

# Updated Cleanup Levels Guidance - 2015

## Proposed for Adoption-by-Reference

### Summary of Changes

The current version of the Cleanup Levels Guidance adopted by reference dates back to 2008. Revisions to this document, to be renamed *Procedures for Calculating Cleanup Levels*, are necessary because we are revising and updating equations for calculating compound-specific cleanup levels. These equations are provided in the new version. The new equations include updated toxicity information and improved exposure pathway evaluation for the approximately 180 compounds we regulate in Tables B1 and C.

Some of the key improvements include:

- **Groundwater risk:** Our current equations only account for ingestion; the new equations account for ingestion of groundwater, dermal contact, and inhalation of volatiles from groundwater. This may account for why many risk-based values are more conservative. MCLS used in the past in Table C in some cases only account for ingestion risk.
- **Age-adjusted:** Another difference from our equations concerns body weight. Currently our groundwater ingestion equations accommodate an adult of 70 kg. The new equations are targeted to be protective for children with a body weight of 15kg.
- **Soil exposure pathways:** Our current equations provide two separate cleanup values for the direct contact pathway and the outdoor inhalation pathway. The new equations calculate cleanup values for dermal contact with soil, ingestion of soil using a childhood age-adjusted to account for varying levels of soil ingestion depending on age, and exposure to soil through inhalation both of volatiles and particulates. Values for the three pathways are then totaled to produce a single, cumulative risk-based value for each compound. As a result, the new method two values under Table B1 will appear as a single number. In addition, separate equations are used to calculate risk from mutagens, carcinogens, and non-carcinogens for each of the pathways.

The proposed 2015 updated version includes:

- More thorough explanations in the text.
- All new equations for the Table B1 and C compounds for soil and groundwater, including supporting equations for particulate emission factor, volatilization factor, and others.
- A section on calculating site-specific cleanup levels, listing parameters that can be modified under method three.
- Maintaining equations 15 through 20 for petroleum, since these are not being changed as part of this regulations proposal. We propose to revise the petroleum cleanup levels during a subsequent package.
- Update to the table of chemical specific parameters based on new information provided by EPA including exposure pathway information and updated toxicity information.
- A new title removing the word, “guidance” to clarify that the procedures are not optional.