.5 <sup>b</sup>	2.6	*
193-39-5	Indeno(1,2,3- <i>c,d</i> )pyrene	0.9 <sup>e</sup>	--- <sup>c</sup>	14	69	*
78-59-1	Isophorone	15,600 <sup>b</sup>	4,600 <sup>d</sup>	8 <sup>b</sup>	8	*
72-43-5	Methoxychlor <sup>o</sup>	390 <sup>b</sup>	--- <sup>c</sup>	160	780	*
74-83-9	Methyl bromide (Bromomethane)	110 <sup>b</sup>	10 <sup>b</sup>	0.2 <sup>b</sup>	1.2	*
<u>1634-04-4</u>	<del>Methyl tert-butyl ether</del> Methyl tertiary-butyl ether	<u>780<sup>b</sup></u>	<u>8,800<sup>d</sup></u>	<u>0.32</u>	<u>0.32</u>	<u>*</u>
75-09-2	Methylene chloride (Dichloromethane)	85 <sup>e</sup>	13 <sup>e</sup>	0.02 <sup>e</sup>	0.2	*
95-48-7	2-Methylphenol ( <i>o</i> -Cresol)	3,900 <sup>b</sup>	--- <sup>c</sup>	15 <sup>b</sup>	15	*
91-20-3	Naphthalene	1,600 <sup>b</sup>	170 <sup>b</sup>	12 <sup>b</sup>	18	*
98-95-3	Nitrobenzene	39 <sup>b</sup>	92 <sup>b</sup>	0.1 <sup>b,f</sup>	0.1	0.26

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/kg)	Class II (mg/kg)	
86-30-6	<i>N</i> -Nitrosodiphenylamine	130 <sup>e</sup>	--- <sup>c</sup>	1 <sup>e</sup>	5.6	*
621-64-7	<i>N</i> -Nitrosodi- <i>n</i> -propylamine	0.09 <sup>e,f</sup>	--- <sup>c</sup>	0.00005 <sup>e,f</sup>	0.00005	0.0018
108-95-2	Phenol	47,000 <sup>b</sup>	--- <sup>c</sup>	100 <sup>b</sup>	100	*
1918-02-1	Picloram <sup>o</sup>	5,500 <sup>b</sup>	--- <sup>c</sup>	2	20	NA
1336-36-3	Polychlorinated biphenyls (PCBs) <sup>n</sup>	1 <sup>h</sup>	--- <sup>c,h</sup>	--- <sup>h</sup>	--- <sup>h</sup>	*
129-00-0	Pyrene	2,300 <sup>b</sup>	--- <sup>c</sup>	4,200 <sup>b</sup>	21,000	*
122-34-9	Simazine <sup>o</sup>	390 <sup>b</sup>	--- <sup>c</sup>	0.04	0.37	NA
100-42-5	Styrene	16,000 <sup>b</sup>	1,500 <sup>d</sup>	4	18	*
127-18-4	Tetrachloroethylene (Perchloroethylene)	12 <sup>e</sup>	11 <sup>e</sup>	0.06	0.3	*
108-88-3	Toluene	16,000 <sup>b</sup>	650 <sup>d</sup>	12	29	*

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/kg)	Class II (mg/kg)	
8001-35-2	Toxaphene <sup>a</sup>	0.6 <sup>e</sup>	89 <sup>e</sup>	31	150	*
120-82-1	1,2,4-Trichlorobenzene	780 <sup>b</sup>	3,200 <sup>b</sup>	5	53	*
71-55-6	1,1,1-Trichloroethane	--- <sup>c</sup>	1,200 <sup>d</sup>	2	9.6	*
79-00-5	1,1,2-Trichloroethane	310 <sup>b</sup>	1,800 <sup>d</sup>	0.02	0.3	*
79-01-6	Trichloroethylene	58 <sup>e</sup>	5 <sup>e</sup>	0.06	0.3	*
108-05-4	Vinyl acetate	78,000 <sup>b</sup>	1,000 <sup>b</sup>	170 <sup>b</sup>	170	*
75-01-4	Vinyl chloride	0.46 <sup>e</sup>	0.28 <sup>e</sup>	0.01 <sup>f</sup>	0.07	*
108-38-3	m-Xylene	160,000 <sup>b</sup>	420 <sup>d</sup>	210	210	*
95-47-6	o-Xylene	160,000 <sup>b</sup>	410 <sup>d</sup>	190	190	*
106-42-3	p-Xylene	160,000 <sup>b</sup>	460 <sup>d</sup>	200	200	*

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/kg)	Class II (mg/kg)	
1330-20-7	Xylenes (total)	160,000 <sup>b</sup>	320 <sup>d</sup>	150	150	*
	<b>Ionizable Organics</b>					
65-85-0	Benzoic Acid	310,000 <sup>b</sup>	--- <sup>c</sup>	400 <sup>b,i</sup>	400 <sup>i</sup>	*
95-57-8	2-Chlorophenol	390 <sup>b</sup>	53,000 <sup>d</sup>	4 <sup>b,i</sup>	4 <sup>i</sup>	*
120-83-2	2,4-Dichlorophenol	230 <sup>b</sup>	--- <sup>c</sup>	1 <sup>b,i</sup>	1 <sup>i</sup>	*
51-28-5	2,4-Dinitrophenol	160 <sup>b</sup>	--- <sup>c</sup>	0.2 <sup>b,f</sup>	0.2	3.3
88-85-7	Dinoseb <sup>o</sup>	78 <sup>b</sup>	--- <sup>c</sup>	0.34 <sup>b,i</sup>	3.4 <sup>i</sup>	*
87-86-5	Pentachlorophenol	3 <sup>e,j</sup>	--- <sup>c</sup>	0.03 <sup>f,i</sup>	0.14 <sup>i</sup>	*
93-72-1	2,4,5-TP (Silvex)	630 <sup>b</sup>	--- <sup>c</sup>	11 <sup>i</sup>	55 <sup>i</sup>	*
95-95-4	2,4,5-Trichlorophenol	7,800 <sup>b</sup>	--- <sup>c</sup>	270 <sup>b,i</sup>	1,400 <sup>i</sup>	*
88-06-2	2,4,6 Trichlorophenol	58 <sup>e</sup>	200 <sup>e</sup>	0.2 <sup>e,f,i</sup>	0.77 <sup>i</sup>	0.66



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)	
	<b>Inorganics</b>					
7440-36-0	Antimony	31 <sup>b</sup>	--- <sup>c</sup>	0.006 <sup>m</sup>	0.024 <sup>m</sup>	*
7440-38-2	Arsenic <sup>l,n</sup>	t	750 <sup>e</sup>	0.05 <sup>m</sup>	0.2 <sup>m</sup>	*
7440-39-3	Barium	5,500 <sup>b</sup>	690,000 <sup>b</sup>	2.0 <sup>m</sup>	2.0 <sup>m</sup>	*
7440-41-7	Beryllium	160 <sup>b</sup>	1,300 <sup>e</sup>	0.004 <sup>m</sup>	0.5 <sup>m</sup>	*
7440-42-8	Boron	7,000 <sup>b</sup>	--- <sup>g</sup>	2.0 <sup>m</sup>	2.0 <sup>m</sup>	*
7440-43-9	Cadmium <sup>l,n</sup>	78 <sup>b,r</sup>	1,800 <sup>e</sup>	0.005 <sup>m</sup>	0.05 <sup>m</sup>	*
16887-00-6	Chloride	--- <sup>c</sup>	--- <sup>c</sup>	200 <sup>m</sup>	200 <sup>m</sup>	*
7440-47-3	Chromium, total	230 <sup>b</sup>	270 <sup>e</sup>	0.1 <sup>m</sup>	1.0 <sup>m</sup>	*
16065-83-1	Chromium, ion, trivalent	120,000 <sup>b</sup>	--- <sup>c</sup>	--- <sup>g</sup>	--- <sup>g</sup>	*
18540-29-9	Chromium, ion, hexavalent	230 <sup>b</sup>	270 <sup>e</sup>	---	---	*
7440-48-4	Cobalt	4,700 <sup>b</sup>	--- <sup>c</sup>	1.0 <sup>m</sup>	1.0 <sup>m</sup>	*

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 <sup>n</sup>	2,900 <sup>b</sup>	--- <sup>c</sup>	0.65 <sup>m</sup>	0.65 <sup>m</sup>	*
57-12-5	Cyanide (amenable)	1,600 <sup>b</sup>	--- <sup>c</sup>	0.2 <sup>q,m</sup>	0.6 <sup>q,m</sup>	*
7782-41-4	Fluoride	4,700 <sup>b</sup>	--- <sup>c</sup>	4.0 <sup>m</sup>	4.0 <sup>m</sup>	*
15438-31-0	Iron	--- <sup>c</sup>	--- <sup>c</sup>	5.0 <sup>m</sup>	5.0 <sup>m</sup>	*
7439-92-1	Lead	400 <sup>k</sup>	--- <sup>c</sup>	0.0075 <sup>m</sup>	0.1 <sup>m</sup>	*
7439-96-5	Manganese	3,700 <sup>b</sup>	69,000 <sup>b</sup>	0.15 <sup>m</sup>	10.0 <sup>m</sup>	*
7439-97-6	Mercury <sup>l,n,s</sup>	23 <sup>b</sup>	10 <sup>b</sup>	0.002 <sup>m</sup>	0.01 <sup>m</sup>	*
7440-02-0	Nickel <sup>l</sup>	1,600 <sup>b</sup>	13,000 <sup>c</sup>	0.1 <sup>m</sup>	2.0 <sup>m</sup>	*
14797-55-8	Nitrate as N <sup>p</sup>	130,000 <sup>b</sup>	--- <sup>c</sup>	10.0 <sup>q</sup>	100 <sup>q</sup>	*
7782-49-2	Selenium <sup>l,n</sup>	390 <sup>b</sup>	--- <sup>c</sup>	0.05 <sup>m</sup>	0.05 <sup>m</sup>	*

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)
7440-22-4	Silver	390 <sup>b</sup>	--- <sup>c</sup>	0.05 <sup>m</sup>	---	*
14808-79-8	Sulfate	--- <sup>c</sup>	--- <sup>c</sup>	400 <sup>m</sup>	400 <sup>m</sup>	*
7440-28-0	Thallium	6.3 <sup>b,u</sup>	--- <sup>c</sup>	0.002 <sup>m</sup>	0.02 <sup>m</sup>	*
7440-62-2	Vanadium	550 <sup>b</sup>	--- <sup>c</sup>	0.049 <sup>m</sup>	0.1 <sup>m</sup>	*
7440-66-6	Zinc <sup>1</sup>	23,000 <sup>b</sup>	--- <sup>c</sup>	5.0 <sup>m</sup>	10 <sup>m</sup>	*

"\*" 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

- <sup>a</sup> Soil remediation objectives based on human health criteria only.
- <sup>b</sup> Calculated values correspond to a target hazard quotient of 1.
- <sup>c</sup> No toxicity criteria available for the route of exposure.
- <sup>d</sup> 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.
- <sup>e</sup> Calculated values correspond to a cancer risk level of 1 in 1,000,000.
- <sup>f</sup> Level is at or below Contract Laboratory Program required quantitation limit for Regular Analytical Services (RAS).
- <sup>g</sup> Chemical-specific properties are such that this route is not of concern at any soil contaminant concentration.
- <sup>h</sup> 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.
- <sup>i</sup> 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.
- <sup>j</sup> Ingestion soil remediation objective adjusted by a factor of 0.5 to account for dermal route.
- <sup>k</sup> 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.
- <sup>l</sup> Potential for soil-plant-human exposure.
- <sup>m</sup> 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.
- <sup>n</sup> The Agency reserves the right to evaluate the potential for remaining contaminant concentrations to pose significant threats to crops, livestock, or wildlife.
- <sup>o</sup> 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.
- <sup>p</sup> 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.
- <sup>q</sup> The TCLP extraction must be done using water at a pH of 7.0.
- <sup>r</sup> Value based on dietary Reference Dose.
- <sup>s</sup> 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).
- <sup>t</sup> For the ingestion route for arsenic, see 742.Appendix A, Table G.
- <sup>u</sup> Value based on Reference Dose for Thallium sulfate (CAS No. 7446-18-6).

(Source: Amended at 25 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

Section 742.APPENDIX B: Tier 1 Tables and Illustrations

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

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Exposure Route		ADL (mg/kg)
		Industrial-Commercial		Construction Worker		Values		
		Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	ClassII (mg/kg)	
83-32-9	Acenaphthene	120,000 <sup>b</sup>	----- <sup>c</sup>	120,000 <sup>b</sup>	----- <sup>c</sup>	570 <sup>b</sup>	2,900	*
67-64-1	Acetone	200,000 <sup>b</sup>	100,000 <sup>d</sup>	200,000 <sup>b</sup>	100,000 <sup>d</sup>	16 <sup>b</sup>	16	*
15972-60-8	Alachlor <sup>o</sup>	72 <sup>e</sup>	----- <sup>c</sup>	1,600 <sup>e</sup>	----- <sup>c</sup>	0.04	0.2	NA
116-06-3	Aldicarb <sup>o</sup>	2,000 <sup>b</sup>	----- <sup>c</sup>	200 <sup>b</sup>	----- <sup>c</sup>	0.013	0.07	NA
309-00-2	Aldrin	0.3 <sup>e</sup>	6.6 <sup>e</sup>	6.1 <sup>b</sup>	9.3 <sup>e</sup>	0.5 <sup>e</sup>	2.5	0.94
120-12-7	Anthracene	610,000 <sup>b</sup>	----- <sup>c</sup>	610,000 <sup>b</sup>	----- <sup>c</sup>	12,000 <sup>b</sup>	59,000	*
1912-24-9	Atrazine <sup>o</sup>	72,000 <sup>b</sup>	----- <sup>c</sup>	7,100 <sup>b</sup>	----- <sup>c</sup>	0.066	0.33	NA
71-43-2	Benzene	100 <sup>e</sup>	1.6 <sup>e</sup>	2,300 <sup>e</sup>	2.2 <sup>e</sup>	0.03	0.17	*

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

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Exposure Route		ADL (mg/kg)
		Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	
1563-66-2	Carbofuran <sup>o</sup>	10,000 <sup>b</sup>	---- <sup>c</sup>	1,000 <sup>b</sup>	---- <sup>c</sup>	0.22	1.1	NA
75-15-0	Carbon disulfide	200,000 <sup>b</sup>	720 <sup>d</sup>	20,000 <sup>b</sup>	9.0 <sup>b</sup>	32 <sup>b</sup>	160	*
56-23-5	Carbon tetrachloride	44 <sup>e</sup>	0.64 <sup>e</sup>	410 <sup>b</sup>	0.90 <sup>e</sup>	0.07	0.33	*
57-74-9	Chlordane	1.6 <sup>e</sup>	140 <sup>e</sup>	100 <sup>b</sup>	22 <sup>b</sup>	10	48	*
106-47-8	4 – Chloroaniline ( <i>p</i> -Chloroaniline)	8,200 <sup>b</sup>	---- <sup>c</sup>	820 <sup>b</sup>	---- <sup>c</sup>	0.7 <sup>b</sup>	0.7	*
108-90-7	Chlorobenzene (Monochlorobenzene)	41,000 <sup>b</sup>	210 <sup>b</sup>	4,100 <sup>b</sup>	1.3 <sup>b</sup>	1	6.5	*
124-48-1	Chlorodibromomethane (Dibromochloromethane)	41,000 <sup>b</sup>	1,300 <sup>d</sup>	41,000 <sup>b</sup>	1,300 <sup>d</sup>	0.4	0.4	*
67-66-3	Chloroform	940 <sup>e</sup>	0.54 <sup>e</sup>	2,000 <sup>b</sup>	0.76 <sup>e</sup>	0.6	2.9	*
218-01-9	Chrysene	780 <sup>e</sup>	---- <sup>c</sup>	17,000 <sup>e</sup>	---- <sup>e</sup>	160	800	*
94-75-7	2,4-D <sup>o</sup>	20,000 <sup>b</sup>	---- <sup>c</sup>	2,000 <sup>b</sup>	---- <sup>c</sup>	1.5	7.7	*

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Exposure Route		ADL (mg/kg)
		Industrial-Commercial	Inhalation (mg/kg)	Construction Worker	Inhalation (mg/kg)	Values		
		Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	
75-99-0	Dalapon <sup>o</sup>	61,000 <sup>b</sup>	----- <sup>c</sup>	6,100 <sup>b</sup>	----- <sup>c</sup>	0.85	8.5	*
72-54-8	DDD	24 <sup>e</sup>	----- <sup>c</sup>	520 <sup>e</sup>	----- <sup>c</sup>	16 <sup>e</sup>	80	*
72-55-9	DDE	17 <sup>e</sup>	----- <sup>c</sup>	370 <sup>e</sup>	----- <sup>c</sup>	54 <sup>e</sup>	270	*
50-29-3	DDT	17 <sup>e</sup>	1,500 <sup>e</sup>	100 <sup>b</sup>	2,100 <sup>e</sup>	32 <sup>e</sup>	160	*
53-70-3	Dibenzo( <i>a,h</i> )anthracene	0.8 <sup>e</sup>	----- <sup>c</sup>	17 <sup>e</sup>	----- <sup>c</sup>	2	7.6	*
96-12-8	1,2-Dibromo-3-chloropropane	4 <sup>e</sup>	17 <sup>b</sup>	89 <sup>e</sup>	0.11 <sup>b</sup>	0.002	0.002	*
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	0.07 <sup>e</sup>	0.32 <sup>e</sup>	1.5 <sup>e</sup>	0.45 <sup>e</sup>	0.0004	0.004	0.005
84-74-2	Di- <i>n</i> -butyl phthalate	200,000 <sup>b</sup>	2,300 <sup>d</sup>	200,000 <sup>b</sup>	2,300 <sup>d</sup>	2,300 <sup>d</sup>	2,300 <sup>d</sup>	*
95-50-1	1,2-Dichlorobenzene ( <i>o</i> -Dichlorobenzene)	180,000 <sup>b</sup>	560 <sup>d</sup>	18,000 <sup>b</sup>	310 <sup>b</sup>	17	43	*
106-46-7	1,4-Dichlorobenzene ( <i>p</i> -Dichlorobenzene)	----- <sup>c</sup>	17,000 <sup>b</sup>	----- <sup>c</sup>	340 <sup>b</sup>	2	11	*



CAS No.	Chemical Name	Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Exposure Route Values		ADL (mg/kg)
		Industrial-Commercial	Inhalation (mg/kg)	Construction Worker	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	
91-94-1	3,3'-Dichlorobenzidine	13 <sup>e</sup>	----- <sup>c</sup>	280 <sup>e</sup>	----- <sup>c</sup>	0.007 <sup>e,f</sup>	0.033	1.3
75-34-3	1,1-Dichloroethane	200,000 <sup>b</sup>	1,700 <sup>d</sup>	200,000 <sup>b</sup>	130 <sup>b</sup>	23 <sup>b</sup>	110	*
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	63 <sup>e</sup>	0.70 <sup>e</sup>	1,400 <sup>e</sup>	0.99 <sup>e</sup>	0.02	0.1	*
75-35-4	1,1-Dichloroethylene	18,000 <sup>b</sup>	1,500 <sup>d</sup>	1,800 <sup>b</sup>	300 <sup>v</sup>	0.06	0.3	*
156-59-2	<i>cis</i> -1,2-Dichloroethylene	20,000 <sup>b</sup>	1,200 <sup>d</sup>	20,000 <sup>b</sup>	1,200 <sup>d</sup>	0.4	1.1	*
156-60-5	<i>Trans</i> -1,2-Dichloroethylene	41,000 <sup>b</sup>	3,100 <sup>d</sup>	41,000 <sup>b</sup>	3,100 <sup>d</sup>	0.7	3.4	*
78-87-5	1,2-Dichloropropane	84 <sup>e</sup>	23 <sup>b</sup>	1,800 <sup>e</sup>	0.50 <sup>b</sup>	0.03	0.15	*
542-75-6	1,3-Dichloropropene (1,3-Dichloropropylene, <i>cis</i> + <i>trans</i> )	57 <sup>e</sup>	2.1 <sup>e</sup>	1,200 <sup>e</sup>	0.39 <sup>b</sup>	0.004 <sup>e</sup>	0.02	0.005
60-57-1	Dieldrin <sup>n</sup>	0.4 <sup>e</sup>	2.2 <sup>e</sup>	7.8 <sup>e</sup>	3.1 <sup>e</sup>	0.004 <sup>e</sup>	0.02	0.603
84-66-2	Diethyl phthalate	1,000,000 <sup>b</sup>	2,000 <sup>d</sup>	1,000,000 <sup>b</sup>	2,000 <sup>d</sup>	470 <sup>b</sup>	470	*

		Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Exposure Route		
		Industrial-Commercial		Construction Worker		Values		
CAS No.	Chemical Name	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 <sup>b</sup>	---- <sup>c</sup>	41,000 <sup>b</sup>	---- <sup>c</sup>	9 <sup>b</sup>	9	*
121-14-2	2,4-Dinitrotoluene	8.4 <sup>e</sup>	---- <sup>c</sup>	180 <sup>e</sup>	---- <sup>c</sup>	0.0008 <sup>e,f</sup>	0.0008	0.250
606-20-2	2,6-Dinitrotoluene	8.4 <sup>e</sup>	---- <sup>c</sup>	180 <sup>e</sup>	---- <sup>c</sup>	0.0007 <sup>e,f</sup>	0.0007	0.260
117-84-0	Di- <i>n</i> -octyl phthalate	41,000 <sup>e</sup>	10,000 <sup>d</sup>	4,100 <sup>b</sup>	10,000 <sup>d</sup>	10,000 <sup>d</sup>	10,000 <sup>d</sup>	*
115-29-7	Endosulfan <sup>o</sup>	12,000 <sup>b</sup>	---- <sup>c</sup>	1,200 <sup>b</sup>	---- <sup>c</sup>	18 <sup>b</sup>	90	*
145-73-3	Endothall <sup>o</sup>	41,000 <sup>c</sup>	---- <sup>c</sup>	4,100 <sup>b</sup>	---- <sup>c</sup>	0.4	0.4	NA
72-20-8	Endrin	610 <sup>b</sup>	---- <sup>c</sup>	61 <sup>b</sup>	---- <sup>c</sup>	1	5	*
100-41-4	Ethylbenzene	200,000 <sup>b</sup>	400 <sup>d</sup>	20,000 <sup>b</sup>	58 <sup>b</sup>	13	19	*
206-44-0	Fluoranthene	82,000 <sup>b</sup>	---- <sup>c</sup>	82,000 <sup>b</sup>	---- <sup>c</sup>	4,300 <sup>b</sup>	21,000	*
86-73-7	Fluorene	82,000 <sup>b</sup>	---- <sup>c</sup>	82,000 <sup>b</sup>	---- <sup>c</sup>	560 <sup>b</sup>	2,800	*
76-44-8	Heptachlor	1 <sup>e</sup>	11 <sup>e</sup>	28 <sup>e</sup>	16 <sup>e</sup>	23	110	*

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Exposure Route		ADL (mg/kg)
		Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	
1024-57-3	Heptachlor epoxide	0.6 <sup>e</sup>	9.2 <sup>e</sup>	2.7 <sup>b</sup>	13 <sup>e</sup>	0.7	3.3	1.005
118-74-1	Hexachlorobenzene	4 <sup>e</sup>	1.8 <sup>e</sup>	78 <sup>e</sup>	2.6 <sup>e</sup>	2	11	*
319-84-6	<i>Alpha</i> -HCH ( <i>alpha</i> -BHC)	0.9 <sup>e</sup>	1.5 <sup>e</sup>	20 <sup>e</sup>	2.1 <sup>e</sup>	0.0005 <sup>e,f</sup>	0.003	0.0074
58-89-9	<i>Gamma</i> -HCH (Lindane) <sup>n</sup>	4 <sup>e</sup>	----- <sup>c</sup>	96 <sup>e</sup>	----- <sup>c</sup>	0.009	0.047	*
77-47-4	Hexachlorocyclopentadiene	14,000 <sup>b</sup>	16 <sup>b</sup>	14,000 <sup>b</sup>	1.1 <sup>b</sup>	400	2,200 <sup>d</sup>	*
67-72-1	Hexachloroethane	2,000 <sup>b</sup>	----- <sup>c</sup>	2,000 <sup>b</sup>	----- <sup>c</sup>	0.5 <sup>b</sup>	2.6	*
193-39-5	Indeno(1,2,3- <i>c,d</i> )pyrene	8 <sup>e</sup>	----- <sup>c</sup>	170 <sup>e</sup>	----- <sup>c</sup>	14	69	*
78-59-1	Isophorone	410,000 <sup>b</sup>	4,600 <sup>d</sup>	410,000 <sup>b</sup>	4,600 <sup>d</sup>	8 <sup>b</sup>	8	*
72-43-5	Methoxychlor <sup>o</sup>	10,000 <sup>b</sup>	----- <sup>c</sup>	1,000 <sup>b</sup>	----- <sup>c</sup>	160	780	*
74-83-9	Methyl bromide (Bromomethane)	2,900 <sup>b</sup>	15 <sup>b</sup>	1,000 <sup>b</sup>	3.9 <sup>b</sup>	0.2 <sup>b</sup>	1.2	*

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Exposure Route		ADL (mg/kg)
		Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	Values		
				Industrial-Commercial	Construction Worker	Class I (mg/kg)	Class II (mg/kg)	
1634-04-4	<del>Methyl tert-butyl ether</del> Methyl tertiary-butyl ether	20,000 <sup>b</sup>	8,800 <sup>d</sup>	2,000 <sup>b</sup>	140 <sup>b</sup>	0.32	0.32	*
75-09-2	Methylene chloride (Dichloromethane)	760 <sup>e</sup>	24 <sup>e</sup>	12,000 <sup>b</sup>	34 <sup>e</sup>	0.02 <sup>e</sup>	0.2	*
95-48-7	2-Methylphenol ( <i>o</i> -Cresol)	100,000 <sup>b</sup>	----- <sup>c</sup>	100,000 <sup>b</sup>	----- <sup>c</sup>	15 <sup>b</sup>	15	*
86-30-6	<i>N</i> -Nitrosodiphenylamine	1,200 <sup>e</sup>	----- <sup>c</sup>	25,000 <sup>e</sup>	----- <sup>c</sup>	1 <sup>e</sup>	5.6	*
621-64-7	<i>N</i> -Nitrosodi- <i>n</i> -propylamine	0.8 <sup>e</sup>	----- <sup>c</sup>	18 <sup>e</sup>	----- <sup>c</sup>	0.00005 <sup>e,f</sup>	0.00005	0.0018
91-20-3	Naphthalene	41,000 <sup>b</sup>	270 <sup>b</sup>	4,100 <sup>b</sup>	1.8 <sup>b</sup>	12 <sup>b</sup>	18	*
98-95-3	Nitrobenzene	1,000 <sup>b</sup>	140 <sup>b</sup>	1,000 <sup>b</sup>	9.4 <sup>b</sup>	0.1 <sup>b,f</sup>	0.1	0.26
108-95-2	Phenol	1,000,000 <sup>b</sup>	----- <sup>c</sup>	120,000 <sup>b</sup>	----- <sup>c</sup>	100 <sup>b</sup>	100	*
1918-02-1	Picloram <sup>o</sup>	140,000 <sup>b</sup>	----- <sup>c</sup>	14,000 <sup>b</sup>	----- <sup>c</sup>	2	20	NA
1336-36-3	Polychlorinated biphenyls (PCBs) <sup>n</sup>	1 <sup>h</sup>	----- <sup>c,h</sup>	1 <sup>h</sup>	----- <sup>c,h</sup>	----- <sup>h</sup>	----- <sup>h</sup>	*
129-00-0	Pyrene	61,000 <sup>b</sup>	----- <sup>c</sup>	61,000 <sup>b</sup>	----- <sup>c</sup>	4,200 <sup>b</sup>	21,000	*

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Exposure Route		ADL (mg/kg)
		Industrial-Commercial	Inhalation (mg/kg)	Construction Worker	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	
122-34-9	Simazine <sup>o</sup>	10,000 <sup>b</sup>	----- <sup>c</sup>	1,000 <sup>b</sup>	----- <sup>c</sup>	0.04	0.37	NA
100-42-5	Styrene	410,000 <sup>b</sup>	1,500 <sup>d</sup>	41,000 <sup>b</sup>	430 <sup>b</sup>	4	18	*
127-18-4	Tetrachloroethylene (Perchloroethylene)	110 <sup>e</sup>	20 <sup>e</sup>	2,400 <sup>e</sup>	28 <sup>e</sup>	0.06	0.3	*
108-88-3	Toluene	410,000 <sup>b</sup>	650 <sup>d</sup>	410,000 <sup>b</sup>	42 <sup>b</sup>	12	29	*
8001-35-2	Toxaphene <sup>n</sup>	5.2 <sup>e</sup>	170 <sup>e</sup>	110 <sup>e</sup>	240 <sup>e</sup>	31	150	*
120-82-1	1,2,4-Trichlorobenzene	20,000 <sup>b</sup>	3,200 <sup>d</sup>	2,000 <sup>b</sup>	920 <sup>b</sup>	5	53	*
71-55-6	1,1,1-Trichloroethane	----- <sup>c</sup>	1,200 <sup>d</sup>	----- <sup>c</sup>	1,200 <sup>d</sup>	2	9.6	*
79-00-5	1,1,2-Trichloroethane	8,200 <sup>b</sup>	1,800 <sup>d</sup>	8,200 <sup>b</sup>	1,800 <sup>d</sup>	0.02	0.3	*
79-01-6	Trichloroethylene	520 <sup>e</sup>	8.9 <sup>e</sup>	1,200 <sup>b</sup>	12 <sup>e</sup>	0.06	0.3	*
108-05-4	Vinyl acetate	1,000,000 <sup>b</sup>	1,600 <sup>b</sup>	200,000 <sup>b</sup>	10 <sup>b</sup>	170 <sup>b</sup>	170	*

		Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Exposure Route		
		Industrial-Commercial		Construction Worker		Values		
CAS No.	Chemical Name	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	7.9 <sup>e</sup>	1.1 <sup>e</sup>	170 <sup>e</sup>	1.1 <sup>b</sup>	0.01 <sup>f</sup>	0.07	*
108-38-3	m-Xylene	1,000,000	420 <sup>d</sup>	410,000 <sup>b</sup>	420 <sup>d</sup>	210	210	*
95-47-6	o-Xylene	1,000,000	410 <sup>d</sup>	410,000 <sup>b</sup>	410 <sup>d</sup>	190	190	*
106-42-3	p-Xylene	1,000,000	460 <sup>d</sup>	410,000 <sup>b</sup>	460 <sup>d</sup>	200	200	*
1330-20-7	Xylenes (total)	1,000,000 <sup>b</sup>	320 <sup>d</sup>	410,000 <sup>b</sup>	320 <sup>d</sup>	150	150	*
	<b>Ionizable Organics</b>							
65-85-0	Benzoic Acid	1,000,000 <sup>b</sup>	----- <sup>c</sup>	820,000 <sup>b</sup>	----- <sup>c</sup>	400 <sup>b,i</sup>	400 <sup>i</sup>	*
95-57-8	2-Chlorophenol	10,000 <sup>b</sup>	53,000 <sup>d</sup>	10,000 <sup>b</sup>	53,000 <sup>d</sup>	4 <sup>b,i</sup>	20 <sup>i</sup>	*
120-83-2	2,4-Dichlorophenol	6,100 <sup>b</sup>	----- <sup>c</sup>	610 <sup>b</sup>	----- <sup>c</sup>	1 <sup>b,i</sup>	1 <sup>i</sup>	*
51-28-5	2,4-Dinitrophenol	4,100 <sup>b</sup>	----- <sup>c</sup>	410 <sup>b</sup>	----- <sup>c</sup>	0.2 <sup>b,f,i</sup>	0.2 <sup>i</sup>	3.3
88-85-7	Dinoseb <sup>o</sup>	2,000 <sup>b</sup>	----- <sup>c</sup>	200 <sup>b</sup>	----- <sup>c</sup>	0.34 <sup>b,i</sup>	3.4 <sup>i</sup>	*

		Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Exposure Route		
		Industrial-Commercial		Construction Worker		Values		
CAS No.	Chemical Name	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 <sup>e,j</sup>	----- <sup>c</sup>	520 <sup>e,j</sup>	----- <sup>c</sup>	0.03 <sup>f,i</sup>	0.14 <sup>i</sup>	*
93-72-1	2,4,5-TP (Silvex)	16,000 <sup>b</sup>	----- <sup>c</sup>	1,600 <sup>b</sup>	----- <sup>c</sup>	11 <sup>i</sup>	55 <sup>i</sup>	*
95-95-4	2,4,5-Trichlorophenol	200,000 <sup>b</sup>	----- <sup>c</sup>	200,000 <sup>b</sup>	----- <sup>c</sup>	270 <sup>b,i</sup>	1,400 <sup>i</sup>	*
88-06-2	2,4,6-Trichlorophenol	520 <sup>e</sup>	390 <sup>e</sup>	11,000 <sup>e</sup>	540 <sup>e</sup>	0.2 <sup>e,f,i</sup>	0.77 <sup>i</sup>	0.66

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		Class I (mg/L)	Class II (mg/L)	
		Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)			
	<b>Inorganics</b>							
7440-36-0	Antimony	820 <sup>b</sup>	----- <sup>c</sup>	82 <sup>b</sup>	----- <sup>c</sup>	0.006 <sup>m</sup>	0.024 <sup>m</sup>	*
7440-38-2	Arsenic <sup>l,n</sup>	<sup>t</sup>	1,200 <sup>e</sup>	61 <sup>b</sup>	25,000 <sup>e</sup>	0.05 <sup>m</sup>	0.2 <sup>m</sup>	*
7440-39-3	Barium	140,000 <sup>b</sup>	910,000 <sup>b</sup>	14,000 <sup>b</sup>	870,000 <sup>b</sup>	2.0 <sup>m</sup>	2.0 <sup>m</sup>	*
7440-41-7	Beryllium	4,100 <sup>b</sup>	2,100 <sup>e</sup>	410 <sup>b</sup>	44,000 <sup>e</sup>	0.004 <sup>m</sup>	0.5 <sup>m</sup>	*
7440-42-8	Boron	180,000 <sup>b</sup>	1,000,000	18,000 <sup>b</sup>	1,000,000	2.0 <sup>m</sup>	2.0 <sup>m</sup>	*
7440-43-9	Cadmium <sup>l,n</sup>	2,000 <sup>b,r</sup>	2,800 <sup>e</sup>	200 <sup>b,r</sup>	59,000 <sup>e</sup>	0.005 <sup>m</sup>	0.05 <sup>m</sup>	*
16887-00-6	Chloride	----- <sup>c</sup>	----- <sup>c</sup>	----- <sup>c</sup>	----- <sup>c</sup>	200 <sup>m</sup>	200 <sup>m</sup>	*
7440-47-3	Chromium, total	6,100 <sup>b</sup>	420 <sup>e</sup>	4,100 <sup>b</sup>	690 <sup>b</sup>	0.1 <sup>m</sup>	1.0 <sup>m</sup>	*
16065-83-1	Chromium, ion, trivalent	1,000,000 <sup>b</sup>	----- <sup>c</sup>	310,000 <sup>b</sup>	----- <sup>c</sup>	----- <sup>g</sup>	----- <sup>g</sup>	*
18540-29-9	Chromium, ion, hexavalent	6,100 <sup>b</sup>	420 <sup>e</sup>	4,100 <sup>b</sup>	690 <sup>b</sup>	-----	-----	*



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		Class I (mg/L)	Class II (mg/L)	
		Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)			
7440-48-4	Cobalt	120,000 <sup>b</sup>	----- <sup>c</sup>	12,000 <sup>b</sup>	----- <sup>c</sup>	1.0 <sup>m</sup>	1.0 <sup>m</sup>	*
7440-50-8	Copper <sup>n</sup>	82,000 <sup>b</sup>	----- <sup>c</sup>	8,200 <sup>b</sup>	----- <sup>c</sup>	0.65 <sup>m</sup>	0.65 <sup>m</sup>	*
57-12-5	Cyanide (amenable)	41,000 <sup>b</sup>	----- <sup>c</sup>	4,100 <sup>b</sup>	----- <sup>c</sup>	0.2 <sup>q,m</sup>	0.6 <sup>q,m</sup>	*
7782-41-4	Fluoride	120,000 <sup>b</sup>	----- <sup>c</sup>	12,000 <sup>b</sup>	----- <sup>c</sup>	4.0 <sup>m</sup>	4.0 <sup>m</sup>	*
15438-31-0	Iron	----- <sup>c</sup>	----- <sup>c</sup>	----- <sup>c</sup>	----- <sup>c</sup>	5.0 <sup>m</sup>	5.0 <sup>m</sup>	*
7439-92-1	Lead	400 <sup>k</sup>	----- <sup>c</sup>	400 <sup>k</sup>	----- <sup>c</sup>	0.0075 <sup>m</sup>	0.1 <sup>m</sup>	*
7439-96-5	Manganese	96,000 <sup>b</sup>	91,000 <sup>b</sup>	9,600 <sup>b</sup>	8,700 <sup>b</sup>	0.15 <sup>m</sup>	10.0 <sup>m</sup>	*
7439-97-6	Mercury <sup>l,n,s</sup>	610 <sup>b</sup>	540,000 <sup>b</sup>	61 <sup>b</sup>	52,000 <sup>b</sup>	0.002 <sup>m</sup>	0.01 <sup>m</sup>	*
7440-02-0	Nickel <sup>l</sup>	41,000 <sup>b</sup>	21,000 <sup>e</sup>	4,100 <sup>b</sup>	440,000 <sup>e</sup>	0.1 <sup>m</sup>	2.0 <sup>m</sup>	*
14797-55-8	Nitrate as N <sup>p</sup>	1,000,000 <sup>b</sup>	----- <sup>c</sup>	330,000 <sup>b</sup>	----- <sup>c</sup>	10.0 <sup>q</sup>	100 <sup>q</sup>	*
7782-49-2	Selenium <sup>l,n</sup>	10,000 <sup>b</sup>	----- <sup>c</sup>	1,000 <sup>b</sup>	----- <sup>c</sup>	0.05 <sup>m</sup>	0.05 <sup>m</sup>	*

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		Class I (mg/L)	Class II (mg/L)	
		Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)			
7440-22-4	Silver	10,000 <sup>b</sup>	----- <sup>c</sup>	1,000 <sup>b</sup>	----- <sup>c</sup>	0.05 <sup>m</sup>	-----	*
14808-79-8	Sulfate	----- <sup>c</sup>	----- <sup>c</sup>	----- <sup>c</sup>	----- <sup>c</sup>	400 <sup>m</sup>	400 <sup>m</sup>	*
7440-28-0	Thallium	160 <sup>b,u</sup>	----- <sup>c</sup>	160 <sup>b,u</sup>	----- <sup>c</sup>	0.002 <sup>m</sup>	0.02 <sup>m</sup>	*
7440-62-2	Vanadium	14,000 <sup>b</sup>	----- <sup>c</sup>	1,400 <sup>b</sup>	----- <sup>c</sup>	0.049 <sup>m</sup>	0.1 <sup>m</sup>	*
7440-66-6	Zinc <sup>1</sup>	610,000 <sup>b</sup>	----- <sup>c</sup>	61,000 <sup>b</sup>	----- <sup>c</sup>	5.0 <sup>m</sup>	10 <sup>m</sup>	*

"\*" 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)

- <sup>a</sup> Soil remediation objectives based on human health criteria only.
- <sup>b</sup> Calculated values correspond to a target hazard quotient of 1.
- <sup>c</sup> No toxicity criteria available for this route of exposure.
- <sup>d</sup> Soil saturation concentration ( $C_{\text{sat}}$ ) = 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.
- <sup>e</sup> Calculated values correspond to a cancer risk level of 1 in 1,000,000.
- <sup>f</sup> Level is at or below Contract Laboratory Program required quantitation limit for Regular Analytical Services (RAS).
- <sup>g</sup> Chemical-specific properties are such that this route is not of concern at any soil contaminant concentration.
- <sup>h</sup> 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.
- <sup>i</sup> 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.
- <sup>j</sup> Ingestion soil remediation objective adjusted by a factor of 0.5 to account for dermal route.
- <sup>k</sup> 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.
- <sup>l</sup> Potential for soil-plant-human exposure.
- <sup>m</sup> 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.
- <sup>n</sup> The Agency reserves the right to evaluate the potential for remaining contaminant concentrations to pose significant threats to crops, livestock, or wildlife.
- <sup>o</sup> For agrichemical 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.
- <sup>p</sup> For agrichemical 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.
- <sup>q</sup> The TCLP extraction must be done using water at a pH of 7.0.
- <sup>r</sup> Value based on dietary Reference Dose.
- <sup>s</sup> 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).
- <sup>t</sup> For the ingestion route for arsenic for industrial/commercial, see 742.Appendix A, Table G.
- <sup>u</sup> Value based on Reference Dose for Thallium sulfate (CAS No. 7446-18-6).
- <sup>v</sup> Calculated values correspond to soil concentrations that should not result in air concentrations that exceed criteria for workplace air.

(Source: Amended at 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 <sup>c</sup>	0.01 <sup>c</sup>
116-06-3	Aldicarb	0.003 <sup>c</sup>	0.015 <sup>c</sup>
309-00-2	Aldrin	0.014 <sup>a</sup>	0.07
120-12-7	Anthracene	2.1	10.5
1912-24-9	Atrazine	0.003 <sup>c</sup>	0.015 <sup>c</sup>
71-43-2	Benzene	0.005 <sup>c</sup>	0.025 <sup>c</sup>
56-55-3	Benzo( <i>a</i> )anthracene	0.00013 <sup>a</sup>	0.00065
205-99-2	Benzo( <i>b</i> )fluoranthene	0.00018 <sup>a</sup>	0.0009
207-08-9	Benzo( <i>k</i> )fluoranthene	0.00017 <sup>a</sup>	0.00085
50-32-8	Benzo( <i>a</i> )pyrene	0.0002 <sup>a,c</sup>	0.002 <sup>c</sup>
111-44-4	Bis(2-chloroethyl)ether	0.01 <sup>a</sup>	0.01
117-81-7	Bis(2-ethylhexyl)phthalate (Di(2-ethylhexyl)phthalate)	0.006 <sup>c</sup>	0.06 <sup>c</sup>
75-27-4	Bromodichloromethane (Dichlorobromomethane)	0.0002 <sup>a</sup>	0.0002
75-25-2	Bromoform	0.001 <sup>a</sup>	0.001
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 <sup>c</sup>	0.2 <sup>c</sup>
75-15-0	Carbon disulfide	0.7	3.5
56-23-5	Carbon tetrachloride	0.005 <sup>c</sup>	0.025 <sup>c</sup>
57-74-9	Chlordane	0.002 <sup>c</sup>	0.01 <sup>c</sup>

CAS No.	Chemical Name	Groundwater Remediation Objective	
		Class I (mg/L)	Class II (mg/L)
108-90-7	Chlorobenzene (Monochlorobenzene)	0.1 <sup>c</sup>	0.5 <sup>c</sup>
124-48-1	Chlorodibromomethane (Dibromochloromethane)	0.14	0.14
67-66-3	Chloroform	0.0002 <sup>a</sup>	0.001
218-01-9	Chrysene	0.0015 <sup>a</sup>	0.0075
94-75-7	2,4-D	0.07 <sup>c</sup>	0.35 <sup>c</sup>
75-99-0	Dalapon	0.2 <sup>c</sup>	2.0 <sup>c</sup>
72-54-8	DDD	0.014 <sup>a</sup>	0.07
72-55-9	DDE	0.01 <sup>a</sup>	0.05
50-29-3	DDT	0.006 <sup>a</sup>	0.03
53-70-3	Dibenzo( <i>a,h</i> )anthracene	0.0003 <sup>a</sup>	0.0015
96-12-8	1,2-Dibromo-3-chloropropane	0.0002 <sup>c</sup>	0.0002 <sup>c</sup>
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	0.00005 <sup>c</sup>	0.0005 <sup>c</sup>
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 <sup>c</sup>	1.5 <sup>c</sup>
106-46-7	1,4-Dichlorobenzene ( <i>p</i> – Dichlorobenzene)	0.075 <sup>c</sup>	0.375 <sup>c</sup>
91-94-1	3,3'-Dichlorobenzidine	0.02 <sup>a</sup>	0.1
75-34-3	1,1-Dichloroethane	0.7	3.5
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	0.005 <sup>c</sup>	0.025 <sup>c</sup>
75-35-4	1,1-Dichloroethylene <sup>b</sup>	0.007 <sup>c</sup>	0.035 <sup>c</sup>
156-59-2	<i>cis</i> -1,2-Dichloroethylene	0.07 <sup>c</sup>	0.2 <sup>c</sup>
156-60-5	<i>trans</i> -1,2-Dichloroethylene	0.1 <sup>c</sup>	0.5 <sup>c</sup>
78-87-5	1,2-Dichloropropane	0.005 <sup>c</sup>	0.025 <sup>c</sup>
542-75-6	1,3-Dichloropropene (1,3-Dichloropropylene, <i>cis</i> + <i>trans</i> )	0.001 <sup>a</sup>	0.005

CAS No.	Chemical Name	Groundwater Remediation Objective	
		Class I (mg/L)	Class II (mg/L)
60-57-1	Dieldrin	0.009 <sup>a</sup>	0.045
84-66-2	Diethyl phthalate	5.6	5.6
121-14-2	2,4-Dinitrotoluene <sup>a</sup>	0.00002 <sup>a</sup>	0.00002
606-20-2	2,6-Dinitrotoluene <sup>a</sup>	0.00031 <sup>a</sup>	0.00031
88-85-7	Dinoseb	0.007 <sup>c</sup>	0.07 <sup>c</sup>
117-84-0	Di- <i>n</i> -octyl phthalate	0.14	0.7
115-29-7	Endosulfan	0.042	0.21
145-73-3	Endothall	0.1 <sup>c</sup>	0.1 <sup>c</sup>
72-20-8	Endrin	0.002 <sup>c</sup>	0.01 <sup>c</sup>
100-41-4	Ethylbenzene	0.7 <sup>c</sup>	1.0 <sup>c</sup>
206-44-0	Fluoranthene	0.28	1.4
86-73-7	Fluorene	0.28	1.4
76-44-8	Heptachlor	0.0004 <sup>c</sup>	0.002 <sup>c</sup>
1024-57-3	Heptachlor epoxide	0.0002 <sup>c</sup>	0.001 <sup>c</sup>
118-74-1	Hexachlorobenzene	0.00006 <sup>a</sup>	0.0003
319-84-6	<i>alpha</i> -HCH ( <i>alpha</i> -BHC)	0.00011 <sup>a</sup>	0.00055
58-89-9	<i>Gamma</i> -HCH (Lindane)	0.0002 <sup>c</sup>	0.001 <sup>c</sup>
77-47-4	Hexachlorocyclopentadiene	0.05 <sup>c</sup>	0.5 <sup>c</sup>
67-72-1	Hexachloroethane	0.007	0.035
193-39-5	Indeno(1,2,3- <i>c,d</i> )pyrene	0.00043 <sup>a</sup>	0.00215
78-59-1	Isophorone	1.4	1.4
72-43-5	Methoxychlor	0.04 <sup>c</sup>	0.2 <sup>c</sup>
74-83-9	Methyl bromide (Bromomethane)	0.0098	0.049
1634-04-4	<del>Methyl tert butyl ether</del> Methyl tertiary-butyl ether	<u>0.07</u>	<u>0.07</u>
75-09-2	Methylene chloride (Dichloromethane)	0.005 <sup>c</sup>	0.05 <sup>c</sup>
91-20-3	Naphthalene	0.14	0.22
98-95-3	Nitrobenzene <sup>b</sup>	0.0035	0.0035

		Groundwater Remediation Objective	
CAS No.	Chemical Name	Class I (mg/L)	Class II (mg/L)
86-30-6	<i>N</i> -Nitrosodiphenylamine	0.0032 <sup>a</sup>	0.016
621-64-7	<i>N</i> -Nitrosodi- <i>n</i> -propylamine	0.0018 <sup>a</sup>	0.0018
87-86-5	Pentachlorophenol	0.001 <sup>c</sup>	0.005 <sup>c</sup>
108-95-2	Phenol	0.1 <sup>c</sup>	0.1 <sup>c</sup>
1918-02-1	Picloram	0.5 <sup>c</sup>	5.0 <sup>c</sup>
1336-36-3	Polychlorinated biphenyls (PCBs)	0.0005 <sup>c</sup>	0.0025 <sup>c</sup>
129-00-0	Pyrene	0.21	1.05
122-34-9	Simazine	0.004 <sup>c</sup>	0.04 <sup>c</sup>
100-42-5	Styrene	0.1 <sup>c</sup>	0.5 <sup>c</sup>
93-72-1	2,4,5-TP (Silvex)	0.05 <sup>c</sup>	0.25 <sup>c</sup>
127-18-4	Tetrachloroethylene (Perchloroethylene)	0.005 <sup>c</sup>	0.025 <sup>c</sup>
108-88-3	Toluene	1.0 <sup>c</sup>	2.5 <sup>c</sup>
8001-35-2	Toxaphene	0.003 <sup>c</sup>	0.015 <sup>c</sup>
120-82-1	1,2,4-Trichlorobenzene	0.07 <sup>c</sup>	0.7 <sup>c</sup>
71-55-6	1,1,1-Trichloroethane <sup>b</sup>	0.2 <sup>c</sup>	1.0 <sup>c</sup>
79-00-5	1,1,2-Trichloroethane	0.005 <sup>c</sup>	0.05 <sup>c</sup>
79-01-6	Trichloroethylene	0.005 <sup>c</sup>	0.025 <sup>c</sup>
108-05-4	Vinyl acetate	7.0	7.0
75-01-4	Vinyl chloride	0.002 <sup>c</sup>	0.01 <sup>c</sup>
1330-20-7	Xylenes (total)	10.0 <sup>c</sup>	10.0 <sup>c</sup>
	<b>Ionizable Organics</b>		
65-85-0	Benzoic Acid	28	28
106-47-8	4-Chloroaniline ( <i>p</i> -Chloroaniline)	0.028	0.028
95-57-8	2-Chlorophenol	0.035	0.175
120-83-2	2,4-Dichlorophenol	0.021	0.021
105-67-9	2,4-Dimethylphenol	0.14	0.14
51-28-5	2,4-Dinitrophenol	0.014	0.014
95-48-7	2-Methylphenol ( <i>o</i> - Cresol)	0.35	0.35

Groundwater Remediation Objective

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



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

Chemical Name and Groundwater Remediation Objective Notations

<sup>a</sup> The groundwater remediation\_objective is equal to the ADL for carcinogens according to the procedures specified in 35 Ill. Adm. Code 620.

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

<sup>c</sup> 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 at 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 <sub>obj</sub> Concentration used to Calculate Tier 1 Soil Remediation Objectives <sup>a</sup>	
		Class I (mg/L)	Class II (mg/L)
83-32-9	Acenaphthene	2.0 <sup>b</sup>	10
67-64-1	Acetone	4.0 <sup>b</sup>	4.0
15972-60-8	Alachlor	0.002 <sup>c</sup>	0.01 <sup>c</sup>
116-06-3	Aldicarb	0.003 <sup>c</sup>	0.015 <sup>c</sup>
309-00-2	Aldrin	5.0E-6 <sup>b</sup>	2.5E-5
120-12-7	Anthracene	10 <sup>b</sup>	50
1912-24-9	Atrazine	0.003 <sup>c</sup>	0.015 <sup>c</sup>
71-43-2	Benzene	0.005 <sup>c</sup>	0.025 <sup>c</sup>
56-55-3	Benzo( <i>a</i> )anthracene	0.0001 <sup>b</sup>	0.0005
205-99-2	Benzo( <i>b</i> )fluoranthene	0.0001 <sup>b</sup>	0.0005
207-08-9	Benzo( <i>k</i> )fluoranthene	0.001 <sup>b</sup>	0.005
50-32-8	Benzo( <i>a</i> )pyrene	0.0002 <sup>a,c</sup>	0.002 <sup>c</sup>
111-44-4	Bis(2-chloroethyl)ether	8.0E-5 <sup>b</sup>	8.0E-5
117-81-7	Bis(2-ethylhexyl)phthalate (Di(2-ethylhexyl)phthalate)	0.006 <sup>a,c</sup>	0.06 <sup>c</sup>
75-27-4	Bromodichloromethane (Dichlorobromomethane)	0.1 <sup>b</sup>	0.1
75-25-2	Bromoform	0.1 <sup>b</sup>	0.01
71-36-3	Butanol	4.0 <sup>b</sup>	4.0
85-68-7	Butyl benzyl phthalate	7.0 <sup>b</sup>	35
86-74-8	Carbazole	0.004 <sup>b</sup>	0.02
1563-66-2	Carbofuran	0.04 <sup>c</sup>	0.2 <sup>c</sup>
75-15-0	Carbon disulfide	4.0 <sup>b</sup>	20
56-23-5	Carbon tetrachloride	0.005 <sup>c</sup>	0.025 <sup>c</sup>
57-74-9	Chlordane	0.002 <sup>c</sup>	0.01 <sup>c</sup>

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

CAS No.	Chemical Name	GW <sub>obj</sub> Concentration used to Calculate Tier 1 Soil Remediation Objectives <sup>a</sup>	
		Class I (mg/L)	Class II (mg/L)
60-57-1	Dieldrin	5.0E-6 <sup>b</sup>	2.5E-5
84-66-2	Diethyl phthalate	30 <sup>b</sup>	30
121-14-2	2,4-Dinitrotoluene	0.0001 <sup>b</sup>	0.0001
606-20-2	2,6-Dinitrotoluene	0.0001	0.0001
88-85-7	Dinoseb	0.007 <sup>c</sup>	0.07 <sup>c</sup>
117-84-0	Di- <i>n</i> -octyl phthalate	0.7 <sup>b</sup>	3.5
115-29-7	Endosulfan	0.2 <sup>b</sup>	1.0
145-73-3	Endothall	0.1 <sup>c</sup>	0.1 <sup>c</sup>
72-20-8	Endrin	0.002 <sup>c</sup>	0.01 <sup>c</sup>
100-41-4	Ethylbenzene	0.7 <sup>c</sup>	1.0 <sup>c</sup>
206-44-0	Fluoranthene	1.0 <sup>b</sup>	5.0
86-73-7	Fluorene	1.0 <sup>b</sup>	5.0
76-44-8	Heptachlor	0.0004 <sup>c</sup>	0.002 <sup>c</sup>
1024-57-3	Heptachlor epoxide	0.0002 <sup>c</sup>	0.001 <sup>c</sup>
118-74-1	Hexachlorobenzene	0.001 <sup>b</sup>	0.005
319-84-6	<i>alpha</i> -HCH ( <i>alpha</i> -BHC)	1.0E-5 <sup>b</sup>	5.0E-5
58-89-9	<i>Gamma</i> -HCH (Lindane)	0.0002 <sup>c</sup>	0.001 <sup>c</sup>
77-47-4	Hexachlorocyclopentadiene	0.05 <sup>c</sup>	0.5 <sup>c</sup>
67-72-1	Hexachloroethane	0.007	0.035
193-39-5	Indeno(1,2,3- <i>c,d</i> )pyrene	0.0001 <sup>b</sup>	0.0005
78-59-1	Isophorone	1.4	1.4
72-43-5	Methoxychlor	0.04 <sup>c</sup>	0.2 <sup>c</sup>
74-83-9	Methyl bromide (Bromomethane)	0.05 <sup>b</sup>	0.25
1634-04-4	<del>Methyl tert-butyl ether</del> Methyl tertiary-butyl ether	0.07	0.07
75-09-2	Methylene chloride (Dichloromethane)	0.005 <sup>c</sup>	0.05 <sup>c</sup>
91-20-3	Naphthalene	0.14	0.22
98-95-3	Nitrobenzene	0.02 <sup>b</sup>	0.02

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

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

CAS No.	Chemical Name	GW <sub>obj</sub> Concentration used to Calculate Tier 1 Soil Remediation Objectives <sup>a</sup>	
		Class I (mg/L)	Class II (mg/L)
7440-28-0	Thallium	0.002 <sup>c</sup>	0.02 <sup>c</sup>
7440-62-2	Vanadium	0.049	0.1
7440-66-6	Zinc	5.0 <sup>c</sup>	10 <sup>c</sup>

Chemical Name and Groundwater Remediation Objective Notations

- <sup>a</sup> 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:  $C_w = DF \times GW_{obj}$ .
- <sup>b</sup> 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. 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 1 Groundwater Remediation Objectives for the Direct Ingestion of Groundwater Component of the Groundwater Ingestion Route, listed in Section 742.Appendix B, Table E.
- <sup>c</sup> 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 at 25 Ill. 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 (Di) (cm <sup>2</sup> /s)	Diffusivity in Water (D <sub>w</sub> ) (cm <sup>2</sup> /s)	Dimensionless Henry's Law Constant (H') (25°C)	Organic Carbon Partition Coefficient (K <sub>oc</sub> ) (L/kg)	First Order Degradation Constant (λ) (d <sup>-1</sup> )
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	394	No Data
116-06-3	Aldicarb	6,000	0.0305	7.19E-6	0.0000000574	12	0.00109
309-00-2	Aldrin	0.18	0.0132	4.86E-6	0.00697	2,450,000	0.00059
120-12-7	Anthracene	0.0434	0.0324	7.74E-6	0.00267	29,500	0.00075
1912-24-9	Atrazine	70	0.0258	6.69E-6	0.00000005	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 (Di) (cm <sup>2</sup> /s)	Diffusivity in Water (D <sub>w</sub> ) (cm <sup>2</sup> /s)	Dimensionless Henry's Law Constant (H') (25°C)	Organic Carbon Partition Coefficient (K <sub>oc</sub> ) (L/kg)	First Order Degradation Constant (λ) (d <sup>-1</sup> )
56-55-3	Benzo(a)anthracene	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	0.00455	1,230,000	0.00057
207-08-9	Benzo(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	0.0692	7.53E-6	0.000738	15.5	0.0019
117-81-7	Bis(2-ethylhexyl)phthalate	0.34	0.0351	3.66E-6	0.00000418	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	Butyl 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	0.000000626	3,390	No Data

CAS No.	Chemical	Solubility in Water (S) (mg/L)	Diffusivity in Air (Di) (cm <sup>2</sup> /s)	Diffusivity in Water (D <sub>w</sub> ) (cm <sup>2</sup> /s)	Dimensionless Henry's Law Constant (H') (25°C)	Organic Carbon Partition Coefficient (K <sub>oc</sub> ) (L/kg)	First Order Degradation Constant (λ) (d <sup>-1</sup> )
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	45.7	No Data
56-23-5	Carbon Tetrachloride	793	0.0780	8.80E-6	1.25	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	1.01E-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	4,4'-DDD	0.09	0.0169	4.76E-6	0.000164	1,000,000	0.000062

CAS No.	Chemical	Solubility in Water (S) (mg/L)	Diffusivity in Air (Di) (cm <sup>2</sup> /s)	Diffusivity in Water (D <sub>w</sub> ) (cm <sup>2</sup> /s)	Dimensionless Henry's Law Constant (H') (25°C)	Organic Carbon Partition Coefficient (K <sub>oc</sub> ) (L/kg)	First Order Degradation Constant (λ) (d <sup>-1</sup> )
72-55-9	4,4'-DDE	0.12	0.0144	5.87E-6	0.000861	4,470,000	0.000062
50-29-3	4,4'-DDT	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	0.00000264	5.8	0.005775
53-70-3	Dibenzo(a,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	0.001925
106-93-4	1,2-Dibromoethane	4,200	0.0287	8.06E-6	0.0303	93	0.005775
84-74-2	Di-n-butyl Phthalate	11.2	0.0438	7.86E-6	0.0000000385	33,900	0.03013
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 (Di) (cm <sup>2</sup> /s)	Diffusivity in Water (D <sub>w</sub> ) (cm <sup>2</sup> /s)	Dimensionless Henry's Law Constant (H') (25°C)	Organic Carbon Partition Coefficient (K <sub>oc</sub> ) (L/kg)	First Order Degradation Constant (λ) (d <sup>-1</sup> )
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	1.04E-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	0.0626	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	0.0000185	288	0.00619
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	0.0000182	0.01	0.00132

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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	Dinoseb	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	83,200,000	0.0019
115-29-7	Endosulfan	0.51	0.0115	4.55E-6	0.000459	2,140	0.07629
145-73-3	Endothall	21,000	0.0291	8.07E-6	0.0000000107	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	1.98	0.0363	7.88E-6	0.00261	13,800	0.000691
76-44-8	Heptachlor	0.18	0.0112	5.69E-6	60.7	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 (Di) (cm <sup>2</sup> /s)	Diffusivity in Water (D <sub>w</sub> ) (cm <sup>2</sup> /s)	Dimensionless Henry's Law Constant (H') (25°C)	Organic Carbon Partition Coefficient (K <sub>oc</sub> ) (L/kg)	First Order Degradation Constant (λ) (d <sup>-1</sup> )
118-74-1	Hexachlorobenzene	6.2	0.0542	5.91E-6	0.0541	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	Hexachlorocyclo-Pentadiene	1.8	0.0161	7.21E-6	1.11	200,000	0.012
67-72-1	Hexachloroethane	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	3,470,000	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
72-43-5	Methoxychlor	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
<u>1634-04-4</u>	<u>Methyl tert-butyl ether</u> <u>Methyl tertiary-butyl ether</u>	<u>51.000</u>	<u>0.102</u>	<u>1.10E-5</u>	<u>0.0241</u>	<u>11.5</u>	<u>No Data</u>
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	0.0000492	91.2	0.0495

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91-20-3	Naphthalene	31.0	0.0590	7.50E-6	0.0198	2,000	0.0027
98-95-3	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	0.0000923	24.0	0.0019
87-86-5	Pentachlorophenol	1,950	0.0560	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	0.00000000166	1.98	No Data
1336-36-3	Polychlorinated biphenyls (PCBs)	0.7	----- <sup>a</sup>	----- <sup>a</sup>	----- <sup>a</sup>	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	0.0000000032	5,440	No Data

CAS No.	Chemical	Solubility in Water (S) (mg/L)	Diffusivity in Air (Di) (cm <sup>2</sup> /s)	Diffusivity in Water (D <sub>w</sub> ) (cm <sup>2</sup> /s)	Dimensionless Henry's Law Constant (H') (25°C)	Organic Carbon Partition Coefficient (K <sub>oc</sub> ) (L/kg)	First Order Degradation Constant (λ) (d <sup>-1</sup> )
127-18-4	Tetrachloroethylene	200	0.0720	8.20E-6	0.754	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	0.0300	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	0.0374	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	0.0318	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	7.80E-6	0.301	407	0.0019



CAS No.	Chemical	Solubility in Water (S) (mg/L)	Diffusivity in Air (D <sub>i</sub> ) (cm <sup>2</sup> /s)	Diffusivity in Water (D <sub>w</sub> ) (cm <sup>2</sup> /s)	Dimensionless Henry's Law Constant (H') (25°C)	Organic Carbon Partition Coefficient (K <sub>oc</sub> ) (L/kg)	First Order Degradation Constant (λ) (d <sup>-1</sup> )
95-47-6	o-Xylene	178	0.087	1.00E-5	0.213	363	0.0019
106-42-3	p-Xylene	185	0.0769	8.44E-6	0.314	389	0.0019
1330-20-7	Xylenes (total)	186	0.0720	9.34E-6	0.25	260	0.0019

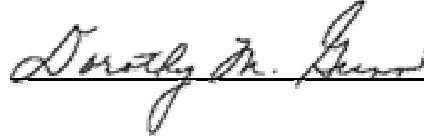
Chemical Abstracts Service (CAS) registry number. This number in the format xxx-xx-x, is unique for each chemical and allows efficient searching on computerized data bases.

\*Soil Remediation objectives are determined pursuant to 40 CFR 761, as incorporated by reference at Section 732.104 (the USEPA "PCB Spill Cleanup Policy"), for most sites; persons remediating sites should consult with BOL if calculation of Tier 2 soil remediation objectives is desired.

(Source: Amended at 25 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above opinion and order December 6, 2001, by a vote of 5-0.

A handwritten signature in cursive script, reading "Dorothy M. Gunn", is written over a horizontal line.

Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board