Thanks for the opportunity to participate in the peer review of "Sediment Toxicity Identification Evaluation (TIE) Phase I, II and III Guidance Document (draft)". In terms of the charge questions, I think the document satisfies the overall objectives. I do have a few suggestions related specifically to the charge questions presented:

Overall (question 3) - I was extremely impressed with the quality of the writing throughout the document. This is a highly complex, technical area and the writing making up this guidance was quite readable and the concepts were very well presented. This is so important if the guidance is to be used on a broad scale. The authors of this document are to be commended!

One other consideration throughout: in many instances discussion of freshwater and saltwater techniques do not have to be separated, but in others they are markedly distinct and perhaps deserve separate subsections. However, this is not a major issue.

Sections 1-5 - I do not think anyone reads these sections--they are fluff. They can be retained as is or cited in another guidance document to save space and shorten the document.

Section 7 (question 1) - A flow chart of the various options would be a useful addition to illustrate the different directions that can be taken.

Sections 7 and 8 (question 3) - The use of the marine alga Ulva to diagnose ammonia is excellent. But no such "test species" is provided for freshwater. Consider including freshwater algal or macrophyte species for this same application. Perhaps the aquaculture literature may have some references that are useful here. Or perhaps this would be an area of future research. My feeling is that just about any relatively tolerant freshwater species should work (e.g., Anacharis, an aquarium plant). Also, I have used Gracilaria, a Gulf marine species to reduce ammonia in aquaria. It is quiet effective. Consider "opening it up" to researchers to consider use of other species as there is no particular reason to limit species to Ulva.

Section 8 (question 3) - Consider some discussion on use of elutriate tests. Pore water is quite finite in quantity and large volumes of sediment are needed in some cases to test pore water. With elutriate testing, one can add reconstituted water or site water in a 1:3 or 1:4 ratio with sediment. The water/sediment combination is then mixed. The Region 6 lab conducts elutriate tests and mixes the water/sediment for 24 h (end over end). If large sample volumes can not be collected, this may be a useful approach to obtain necessary volume to test. Research in collaboration with the Cincinnati lab has shown a good relationship between elutriate and bulk sediment test reslults.

Some specific comments which may aid in cleaning up the document are as follows (by page number):

vii - In section 9, space needed between Phase II and Sediment.
1 - In introduction, EPA 1996 is cited--but there are two documents as EPA 1996 in the references cited. Suggest designating as a and b and cite accordingly.
4 - Suggest deleting last sentence of 1st paragraph.
10 - 3rd paragraph should say "...supply of clean fresh or saline water (depending on the medium being tested)...
13 - Spacing is off in Table 6-1. Also, are all these footnotes necessary?
14 - Ist sentence under 1st bullet: coefficient should be plural.
17 - Mercenaria (genus and species) , and Menidia beryllina (species) are misspelled one or more times.
18 - Methods cited are numbers in parentheses whereas references in references cited section are listed alphabetically.
25 - Any guidance on selecting uncontaminated sediments would be useful.
26 - Why are there no freshwater algal or macrophyte species provided analagous to Ulva which could provide for ammonia removal for freshwater sediments?
47 - 3rd paragraph starts with "In determine" (should be In determining...).

48 - Not sure what "egregiously" means.
51 - In 3rd paragraph, the following sentence was unclear: "However, inclusion of these manipulations greatly increases..."
63 - In first full paragraph, 1st sentence, include both papers in same parentheses.
65 - In 4th line, should say "graduated".
76 - In 1st paragraph, give units for ammonia EC50's (mg/l).
84 - In next to last sentence, note typo" "showshow."
96 - 20% salinity should be 20 o/oo (parts per thousand).
118 - Note that Ankley et al. 1990b comes before 1990a.
120 - Burton initials are G.A., not G.A.J., unless he has changed them recently.
121 - Note two colons in Ericson citation.
123 - In Leonard citation, shouldn't Avs be capitalized (AVS)?
125 - Throughout literature cited section species names are capitalized incorrectly, e.g., see Pillard and DuFresne (2000).
127 - Two U.S. EPA 1996 documents are listed--should be designated as 1996a and b.