**Section 742.700 Tier 2 Soil and Soil Gas Evaluation Overview**

a) Tier 2 remediation objectives are developed through the use of models which allow site-specific data to be considered. Appendix C, Tables A, C, and L list equations that shall be used under a Tier 2 evaluation to calculate soil remediation objectives prescribed by the SSL, RBCA, and modified J&E models, respectively. (See also Appendix C, Illustration A.)

b) Appendix C, Table A lists equations that are used under the SSL model. (See also Appendix C, Illustration A.) The SSL model has equations to evaluate the following human exposure routes:

1) Soil ingestion exposure route;

2) Outdoor Inhalation exposure route; and

3) Soil component of the groundwater ingestion exposure route.

c) Evaluation of the dermal exposure route is not required under the SSL model.

d) Appendix C, Table C lists equations that are used under the RBCA model. (See also Appendix C, Illustration A.) The RBCA model has equations to evaluate human exposure based on the following:

1) The combined exposure routes of outdoor inhalation of vapors and particulates, soil ingestion and dermal contact with soil;

2) The outdoor inhalation exposure route from subsurface soils;

3) Soil component of the groundwater ingestion exposure route; and

4) Groundwater ingestion exposure route.

e) Appendix C, Table L lists equations that are used under the modified J&E model. The modified J&E model has equations to evaluate human exposure by the indoor inhalation exposure route. The modified model allows for the development of soil gas remediation objectives. For the indoor inhalation exposure route:

1) Appendix C, Table L applies only when the existing or potential building has a full concrete slab-on-grade or a full concrete basement floor and walls; and

2) Institutional controls under Subpart J are required to develop soil gas remediation objectives pursuant to Appendix C, Table L.

f) The equations in either Appendix C, Table A, C, or L may be used to calculate remediation objectives for each contaminant of concern under Tier 2, if the following requirements are met:

1) The Tier 2 soil or soil gas remediation objectives for the ingestion and outdoor inhalation exposure routes shall use the applicable equations from the same approach (i.e., SSL equations in Appendix C, Table C). For the indoor inhalation exposure route, only the J&E equations can be used.

2) The equations used to calculate soil remediation objectives for the soil component of the groundwater ingestion exposure route are not dependent on the approach utilized to calculate soil remediation objectives for the other exposure routes. For example, it is acceptable to use the SSL equations for calculating Tier 2 soil remediation objectives for the ingestion and outdoor inhalation exposure routes, and the RBCA equations for calculating Tier 2 soil remediation objectives for the soil component of the groundwater ingestion exposure route.

3) Combining equations from Appendix C, Tables A, C, and L to form a new model is not allowed. In addition, Appendix C, Tables A, C, and L must use their own applicable parameters identified in Appendix C, Tables B, D, and M, respectively.

g) In calculating soil or soil gas remediation objectives for industrial/commercial property use, applicable calculations shall be performed twice: once using industrial/commercial population default values and once using construction worker population default values. The more stringent soil or soil gas remediation objectives derived from these calculations must be used for further Tier 2 evaluations. The indoor inhalation exposure route does not apply to the construction worker population.

h) Tier 2 data sheets provided by the Agency shall be used to present calculated Tier 2 remediation objectives, if required by the particular program for which remediation is being performed.

i) The RBCA equations which rely on the parameter Soil Water Sorption Coefficient (ks) can only be used for ionizing organics and inorganics by substituting values for ks from Appendix C, Tables I and J, respectively. This will also require the determination of a site-specific value for soil pH.

j) For the outdoor inhalation exposure route, it is acceptable to use either Section 742.710 to develop a soil remediation objective or Section 742.712 to develop a soil gas remediation objective to determine compliance with the pathway.

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