**Section 742.APPENDIX C Tier 2 Illustrations and Tables**

**Section 742.TABLE A SSL Equations**

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| Equations for Soil Ingestion Exposure Route | Remediation Objectives for Noncarcinogenic Contaminants (mg/kg) |  | S1 |
| Remediation Objectives for Carcinogenic Contaminants − Residential (mg/kg) |  | S2 |
| Remediation Objectives for Carcinogenic Contaminants − Industrial/Commercial, Construction Worker (mg/kg) |  | S3 |
| Equations for Inhalation Exposure Route (Organic Contaminants and Mercury | Remediation Objectives for Noncarcinogenic Contaminants − Residential, Industrial/Commercial (mg/kg) |  | S4 |
| Remediation Objectives for Noncarcinogenic Contaminants − Construction Worker (mg/kg) |  | S5 |
| Remediation Objectives for Carcinogenic Contaminants − Residential, Industrial/ Commercial (mg/kg) |  | S6 |
| Remediation Objectives for Carcinogenic Contaminants − Construction Worker (mg/kg) |  | S7 |
| Equation for Derivation of the Volatilization Factor − Residential, Industrial/ Commercial, VF (m3/kg) |  | S8 |
| Equation for Derivation of the Volatilization Factor − Construction Worker, VF*'* (m3/kg) | *VF*' = | S9 |
| Equation for Derivation of Apparent Diffusivity, DA (cm2/s) |  | S10 |
| Equations for Inhalation Exposure Route (Fugitive Dusts) | Remediation Objectives for Noncarcinogenic Contaminants − Residential, Industrial/Commercial (mg/kg) |  | S11 |
| Remediation Objectives for Noncarcinogenic Contaminants − Construction Worker (mg/kg) |  | S12 |
| Remediation Objectives for Carcinogenic Contaminants − Residential, Industrial/ Commercial (mg/kg) |  | S13 |
| Remediation Objectives for Carcinogenic Contaminants − Construction Worker (mg/kg) |  | S14 |
| Equation for Derivation of Particulate Emission Factor, PEF (m3/kg) |  | S15 |
|  | Equation for Derivation of Particulate Emission Factor, PEF' − Construction Worker (m3/kg) | NOTE: PEF must be the industrial/commercial value | S16 |

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| Equations for the Soil Component of the Groundwater Ingestion Exposure Route | Remediation Objective  (mg/kg) | NOTE: This equation can only be used to model contaminant migration not in the water bearing unit. | | S17 |
| Target Soil Leachate Concentration, Cw (mg/L) | *Cw = DF • GWobj* | | S18 |
| Soil-Water Partition Coefficient, Kd (cm3/g) | *Kd = Koc • foc* | | S19 |
| Water-Filled Soil Porosity,  θw (Lwater/Lsoil) |  | | S20 |
| Air-Filled Soil Porosity,  θa (Lair/Lsoil) | θa *= η- θw* | | S21 |
| Dilution Factor, DF (unitless) |  | | S22 |
| Groundwater Remediation Objection for Carcinogenic Contaminants, GWobj (mg/L) |  | | S23 |
|  | Total Soil Porosity, *η* (Lpore/Lsoil) |  | | S24 |
|  | Equation for Estimation of Mixing Zone Depth, d (m) |  |  | S25 |
| Mass-Limit Equations for Inhalation Exposure Route and Soil Component of the Groundwater Ingestion Exposure Route | Mass-Limit Volatilization Factor for the Inhalation Exposure Route − Residential, Industrial/Commercial VF (m3/kg) | NOTE: This equation may be used when vertical thickness of contamination is known or can be estimated reliably. | | S26 |
| Mass-Limit Volatilization Factor for the Inhalation Exposure Route − Construction Worker, VT' − (m3/kg) |  | | S27 |
| Mass-Limit Remediation Objective for Soil Component of the Groundwater Ingestion Exposure Route (mg/kg) | NOTE: This equation may be used when vertical thickness is known or can be estimated reliably. | | S28 |
| Equation for Derivation of the Soil Saturation Limit, Csat | |  | | S29 |
| Equation for the soil gas component of the Outdoor Inhalation Exposure Route | |  | | S30 |

(Source: Amended at 37 Ill. Reg. 7506, effective May 15, 2013)