

HDOH EHE Guidance

Appendix 9: Summary of Fall 2017 Updates

Volume 1:

1. Section 2.4.3. **Groundwater Utility**. Discussion of classification of groundwater as potential source of drinking water expanded.
2. Section 2.5.3. **Organochlorine Pesticides**. Note added to clarify that alpha and beta BHC are assumed to be minor components of Lindane and do not need to be assessed separately, even if reported separately by the laboratory.

Volume 2:

Appendix 1 Text:

3. Appendix 1, Section 1.3 (see also Table H). Discussion of estimation of noncancer **inhalation RfCs** from oral RfDs for volatile chemicals that lack the former expanded. Calculation of **inhalation UIR** from oral SFO for volatile carcinogens that lack the former discontinued (inhalation pathway not demonstrated to pose a cancer risk).
4. Appendix 1, Section 1.4. Discussion of **default, target risks** used to calculate screening levels in terms of USEPA guidance for acceptable risk ranges expanded (e.g., cancer risk 10^{-6} and noncancer HQ 0.2).
5. Appendix 1, Section 4.2.2. **Deviations from default, target risks** to develop screening levels for specific chemicals summarized (see also Appendix 1, Tables I-1, I-2 and I-3).

Appendix 1 Tables:

6. Appendix 1, Table D-3b. **Inhalation pathway** excluded for calculation of toxicity-based, **TPH_{md}** drinking water action level; assumed to be dominated by nonvolatile degradation products at point of potential impacts to water supply wells (see discussion in Appendix 1, Section 6.6).
7. Appendix 1, Table E-1. SESOIL algorithm for **leaching based soil action levels** applied to **TPH** categories, with a maximum cap of 5,000 mg/kg.
8. Appendix 1, Table E-2. **Soil vapor action levels** for screening of VOCs in vadose-leachate added (see also Volume 1 Summary Table E). These can be used as an alternative to soil action levels to assess potential leaching and groundwater impact concerns. Soil vapor is a more reliable indicator of VOC concentrations in leachate than soil data, but do not consider attenuation of VOCs as leachate migrates downward to the water table.
9. Appendix 1, Table G-1. Drinking water **taste and odor threshold for TPH** increased from 100 µg/L to 500 µg/L based on re-evaluation of past studies (see discussion in Appendix 1, Section 6.6).
10. Appendix 1, Table H. **Physiochemical parameter values** and **toxicity factors** updated to reflect values used in June 2017 USEPA Regional Screening Levels guidance. No significant change to action levels for common contaminants with the exception of PAHs (soil) and TPH (drinking water), discussed below.

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11. Appendix 1, Table H. Default physio-chemical parameters for **TPHg** and **TPHd** revised to reflect MADEP parameter values for C9-C10 aromatics (see Section 6) and SESOIL algorithm used to develop soil leaching action levels (see Table E-1; action levels increased).
12. Appendix 1, Table H. **PAH** screening levels revised to reflect updated toxicity factors in USEPA RSLs. Target cancer risk adjusted from 10^{-4} to 10^{-5} for nonvolatile PAHs, with the exception of **BaP**. Refer to Appendix 1, Section 4.2 for summary of target risks applied to individual PAH compounds.

Other:

13. Appendix 2. Original USEPA default **adult body weight** of 70 kg re-instituted due to lower-than-average body weight of Hawaii residents compared to the US mainland (see also Appendix 1, Section 4.2.1 (USEPA RSL default, adult body weight increased to 80 kg in 2016.)
14. Appendix 1, EAL Surfer. **Bioaccessible arsenic** soil action levels highlighted in EAL Surfer notes for arsenic.

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2017 HDOH EAL Updates, Affected Action Levels:

Chemical	Revision	Affected action levels
1,2 Dichloropropane	Revised USEPA toxicity factor (EAL decreased)	Soil, indoor air, soil vapor
Dieldrin	Corrected USEPA UIR (EAL decreased)	Soil
Heptachlor, Heptachlor Epoxide	Target cancer risk increased to 10^{-5} (EAL increased)	Soil, drinking water (toxicity)
Benzo(a)pyrene	Cancer-based toxicity factor revised in USEPA RSLs and noncancer toxicity factor added (EAL increased)	Soil, drinking water (toxicity)
Other Carcinogenic PAHs: Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(f)fluoranthene, Chrysene, Dibenzo(a,h)anthracene, Indeno(1,2,3,-cd)pyrene	Cancer-based toxicity factors revised in USEPA RSLs but no noncancer toxicity factors proposed and residential target risk revised from 10^{-4} to 10^{-5} (EALs decreased)	Soil, drinking water (toxicity)
Propiconazole	Revised USEPA toxicity factor (EAL increased)	Soil
TPHg	Drinking water taste and odor threshold increased (EAL increased); SESOIL model applied to soil leaching action level (EAL increased).	Soil, Drinking water
TPHd	Inhalation route excluded for drinking water and drinking water taste and odor threshold increased (EAL increased); SESOIL model applied to soil leaching action level (EAL increased).	Soil, Drinking water
TPHrf	Soil leaching action level increased to 5,000 mg/kg.	Soil
Volatile Chemicals: 1,1 biphenyl, dibromochloromethane, 1-methylnaphthalene, 2-nitrotoluene, tert butyl alcohol, 1,2,4 trichlorobenzene, 1,2,3 trichloropropane	Discontinued calculation of inhalation UIR from oral slope factor if not included in USEPA RSLs (EALs increased)	Soil, indoor air, soil vapor