**Section 742.APPENDIX B Tier 1 Illustrations and Tables**

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

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | GWobj Concentration used to Calculate  Tier 1 Soil Remediation Objectivesa | |
| CAS No. | Chemical Name | Class I  (mg/L) | Class II  (mg/L) |
|  | **Organics** |  |  |
| 83-32-9 | Acenaphthene | 2.0b | 10 |
| 67-64-1 | Acetone | 6.3 | 6.3 |
| 15972-60-8 | Alachlor | 0.002c | 0.01c |
| 116-06-3 | Aldicarb | 0.003c | 0.015c |
| 309-00-2 | Aldrin | 5.0E-6b | 2.5E-5 |
| 120-12-7 | Anthracene | 10b | 50 |
| 1912-24-9 | Atrazine | 0.003c | 0.015c |
| 71-43-2 | Benzene | 0.005c | 0.025c |
| 56-55-3 | Benzo(*a*)anthracene | 0.0001b | 0.0005 |
| 205-99-2 | Benzo(*b*)fluoranthene | 0.0001b | 0.0005 |
| 207-08-9 | Benzo(*k*)fluroanthene | 0.001b | 0.005 |
| 50-32-8 | Benzo(*a*)pyrene | 0.0002a,c | 0.002c |
| 65-85-0 | Benzoic Acid | 100b | 100 |
| 111-44-4 | Bis(2-chloroethyl)ether | 8.0E-5b | 8.0E-5 |
| 117-81-7 | Bis(2-ethylhexyl)phthalate (Di(2-ethylhexyl)phthalate) | 0.006a,c | 0.06c |
| 75-27-4 | Bromodichloromethane  (Dichlorobromomethane) | 0.1b | 0.1 |
| 75-25-2 | Bromoform | 0.1b | 0.01 |
| 71-36-3 | Butanol | 4.0b | 4.0 |
| 85-68-7 | Butyl benzyl phthalate | 7.0b | 35 |
| 86-74-8 | Carbazole | 0.004b | 0.02 |
| 1563-66-2 | Carbofuran | 0.04c | 0.2c |
| 75-15-0 | Carbon disulfide | 4.0b | 20 |
| 56-23-5 | Carbon tetrachloride | 0.005c | 0.025c |
| 57-74-9 | Chlordane | 0.002c | 0.01c |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | GWobj Concentration used to Calculate  Tier 1 Soil Remediation Objectivesa | |
| CAS No. | Chemical Name | Class I  (mg/L) | Class II  (mg/L) |
| 106-47-8 | 4-Chloroaniline (ρ-Chloroaniline) | 0.1b | 0.1 |
| 108-90-7 | Chlorobenzene  (Monochlorobenzene) | 0.1c | 0.5c |
| 124-48-1 | Chlorodibromomethane  (Dibromochloromethane) | 0.06b | 0.06 |
| 67-66-3 | Chloroform | 0.1b | 0.5 |
| 95-57-8 | 2-Chlorophenol (pH 4.9-7.3) | 0.2b | 1.0 |
|  | 2-Chlorophenol (pH 7.4-8.0) | 0.2 | 0.2 |
| 218-01-9 | Chrysene | 0.1b | 0.05 |
| 94-75-7 | 2,4-D | 0.07c | 0.35c |
| 75-99-0 | Dalapon | 0.2c | 2.0c |
| 72-54-8 | DDD | 0.0004b | 0.002 |
| 72-55-9 | DDE | 0.0003b | 0.0015 |
| 50-29-3 | DDT | 0.0003b | 0.0015 |
| 53-70-3 | Dibenzo(*a,h*)anthracene | 1.0E-5b | 5.0E-5 |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | 0.0002c | 0.002c |
| 106-93-4 | 1,2-Dibromoethane  (Ethylene dibromide) | 0.00005a,c | 0.0005c |
| 84-74-2 | Di-*n*-butyl phthalate | 4.0b | 20 |
| 95-50-1 | 1,2-Dichlorobenzene  (*o* - Dichlorobenzene) | 0.6c | 1.5c |
| 106-46-7 | 1,4-Dichlorobenzene  (*p* - Dichlorobenzene) | 0.075c | 0.375c |
| 91-94-1 | 3,3'-Dichlorobenzidine | 0.0002b | 0.001 |
| 75-34-3 | 1,1-Dichloroethane | 4.0b | 20 |
| 107-06-2 | 1,2-Dichloroethane  (Ethylene dichloride) | 0.005c | 0.025c |
| 75-35-4 | 1,1-Dichloroethylene | 0.007c | 0.035c |
| 156-59-2 | *cis*-1,2-Dichloroethylene | 0.07c | 0.2c |
| 156-60-5 | *trans*-1,2-Dichloroethylene | 0.1c | 0.5c |
| 120-83-2 | 2,4-Dichlorophenol | 0.1b | 0.1 |
| 78-97-5 | 1,2-Dichloropropane | 0.005c | 0.025c |
| 542-75-6 | 1,3-Dichloropropene  (1,3-Dichloropropylene, *cis* + *trans*) | 0.0005b | 0.0025 |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | GWobj Concentration used to Calculate  Tier 1 Soil Remediation Objectivesa | |
| CAS No. | Chemical Name | Class I  (mg/L) | Class II  (mg/L) |
| 60-57-1 | Dieldrin | 5.0E-6b | 2.5E-5 |
| 84-66-2 | Diethyl phthalate | 30b | 30 |
| 105-67-9 | 2,4-Dimethylphenol | 0.7b | 0.7 |
| 51-28-5 | 2,4-Dinitrophenol | 0.04b | 0.04 |
| 121-14-2 | 2,4-Dinitrotoluene | 0.0001b | 0.0001 |
| 606-20-2 | 2,6-Dinitrotoluene | 0.0001 | 0.0001 |
| 88-85-7 | Dinoseb | 0.007c | 0.07c |
| 117-84-0 | Di-*n*-octyl phthalate | 0.7b | 3.5 |
| 115-29-7 | Endosulfan | 0.2b | 1.0 |
| 145-73-3 | Endothall | 0.1c | 0.1c |
| 72-20-8 | Endrin | 0.002c | 0.01c |
| 100-41-4 | Ethylbenzene | 0.7c | 1.0c |
| 206-44-0 | Fluoranthene | 1.0b | 5.0 |
| 86-73-7 | Fluorene | 1.0b | 5.0 |
| 76-44-8 | Heptachlor | 0.0004c | 0.002c |
| 1024-57-3 | Heptachlor epoxide | 0.0002c | 0.001c |
| 118-74-1 | Hexachlorobenzene | 0.001b | 0.005 |
| 319-84-6 | *alpha*-HCH (*alpha*-BHC) | 1.0E-5b | 5.0E-5 |
| 58-89-9 | *gamma*-HCH (Lindane) | 0.0002c | 0.001c |
| 77-47-4 | Hexachlorocyclopentadiene | 0.05c | 0.5c |
| 67-72-1 | Hexachloroethane | 0.007 | 0.035 |
| 193-39-5 | Indeno(1,2,3-*c,d*)pyrene | 0.0001b | 0.0005 |
| 78-59-1 | Isophorone | 1.4 | 1.4 |
| 72-43-5 | Methoxychlor | 0.04c | 0.2c |
| 74-83-9 | Methyl bromide (Bromomethane) | 0.05b | 0.25 |
| 1634-04-4 | Methyl tertiary-butyl ether | 0.07 | 0.07 |
| 75-09-2 | Methylene chloride (Dichloromethane) | 0.005c | 0.05c |
| 95-48-7 | 2-Methylphenol (*o*-Cresol) | 2.0b | 2.0 |
| 91-20-3 | Naphthalene | 0.14 | 0.22 |
| 98-95-3 | Nitrobenzene | 0.02b | 0.02 |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | GWobj Concentration used to Calculate  Tier 1 Soil Remediation Objectivesa | |
| 86-30-6 | *N*-Nitrosodiphenylamine | 0.02b | 0.1 |
| 621-64-7 | *N*-Nitrosodi-*n*-propylamine | 1.0E-5b | 1.0E-5 |
| 87-86-5 | Pentachlorophenol | 0.001a,c | 0.005c |
| 108-95-2 | Phenol | 0.1c | 0.1c |
| 1918-02-1 | Picloram | 0.5c | 5.0c |
| 1336-36-3 | Polychlorinated biphenyls (PCBs) | --- | --- |
| 129-00-0 | Pyrene | 1.0b | 5.0 |
| 122-34-9 | Simazine | 0.004c | 0.04c |
| 100-42-5 | Styrene | 0.1c | 0.5c |
| 93-72-1 | 2,4,5-TP (Silvex) | 0.05c | 0.25c |
| 127-18-4 | Tetrachloroethylene (Perchloroethylene) | 0.005c | 0.025c |
| 108-88-3 | Toluene | 1.0c | 2.5c |
| 8001-35-2 | Toxaphene | 0.003c | 0.015c |
| 120-82-1 | 1,2,4-Trichlorobenzene | 0.07c | 0.7c |
| 71-55-6 | 1,1,1-Trichloroethane2 | 0.2c | 1.0c |
| 79-00-5 | 1,1,2-Trichloroethane | 0.005c | 0.05c |
| 79-01-6 | Trichloroethylene | 0.005c | 0.025c |
| 95-95-4 | 2,4,5-Trichlorophenol (pH 4.9-7.8) | 4.0b | 20 |
|  | 2,4,5-Trichlorophenol (pH 7.9-8.0) | 4.0 | 4.0 |
| 88-06-2 | 2,4,6-Trichlorophenol (pH 4.9-6.8) | 0.008b | 0.04 |
|  | 2,4,6-Trichlorophenol (pH 6.9-8.0) | 0.008 | 0.008 |
| 108-05-4 | Vinyl acetate | 40b | 40 |
| 75-01-4 | Vinyl chloride | 0.002c | 0.01c |
| 1330-20-7 | Xylenes (total) | 10.0c | 10.0c |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | GWobj Concentration used to Calculate  Tier 1 Soil Remediation Objectivesa | |
| CAS No. | Chemical Name | Class I  (mg/L) | Class II  (mg/L) |
|  | **Inorganics** |  |  |
| 7440-36-0 | Antimony | 0.006c | 0.024c |
| 7440-38-2 | Arsenic | 0.05c | 0.2c |
| 7440-39-3 | Barium | 2.0c | 2.0c |
| 7440-41-7 | Beryllium | 0.004c | 0.5c |
| 7440-42-8 | Boron | 2.0c | 2.0c |
| 7440-43-9 | Cadmium | 0.005c | 0.05c |
| 7440-70-2 | Calcium | --- | --- |
| 16887-00-6 | Chloride | 200c | 200c |
| 7440-47-3 | Chromium, total | 0.1c | 1.0c |
| 18540-29-9 | Chromium, ion, hexavalent | --- | --- |
| 7440-48-4 | Cobalt | 1.0c | 1.0c |
| 7440-50-8 | Copper | 0.65c | 0.65c |
| 57-12-5 | Cyanide | 0.2c | 0.6c |
| 7782-41-4 | Fluoride | 4.0c | 4.0c |
| 15438-31-0 | Iron | 5.0c | 5.0c |
| 7439-92-1 | Lead | 0.0075c | 0.1c |
| 7439-95-4 | Magnesium | --- | --- |
| 7439-96-5 | Manganese | 0.15c | 10.0c |
| 7439-97-6 | Mercury | 0.002c | 0.01c |
| 7440-02-0 | Nickel | 0.1c | 2.0c |
| 14797-55-8 | Nitrate as N | 10.0c | 100c |
| 7723-14-0 | Phosphorus | --- | --- |
| 7440-09-7 | Potassium | --- | --- |
| 7782-49-2 | Selenium | 0.05c | 0.05c |
| 7440-22-4 | Silver | 0.05c | --- |
| 7440-23-5 | Sodium | --- | --- |
| 14808-79-8 | Sulfate | 400c | 400c |
| 7440-28-0 | Thallium | 0.002c | 0.02c |
| 7440-62-2 | Vanadium | 0.049 | 0.1 |
| 7440-66-6 | Zinc | 5.0c | 10c |

Chemical Name and Groundwater Remediation Objective Notations

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

b Value listed is the Water Health Based Limit (HBL) for this chemical from Soil Screening Guidance: User’s Guide, incorporated by reference at Section 742.210. 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 GWobj 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.

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

(Source: Amended at 31 Ill. Reg. 4063, effective February 23, 2007)