**Table 1. Alberta Tier 1 Soil Remediation Guidelines\***

| **Soil Type** | **Fine** | | | | | | | | | | **Coarse** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Land Use** | **Natural Area** | **Agricultural** | | **Residential/ Parkland** | | | **Commercial** | | | **Industrial** | **Natural Area** | **Agricultural** | | **Residential/ Parkland** | **Commercial** | **Industrial** | |
| **Unit (unless otherwise indicated)** | **(mg/kg)** | **(mg/kg)** | | **(mg/kg)** | | | **(mg/kg)** | | | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | |
| Boron (mg/L in saturated paste extract) | 3.3 | | 3.3 | | 3.3 | | 5.0 | | | 5.0 | 3.3 | 3.3 | | 3.3 | 5.0 | 5.0 | |
| Nickel | 45 | | 45 | | 45 | | 89 | | | 89 | 45 | 45 | | 45 | 89 | 89 | |
| Ethylbenzene | 0.073 | | 0.073 | | 0.073 | | 0.073 | | | 0.073 | 0.14 | 0.14 | | 0.14 | 0.14 | 0.14 | |
| Xylenes | 0.99 | | 0.99 | | 0.99 | | 0.99 | | | 0.99 | 1.9 | 1.9 | | 1.9 | 1.9 | 1.9 | |
| Tetrachloroethene (Tetrachloroethylene, Perchloroethylene, PCE) | 0.26 | | 0.26 | | 0.26 | | 0.26 | | | 0.26 | 0.46 | 0.018 | | 0.018 | 0.22 | 0.22 | |
| Trichloromethane (Chloroform) | 0.0029 | | 0.0029 | | 0.0029 | | 0.0029 | | | 0.0029 | 0.0030 | 0.0030 | | 0.0030 | 0.0030 | 0.0030 | |
| Methanol | 37 | | 37 | | 37 | | 37 | | | 37 | 11 | 11 | | 11 | 11 | 11 | |
| Sulfolane | 0.18 | | 0.18 | | 0.18 | 0.18 | |  | 0.18 | | 0.21 | | 0.21 | 0.21 | 0.21 | | 0.21 |

\* Revised guidelines are shown in red

**Table 2. Alberta Tier 1 Groundwater Remediation Guidelines\***

| **Soil Type** | **Fine** | | | | **Coarse** | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Land Use** | **Natural Area** | **Agricultural** | **Residential/ Parkland** | **Commercial/ Industrial** | **Natural Area** | **Agricultural** | **Residential/ Parkland** | **Commercial/ Industrial** |
| **Unit** | **(mg/L)** | **(mg/L)** | **(mg/L)** | **(mg/L)** | **(mg/L)** | **(mg/L)** | **(mg/L)** | **(mg/L)** |
| Boron | 1.5 | 1.0 | 1.5 | 1.5 | 1.5 | 1.0 | 1.5 | 1.5 |
| Ethylbenzene | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 |
| Xylenes | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
| Tetrachloroethene (Tetrachloroethylene, Perchloroethylene, PCE) | 0.010 | 0.010 | 0.010 | 0.010 | 0.010 | 0.010 | 0.010 | 0.010 |
| Methanol | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 |

\* Revised guidelines are shown in red

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table 3. Alberta Tier 1 Subsoil Remediation Guidelines (BTEX and PHCs Only)\*** | | | | | | | | | | | |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| **Soil Type** | **Fine** | | | | | **Coarse** | | | | |
| **Land Use** | **Natural Area** | **Agricultural** | **Residential/ Parkland** | **Commercial** | **Industrial** | **Natural Area** | **Agricultural** | **Residential/ Parkland** | **Commercial** | **Industrial** |
| **Unit** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** |
| Ethylbenzene | 0.073 | 0.073 | 0.073 | 0.073 | 0.073 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| Xylenes | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |

\* Revised guidelines are shown in red

**Table A-1. Surface Soil Remediation Guideline Values for Natural Area Land Use - All Exposure Pathways\***

| **Receptor** | **Overall Guideline** | | **Human** | | **Ecological** | | | | | | | | | **Other** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pathway** |  |  | **Protection of Domestic Use Aquifer** | | **Direct Soil  Contact** | | **Nutrient Energy Cycling Check** | **Livestock Soil and Food Ingestion** | **Wildlife Soil and Food Ingestion** | **Protection of Freshwater Aquatic Life** | | **Protection of  Wildlife Water** | | **Management  Limit** | |
| **Soil Type** | **Fine** | **Coarse** | **Fine** | **Coarse** | **Fine** | **Coarse** |  | **-** | **-** | **Fine** | **Coarse** | **Fine** | **Coarse** | **Fine** | **Coarse** |
| **Building Type** |  |  | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| **Unit (unless otherwise indicated)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** |
| Boron (mg/L in saturated paste extract) | 3.3 | 3.3 | 65 | 118 | 3.3 | 3.3 | - | - | - | 5.0 | 5.0 | 17 | 17 | *-* | *-* |
| Chromium (total) | 64 | 64 | - | - | 64 | 64 | - | - | - | - | - | - | - | *-* | *-* |
| Nickel | 45 | 45 | - | - | 45 | 45 | 171 | 528 | - | - | - | - | - | *-* | *-* |
| Ethylbenzene | 0.073 | 0.14 | 0.073 | 0.14 | 120 | 55 | - | 1,600 | 640 | NGR | 540 | NGR | 17,000 | - | - |
| Xylenes | 0.99 | 1.9 | 0.99 | 1.9 | 65 | 95 | - | 6,600 | 2,600 | NGR | 41 | NGR | 16,000 | - | - |
| Tetrachloroethene (Tetrachloroethylene, Perchloroethylene, PCE) | 0.26 | 0.46 | 0.26 | 0.46 | - | - | - | - | - | 0.69 | 0.77 | - | - | - | - | |
| Trichloromethane (Chloroform) | 0.0029 | 0.0030 | 0.53 | 0.88 | - | -` | - | - | - | 0.0029 | 0.0030 | - | - | - | - | |
| Methanol | 37 | 11 | 37 | 42 | 1,200 | 1,200 | - | - | - | 300 | 11 | - | - | 750 | 750 | |

\* Revised guidelines are shown in red

| **Receptor** | **Overall Guideline** | | **Human** | | | | | | | **Ecological** | | | | | | | | | | | | | | | | **Other** | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pathway** |  |  | **Direct Soil Contact** | **Vapour Inhalation** | | | | **Protection of Domestic Use Aquifer** | | **Direct Soil Contact** | | **Nutrient/ Energy Cycling Check** | **Livestock Soil and Food Ingestion** | **Wildlife Soil and Food Ingestion** | **Protection  of Freshwater  Aquatic Life** | | **Protection of Livestock Water** | | **Protection of Wildlife Water** | | | **Protection of Irrigation Water** | | | | **Management Limit** | | |
| **Soil Type** | **Fine** | **Coarse** | **-** | **Fine** | **Fine** | **Coarse** | **Coarse** | **Fine** | **Coarse** | **Fine** | **Coarse** |  | **-** | **-** | **Fine** | **Coarse** | **Fine** | **Coarse** | **Fine** | **Coarse** | | **Fine** | | **Coarse** | | **Fine** | | **Coarse** |
| **Building Type** |  |  | **-** | **Basement** | **Slab** | **Basement** | **Slab** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | | **-** | | **-** | | **-** | | **-** |
| **Unit (unless otherwise indicated)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | | **(mg/kg)** | | **(mg/kg)** | | **(mg/kg)** | | **(mg/kg)** |
| Boron (mg/L in saturated paste extract) | 3.3 | 3.3 | 7,500 | - | - | - | - | 65 | 118 | 3.3 | 3.3 | - | - | - | 5.0 | 5.0 | 17 | 17 | 17 | 17 | | 3.4 | | 3.4 | - | | | - |
| Chromium (total) | 64 | 64 | 220 | - | - | - | - | - | - | 64 | 64 | - | - | - | - | - | - | - | - | - | | - | | - | - | | | - |
| Nickel | 45 | 45 | 200 | - | - | - | - | - | - | 45 | 45 | 171 | 528 | - | - | - | - | - | - | - | | - | | - | - | | | - |
| Toluene | 0.52 | 0.12 | 640 | 2,100 | 1,900 | 130 | 95 | 0.52 | 0.95 | 110 | 75 | - | 2,500 | 980 | 63,000 | 0.12 | 26 | 29 | NGR | 1,000 | | - | | - | - | | | - |
| Ethylbenzene | 0.073 | 0.14 | 1,700 | 1,000 | 930 | 60 | 44 | 0.073 | 0.14 | 120 | 55 | - | 1,600 | 640 | NGR | 540 | 36 | 42 | NGR | 17,000 | | - | | - | - | | | - |
| Xylenes | 0.99 | 1.9 | 480 | 280 | 250 | 16 | 12 | 0.99 | 1.9 | 65 | 95 | - | 6,600 | 2,600 | NGR | 41 | 160 | 180 | NGR | 16,000 | | - | | - | - | | | - |
| Tetrachloroethene (Tetrachloroethylene, Perchloroethylene, PCE) | 0.26 | 0.018 | 180 | 0.46 | 0.41 | 0.025 | 0.018 | 0.26 | 0.46 | - | - | - | - | - | 0.69 | 0.77 | - | - | - | - | | | - | - | | | - | - |
| Trichloromethane (Chloroform) | 0.0029 | 0.0030 | 72 | 0.24 | 0.22 | 0.015 | 0.011 | 0.53 | 0.88 | - | - | - | - | - | 0.0029 | 0.0030 | 0.16 | 0.17 | - | - | | | - | - | | | - | - |
| Methanol | 37 | 11 | 8,900 | 34,000 | 33,000 | 2,100 | 1,400 | 37 | 42 | 1,200 | 1,200 | - | - | - | 300 | 11 | - | - | - | - | - | | | - | 750 | | | 750 |

**Table A-2. Surface Soil Remediation Guideline Values for Agricultural Land Use - All Exposure Pathways\***

\* Revised guidelines are shown in red

**Table A-3. Surface Soil Remediation Guideline Values for Residential Land Use - All Exposure Pathways\***

| **Receptor** | **Overall Guideline** | | **Human** | | | | | | | **Ecological** | | | | | | **Other** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pathway** |  |  | **Direct Soil Contact** | **Vapour Inhalation** | | | | **Protection of Domestic Use Aquifer** | | **Direct Soil  Contact** | | **Nutrient/ Energy  Cycling Check** | **Protection  of Freshwater  Aquatic Life** | | | **Management  Limit** | |
| **Soil Type** | **Fine** | **Coarse** | **-** | **Fine** | **Fine** | **Coarse** | **Coarse** | **Fine** | **Coarse** | **Fine** | **Coarse** |  | **Fine** | **Coarse** | | **Fine** | **Coarse** |
| **Building Type** |  |  | **-** | **Basement** | **Slab** | **Basement** | **Slab** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | | **-** | **-** |
| **Unit (unless otherwise indicated)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | | **(mg/kg)** | **(mg/kg)** |
| Boron (mg/L in saturated paste extract) | 3.3 | 3.3 | 7,500 | - | - | - | - | 65 | 118 | 3.3 | 3.3 | - | 5.0 | 5.0 | | - | - |
| Chromium (total) | 64 | 64 | 220 | - | - | - | - | - | - | 64 | 64 | - | - | - | | - | - |
| Nickel | 45 | 45 | 200 | - | - | - | - | - | - | 45 | 45 | 171 | - | - | | - | - |
| Toluene | 0.52 | 0.12 | 640 | 2,100 | 1,900 | 130 | 95 | 0.52 | 0.95 | 110 | 75 | - | 63,000 | 0.12 | | - | - |
| Ethylbenzene | 0.073 | 0.14 | 1,700 | 1,000 | 930 | 60 | 44 | 0.073 | 0.14 | 120 | 55 | - | NGR | 540 | | - | - |
| Xylenes | 0.99 | 1.9 | 480 | 280 | 250 | 16 | 12 | 0.99 | 1.9 | 65 | 95 | - | NGR | 41 | | - | - |
| Tetrachloroethene (Tetrachloroethylene, Perchloroethylene, PCE) | 0.26 | 0.018 | 180 | 0.46 | 0.41 | 0.025 | 0.018 | 0.26 | 0.46 | - | - | - | 0.69 | 0.77 | - | | - |
| Trichloromethane (Chloroform) | 0.0029 | 0.0030 | 72 | 0.24 | 0.22 | 0.015 | 0.011 | 0.53 | 0.88 | - | - | - | 0.0029 | 0.0030 | - | | - |
| Methanol | 37 | 11 | 8,900 | 34,000 | 33,000 | 2,100 | 1,400 | 37 | 42 | 1,200 | 1,200 | - | 300 | 11 | 750 | | 750 |

\* Revised guidelines are shown in red

**Table A-4. Surface Soil Remediation Guideline Values for Commercial Land Use - All Exposure Pathways\***

| **Receptor** | **Overall Guideline** | | **Human** | | | | | | **Ecological** | | | | | | **Other** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pathway** |  |  | **Direct Soil Contact** | **Vapour Inhalation** | | **Protection  of Domestic  Use Aquifer** | | **Off-Site Migration** | **Direct Soil  Contact** | | **Nutrient/ Energy Cycling Check** | **Protection of Freshwater Aquatic Life** | | **Off-Site Migration** | **Management  Limit** | |
| **Soil Type** | **Fine** | **Coarse** | **-** | **Fine** | **Coarse** | **Fine** | **Coarse** | **-** | **Fine** | **Coarse** |  | **Fine** | **Coarse** | **-** | **Fine** | **Coarse** |
| **Building Type** |  |  | **-** | **Slab** | **Slab** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| **Unit (unless otherwise indicated)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **mg/kg** | **mg/kg** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** |
| Boron (mg/L in saturated paste extract) | 5.0 | 5.0 | 11,000 | - | - | 65 | 118 | 110,000 | 7.9 | 7.9 | - | 5.0 | 5.0 | 46 | - | - |
| Nickel | 89 | 89 | 310 | - | - | - | - | 2,500 | 89 | 89 | 235 | - | - | 287 | - | - |
| Toluene | 0.52 | 0.12 | 980 | 13,000 | 1,200 | 0.52 | 0.95 | 9,200 | 330 | 250 | - | 63,000 | 0.12 | 1,100 | - | - |
| Ethylbenzene | 0.073 | 0.14 | 2,500 | 6,500 | 530 | 0.073 | 0.14 | 24,000 | 430 | 300 | - | NGR | 540 | 790 | - | - |
| Xylenes | 0.99 | 1.9 | 720 | 1,700 | 140 | 0.99 | 1.9 | 6,900 | 230 | 350 | - | NGR | 41 | 930 | - | - |
| Tetrachloroethene (Tetrachloroethylene, Perchloroethylene, PCE) | 0.26 | 0.22 | 270 | 2.9 | 0.22 | 0.26 | 0.46 | 2,600 | - | - | - | 0.69 | 0.77 | - | - | - |
| Trichloromethane (Chloroform) | 0.0029 | 0.0030 | 110 | 1.5 | 0.14 | 0.53 | 0.88 | 1,000 | - | - | - | 0.0029 | 0.0030 | - | - | - |
| Methanol | 37 | 11 | 13,000 | 210,000 | 18,000 | 37 | 42 | - | 1,600 | 1,600 | - | 300 | 11 | - | 750 | 750 |

\* Revised guidelines are shown in red

| **Receptor** | **Overall Guideline** | | | **Human** | | | | | | **Ecological** | | | | | | **Other** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pathway** |  |  | | **Direct Soil Contact** | **Vapour  Inhalation** | | **Protection of Domestic  Use Aquifer** | | **Off-Site Migration** | **Direct Soil  Contact** | | **Nutrient/ Energy Cycling Check** | **Protection of Freshwater Aquatic Life** | | **Off-Site Migration** | **Management Limit** | |
| **Soil Type** | **Fine** | **Coarse** | | **-** | **Fine** | **Coarse** | **Fine** | **Coarse** | **-** | **Fine** | **Coarse** |  | **Fine** | **Coarse** | **-** | **Fine** | **Coarse** |
| **Building Type** |  |  | | **-** | **Slab** | **Slab** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| **Unit (unless otherwise indicated)** | **(mg/kg)** | **(mg/kg)** | | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** |
| Boron (mg/L in saturated paste extract) | 5.0 | 5.0 | | 230,000 | - | - | 65 | 118 | 110,000 | 7.9 | 7.9 | - | 5.0 | 5.0 | 46 | - | - |
| Nickel | 89 | 89 | | 5,100 | - | - | - | - | 2,500 | 89 | 89 | 235 | - | - | 287 | - | - |
| Toluene | 0.52 | | 0.12 | 11,000 | 13,000 | 1,200 | 0.52 | 0.95 | 9,200 | 330 | 250 | - | 63,000 | 0.12 | 1,100 | - | - |
| Ethylbenzene | 0.073 | | 0.14 | 24,000 | 6,500 | 530 | 0.073 | 0.14 | 24,000 | 430 | 300 | - | NGR | 540 | 790 | - | - |
| Xylenes | 0.99 | | 1.9 | 8,100 | 1,700 | 140 | 0.99 | 1.9 | 6,900 | 230 | 350 | - | NGR | 41 | 930 | - | - |
| Tetrachloroethene (Tetrachloroethylene, Perchloroethylene, PCE) | 0.26 | | 0.22 | 3,200 | 2.9 | 0.22 | 0.26 | 0.46 | 2,600 | - | - | - | 0.69 | 0.77 | - | - | - |
| Trichloromethane (Chloroform) | 0.0029 | | 0.0030 | 1,800 | 1.5 | 0.14 | 0.53 | 0.88 | 1,000 | - | - | - | 0.0029 | 0.0030 | - | - | - |
| Methanol | 37 | 11 | | 64,000 | 210,000 | 18,000 | 37 | 42 | - | 1,600 | 1,600 | - | 300 | 11 | - | 750 | 750 |

**Table A-5. Surface Soil Remediation Guideline Values for Industrial Land Use - All Exposure Pathways\***

\* Revised guidelines are shown in red

**Table A-6. Subsoil Remediation Guideline Values for Natural Area Land Use - All Exposure Pathways (BTEX and PHC Only)\***

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Receptor** | **Overall Guideline** |  | **Human** | | **Ecological** | | | | | | | | | **Other** | |
| **Pathway** |  |  | **Protection  of Domestic  Use Aquifer** | | **Direct Soil Contact** | | **Nutrient/ Energy Cycling Check** | **Livestock Soil and Food Ingestion** | **Wildlife Soil and Food Ingestion** | **Protection  of Freshwater  Aquatic Life** | | **Protection  of Wildlife Water** | | **Management Limit** | |
| **Soil Type** | **Fine** | **Coarse** | **Fine** | **Coarse** | **Fine** | **Coarse** |  | **-** | **-** | **Fine** | **Coarse** | **Fine** | **Coarse** | **Fine** | **Coarse** |
| **Building Type** |  |  | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| **Unit** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** |
| Ethylbenzene | 0.073 | 0.14 | 0.073 | 0.14 | 240 | 110 | - | na | na | NGR | 540 | NGR | 17,000 | - | - |
| Xylenes | 0.99 | 1.9 | 0.99 | 1.9 | 130 | 190 | - | na | na | NGR | 41 | NGR | 16,000 | - | - |

\* Revised guidelines are shown in red

**Table A-7. Subsoil Remediation Guideline Values for Agricultural Land Use - All Exposure Pathways (BTEX and PHC Only)\***

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Receptor** | **Overall Guideline** | | **Human** | | | | | | | **Ecological** | | | | | | | | | | | | | **Other** | |
| **Pathway** |  |  | **Direct Soil Contact** | **Vapour Inhalation** | | | | **Protection of Domestic Use Aquifer** | | **Direct Soil Contact** | | **Nutrient/ Energy Cycling Check** | **Livestock Soil and Food Ingestion** | **Wildlife Soil and Food Ingestion** | **Protection of Freshwater Aquatic Life** | | **Protection of Livestock Water** | | **Protection of Wildlife Water** | | **Protection of Irrigation Water** | | **Management Limit** | |
| **Soil Type** | **Fine** | **Coarse** | **-** | **Fine** | **Fine** | **Coarse** | **Coarse** | **Fine** | **Coarse** | **Fine** | **Coarse** |  | **-** | **-** | **Fine** | **Coarse** | **Fine** | **Coarse** | **Fine** | **Coarse** | **Fine** | **Coarse** | **Fine** | **Coarse** |
| **Building Type** |  |  | **-** | **Basement** | **Slab** | **Basement** | **Slab** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| **Unit** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **mg/kg** | **mg/kg** | **mg/kg** | **mg/kg** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** |
| Toluene | 0.52 | 0.12 | 640 | 2,100 | 2,000 | 130 | 180 | 0.52 | 0.95 | 220 | 150 | - | na | na | 63,000 | 0.12 | 26 | 29 | NGR | 1,000 | - | - | - | - |
| Ethylbenzene | 0.073 | 0.14 | 1,700 | 1,000 | 970 | 60 | 86 | 0.073 | 0.14 | 240 | 110 | - | na | na | NGR | 540 | 36 | 42 | NGR | 17,000 | - | - | - | - |
| Xylenes | 0.99 | 1.9 | 480 | 280 | 260 | 16 | 23 | 0.99 | 1.9 | 130 | 190 | - | na | na | NGR | 41 | 160 | 180 | NGR | 16,000 | - | - | - | - |

\* Revised guidelines are shown in red

**Table A-8. Subsoil Remediation Guideline Values for Residential/Parkland Land Use - All Exposure Pathways (BTEX and PHC Only)\***

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Receptor** | **Overall Guideline** | | **Human** | | | | | | | **Ecological** | | | | | **Other** | |
| **Pathway** |  |  | **Direct Soil Contact** | **Vapour Inhalation** | | | | **Protection  of Domestic  Use Aquifer** | | **Direct Soil  Contact** | | **Nutrient/ Energy Cycling Check** | **Protection  of Freshwater  Aquatic Life** | | **Management  Limit** | |
| **Soil Type** | **Fine** | **Coarse** | **-** | **Fine** | **Fine** | **Coarse** | **Coarse** | **Fine** | **Coarse** | **Fine** | **Coarse** |  | **Fine** | **Coarse** | **Fine** | **Coarse** |
| **Building Type** |  |  | **-** | **Basement** | **Slab** | **Basement** | **Slab** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| **Unit** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **mg/kg** | **mg/kg** | **mg/kg** | **mg/kg** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** |
| Toluene | 0.52 | 0.12 | 640 | 2,100 | 2,000 | 130 | 180 | 0.52 | 0.95 | 220 | 150 | - | 63,000 | 0.12 | - | - |
| Ethylbenzene | 0.073 | 0.14 | 1,700 | 1,000 | 970 | 60 | 86 | 0.073 | 0.14 | 240 | 110 | - | NGR | 540 | - | - |
| Xylenes | 0.99 | 1.9 | 480 | 280 | 260 | 16 | 23 | 0.99 | 1.9 | 130 | 190 | - | NGR | 41 | - | - |

\* Revised guidelines are shown in red

**Table A-9. Subsoil Remediation Guideline Values for Commercial Land Use - All Exposure Pathways (BTEX and PHC Only)\***

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Receptor** | **Overall Guideline** | | **Human** | | | | | | **Ecological** | | | | | | **Other** | |
| Pathway |  |  | **Direct Soil Contact** | **Vapour Inhalation** | | **Protection of  Domestic Use Aquifer** | | **Off-Site Migration** | **Direct Soil  Contact** | | **Nutrient/ Energy Cycling Check** | **Protection of Freshwater Aquatic Life** | | **Off-Site Migration** | **Management  Limit** | |
| **Soil Type** | **Fine** | **Coarse** | **-** | **Fine** | **Coarse** | **Fine** | **Coarse** | **-** | **Fine** | **Coarse** |  | **Fine** | **Coarse** | **-** | **Fine** | **Coarse** |
| **Building Type** |  |  | **-** | **Slab** | **Slab** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| **Unit** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **mg/kg** | **mg/kg** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** |
| Toluene | 0.52 | 0.12 | 980 | 14,000 | 1,600 | 0.52 | 0.95 | 9,200 | 660 | 500 | - | 63,000 | 0.12 | 2,100 | - | - |
| Ethylbenzene | 0.073 | 0.14 | 2,500 | 6,700 | 760 | 0.073 | 0.14 | 24,000 | 860 | 600 | - | NGR | 540 | 1,600 | - | - |
| Xylenes | 0.99 | 1.9 | 720 | 1,800 | 210 | 0.99 | 1.9 | 6,900 | 460 | 700 | - | NGR | 41 | 930 | - | - |
| F1 | 640 | 440 | 19,000 | 4,700 | 440 | 1,100 | 2,200 | 30,000 | 640 | 640 | - | 30,000 | 1300 | 3,000 | 800 | 700 |
| F2 | 520 | 520 | 10,000 | 24,000 | 2,400 | 1,500 | 2,900 | 30,000 | 520 | 520 | - | 30,000 | 520 | 2,100 | 1,000 | 1,000 |
| F3 | 4,300 | 3,400 | 23,000 | - | - | - | - | 30,000 | 5,000 | 3,400 | - | - | - | 4,300 | 5,000 | 3,500 |
| F4 | 10,000 | 6,600 | 30,000 | - | - | - | - | 30,000 | 13,200 | 6,600 | - | - | - | 30,000 | 10,000 | 10,000 |

\* Revised guidelines are shown in red

**Table A-10. Subsoil Remediation Guideline Values for Industrial Land Use - All Exposure Pathways (BTEX and PHC Only)\***

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Receptor** | **Overall Guideline** | | **Human** | | | | | | **Ecological** | | | | | | **Other** | |
| **Pathway** |  |  | **Direct Soil Contact** | **Vapour Inhalation** | | **Protection of Domestic Use Aquifer** | | **Off-Site Migration** | **Direct Soil  Contact** | | **Nutrient/ Energy Cycling Check** | **Protection of Freshwater Aquatic Life** | | **Off-Site Migration** | **Management  Limit** | |
| **Soil Type** | **Fine** | **Coarse** | **-** | **Fine** | **Coarse** | **Fine** | **Coarse** | **-** | **Fine** | **Coarse** |  | **Fine** | **Coarse** | **-** | **Fine** | **Coarse** |
| **Building Type** |  |  | **-** | **Slab** | **Slab** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| **Unit** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **mg/kg** | **mg/kg** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** | **(mg/kg)** |
| Toluene | 0.52 | 0.12 | 11,000 | 14,000 | 1,600 | 0.52 | 0.95 | 9,200 | 660 | 500 | - | 63,000 | 0.12 | 2,100 | - | - |
| Ethylbenzene | 0.073 | 0.14 | 24,000 | 6,700 | 760 | 0.073 | 0.14 | 24,000 | 860 | 600 | - | NGR | 540 | 1,600 | - | - |
| Xylenes | 0.99 | 1.9 | 8,100 | 1,800 | 210 | 0.99 | 1.9 | 6,900 | 460 | 700 | - | NGR | 41 | 930 | - | - |
| F1 | 640 | 440 | 30,000 | 4,700 | 440 | 1,100 | 2,200 | 30,000 | 640 | 640 | - | 30,000 | 1300 | 3,000 | 800 | 700 |
| F2 | 520 | 520 | 30,000 | 24,000 | 2,400 | 1,500 | 2,900 | 30,000 | 520 | 520 | - | 30,000 | 520 | 2,100 | 1,000 | 1,000 |
| F3 | 4,300 | 3,400 | 30,000 | - | - | - | - | 30,000 | 5,000 | 3,400 | - | - | - | 4,300 | 5,000 | 3,500 |
| F4 | 10,000 | 6,600 | 30,000 | - | - | - | - | 30,000 | 13,200 | 6,600 | - | - | - | 30,000 | 10,000 | 10,000 |

\* Revised guidelines are shown in red

| **Water Use** | **Lowest Guideline** | | **Potable GW** | **Eco Soil Contact** | | **Aquatic Life** | | **Wildlife Watering** | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil Type** | **Fine** | **Coarse** | **All** | **Fine** | **Coarse** | **Fine** | **Coarse** | **Fine** | **Coarse** | |
| **Unit** | **(mg/L)** | **(mg/L)** | **(mg/L)** | **(mg/L)** | **(mg/L)** | **(mg/L)** | **(mg/L)** | **(mg/L)** | **(mg/L)** | |
| Selenium | 0.001 | 0.001 | 0.05 | - | - | 0.001 | 0.001 | - | - | |
| Ethylbenzene | 0.0016 | 0.0016 | 0.0016 | 42 | 20 | NGR | 41 | NGR | NGR | |
| Xylenes | 0.02 | 0.02 | 0.02 | 21 | 31 | NGR | 2.9 | NGR | NGR | |
| Tetrachloroethene (Tetrachloroethylene, Perchloroethylene, PCE) | 0.010 | 0.010 | 0.010 | - | - | 0.11 | 0.11 | - | - | |
| Trichloromethane (Chloroform) | 0.0018 | 0.0018 | 0.08 | - | - | 0.0018 | 0.0018 | - | - | |
| Methanol | 19 | 19 | 19 | - | - | 630 | 32 | - | | - |

**Table B-1. Groundwater Remediation Guideline Values for Natural Areas - All Water Uses\***

\* Revised guidelines are shown in red

**Table B-2. Groundwater Remediation Guideline Values for Agricultural Land - All Water Uses\***

| **Water Use** | **Lowest Guideline** | | **Potable** | | **Inhalation** | | | **Eco Soil Contact** | | | | **Aquatic Life** | | **Irrigation** | **Livestock** | **Wildlife  Watering** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil Type** | **Fine** | **Coarse** | **All** | | **Fine** | | **Coarse** | **Fine** | **Coarse** | | | **Fine** | **Coarse** | **All** | **All** | **Fine** | **Coarse** |
| **Unit** | **(mg/L)** | **(mg/L)** | **(mg/L)** | | **(mg/L)** | | **(mg/L)** | **(mg/L)** | **(mg/L)** | | | **(mg/L)** | **(mg/L)** | **(mg/L)** | **(mg/L)** | **(mg/L)** | **(mg/L)** |
| Boron | 1.0 | 1.0 | 5 | | - | | - | - | - | | | 1.5 | 1.5 | 1.0 | 5 | - | - |
| Selenium | 0.001 | 0.001 | 0.05 | | - | | - | - | - | | | 0.001 | 0.001 | 0.02 | 0.05 | - | - |
| Ethylbenzene | 0.0016 | 0.0016 | 0.0016 | | NGR | | 16 | 42 | 20 | | | NGR | 41 | - | 3.2 | NGR | NGR |
| Xylenes | 0.02 | 0.02 | 0.02 | | 80 | | 3.9 | 21 | 31 | | | NGR | 2.9 | - | 13 | NGR | NGR |
| Tetrachloroethene (Tetrachloroethylene, Perchloroethylene, PCE) | 0.010 | 0.010 | 0.010 | | 0.25 | | 0.012 | - | - | | | 0.11 | 0.11 | - | - | - | - |
| Trichloromethane (Chloroform) | 0.0018 | 0.0018 | 0.08 | | 0.53 | | 0.030 | - | - | | | 0.0018 | 0.0018 | - | 0.1 | - | - |
| Methanol | 19 | 19 | 19 | 270,000 | | 19,000 | | - | | - | 630 | | 32 | - | - | - | - |

\* Revised guidelines are shown in red

**Table B-3. Groundwater Remediation Guideline Values for Residential/Parkland - All Water Uses\***

| **Water Use** | **Lowest Guideline** | | **Potable** | **Inhalation** | | **Eco Soil Contact** | | **Aquatic Life** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil Type** | **Fine** | **Coarse** | **All** | **Fine** | **Coarse** | **Fine** | **Coarse** | **Fine** | **Coarse** |
| **Unit** | **(mg/L)** | **(mg/L)** | **(mg/L)** | **(mg/L)** | **(mg/L)** | **(mg/L)** | **(mg/L)** | **(mg/L)** | **(mg/L)** |
| Selenium | 0.001 | 0.001 | 0.05 | - | - | - | - | 0.001 | 0.001 |
| Ethylbenzene | 0.0016 | 0.0016 | 0.0016 | NGR | 16 | 42 | 20 | NGR | 41 |
| Xylenes | 0.02 | 0.02 | 0.02 | 80 | 3.9 | 21 | 31 | NGR | 2.9 |
| Tetrachloroethene (Tetrachloroethylene, Perchloroethylene, PCE) | 0.010 | 0.010 | 0.010 | 0.25 | 0.012 | - | - | 0.11 | 0.11 |
| Trichloromethane (Chloroform) | 0.0018 | 0.0018 | 0.08 | 0.53 | 0.030 | - | - | 0.0018 | 0.0018 |
| Methanol | 19 | 19 | 19 | 270,000 | 19,000 | - | - | 630 | 32 |

\* Revised guidelines are shown in red

**Table B-4. Groundwater Remediation Guideline Values for Commercial/Industrial - All Water Uses\***

| Pathway | Lowest Guideline | | Potable | Inhalation | | Eco Soil Contact | | | Aquatic Life | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Soil Type | Fine | Coarse | All | Fine | Coarse | Fine | | Coarse | Fine | Coarse | |
| Unit | (mg/L) | (mg/L) | (mg/L) | (mg/L) | (mg/L) | (mg/L) | | (mg/L) | (mg/L) | (mg/L) | |
| Selenium | 0.001 | 0.001 | 0.05 | - | - | - | - | | 0.001 | | 0.001 |
| Ethylbenzene | 0.0016 | 0.0016 | 0.0016 | NGR | NGR | 150 | | 110 | NGR | 41 | |
| Xylenes | 0.02 | 0.02 | 0.02 | NGR | 48 | 74 | | 120 | NGR | 2.9 | |
| Tetrachloroethene (Tetrachloroethylene, Perchloroethylene, PCE) | 0.010 | 0.010 | 0.010 | 1.8 | 0.14 | - | | - | 0.11 | 0.11 | |
| Trichloromethane (Chloroform) | 0.0018 | 0.0018 | 0.08 | 3.5 | 0.38 | - | | - | 0.0018 | 0.0018 | |
| Methanol | 19 | 19 | 19 | NGR | 250,000 | - | | - | 630 | 32 | |

\* Revised guidelines are shown in red