

Charge to the Peer Reviewers of “Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: Compendium of Tier 2 Values for Nonionic Organics”

BACKGROUND

The ESBs and associated methodology presented in this document provide a means to estimate the concentrations of 32 nonionic organic chemicals that may be present in sediment, while still protecting benthic organisms (both freshwater and marine) from the effects of those chemicals. The equilibrium partitioning (EqP) approach was chosen because it accounts for the varying biological availability of chemicals in different sediments and allows for the incorporation of the appropriate biological effects concentration. The ESBs are intended to provide protection to benthic organisms from direct toxicity, and they may be useful as a complement to existing sediment assessment tools, to help assess the extent of sediment contamination, to help identify chemicals causing toxicity, and to serve as targets for pollutant loading control measures.

QUESTIONS FOR REVIEWERS

NOTE: Comments on all sections of the document of a technical and/or editorial nature are appreciated, although reviewers also are welcome to direct their comments only to specific sections or topics for which they are most familiar.

In your review, please provide written responses to the following questions, organized by document section.

Front Matter: *Foreword, Abstract, Table of Contents, Executive Summary, etc.*

Does this series of brief sub-sections provide an acceptable opening to the document and provide the reader with sufficient preliminary information for understanding the material that follows? If not, what specific additions or deletions to this section would you suggest?

Section 1: *Introduction*

- 1) Does this section adequately describe the overall approach used to derive ESBs? Further, does it provide a sufficient overview of the approach used for the protection of benthic environments contaminated with the nonionic organic chemicals addressed in this document? What specific improvements to this section would you suggest?
- 2) Is the discussion of the types of ESBs and the outline of the document's contents useful? If you identify deficiencies, please recommend ways to remedy them.

Section 2: *Derivation of Equilibrium Partitioning Sediment Benchmarks*

- 1) Does this section describe a sound scientific basis for selecting toxicity and K_{OW} values

for the calculation of ESBs? Are the methods and logic clearly explained and scientifically justified?

- 2) Is there any aspect of the toxicity or chemistry of the nonionic organic chemicals addressed in this document that is relevant but not considered, and exactly what scientifically defensible suggestions can you recommend to overcome the limitations?

Section 3: *Calculation of Equilibrium Partitioning Sediment Benchmarks*

- 1) Does the section describe a sound scientific basis for determining the adverse effects of the nonionic organic chemicals addressed? Do the tables and figures provide clear and useful information?
- 2) Are there any relevant aspects of chemistry and toxicity that the section does not address adequately, and exactly what would you suggest to overcome the limitations?

Section 4: *Sediment Benchmark Values: Application and Interpretation*

- 1) Are the ESB values discussed in this section supported by the information and analysis discussed earlier in the document?
- 2) Are there any other aspects of these chemicals or this approach for deriving benchmarks for sediments that should be addressed?

Please provide your written comments to me no later than **January 8, 2007**. Comments may be sent by regular mail to the address below, or by e-mail to houk.virginia@epa.gov.

If you have any questions concerning the draft report or the charge, please feel free to contact me. We sincerely thank you for your input to our peer review process.

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