From: PETERSON Jenn L
To: Eric Blischke/R10/USEPA/US@EPA
Cc: Joe Goulet/R10/USEPA/US@EPA
Subject: RE: Agenda for October 10, 2006 Meeting
Date: 10/02/2006 01:52 PM

Eric,

Here are some thoughts:

On the whether the data is representative or not, there are some questions (in addition to the "did we correctly find and characterize the plume") that should be asked for the risk assessment. These are:
-Were all the analytes of interest at a site analyzed for (including bioaccumulatives)?
-Were detection limits met in all cases such that they are below the water threshold values (for both total concentrations and dissolved) and thresholds for bioaccumulation from water?
-Was the method of collection most representative of organism exposure? (e.g. grab versus time-integrated). A sub question - were the results from the trident and peepers different? Did the differences (or similarities) vary depending on the contaminant (e.g. bioaccumulatives, PAHs, metals, VOCs)?

[I have not done this evaluation myself yet. I know, I know - you think we should be all over this.]

Here are some thoughts on the agenda. It may be better to discuss. I know these are agenda items, but I have given my two cents below. Again, I think it is important to focus the discussion on what is needed to define risk for TZ water, and be clear that what we do about it may be a separate evaluation needing additional characterization information.

-Jennifer

-----Original Message-----
From: Blischke.Eric@epamail.epa.gov [mailto:Blischke.Eric@epamail.epa.gov]
Sent: Thursday, September 28, 2006 12:10 PM
To: PETERSON Jenn L
Subject: Agenda for October 10, 2006 Meeting

Jennifer, since you are the most outspoken on the TZW risk framework topic, I would like to work with you on developing an agenda for the 10/10 TZW meeting. Based on our discussion yesterday, here is what I am thinking. It would be good if this discussion was facilitated by some real data. I think that there is general agreement that the data is representative. However, Matt is checking with some of the upland PMs to confirm this.

Let me know what you think. Once we firm things up a bit, I will work with Bill Locke to finalize.

Thanks, Eric

Risk Framework for TZW

Development and Application of Initial PRGs and Screening Levels - reach agreement on the values that we are comparing TZW to and how we will be performing the evaluation (e.g., point by point estimate) Maybe we should discuss how the evaluation would or should be different for initial PRGs or Screening Levels. At this point in the evaluation, I would say the process should not be different. Why are we focusing on initial PRGs (that are more limited) when we have not yet done a risk screening? A process focused on initial PRGs may not properly evaluate other contaminants of concern at the site (e.g. PAHs - there are no AWQCs).

HHRA - Direct
ERA - Direct
HHRA - Indirect
ERA - Indirect

SLs vs Initial PRGs - discuss the distinction - which SLs or initial PRGs would demonstrate risk. Which ones would lead to more data collection. Yes, if they are not going to use other SLs to demonstrate risk, then we will need to have a broader discussion about bioassay testing.

Evaluation of other LOE (e.g., bioassays, application of BSAFs and TRV comparison, comparison of bulk sediment data to SQGs) . How can this information be used in lieu of additional data collection. How to we ensure that all relevant exposure pathways are covered. Do we have an ideal of other LOE we would like to see (I am assuming you mean in addition to comparison to water threshold values)? I may not be sure about what is meant by the options listed. Comparison to bulk sediment SQGs would not be a LOE for TZ water risk. By BSAFS and TRV comparison to you mean in evaluating indirect effects (e.g. bioaccumulation) from bulk sediment? Maybe we should be clear which LOE are related to bulk sediment, and which are to TZ water. And, then of course if and when one can inform the other.

Identification of Additional Data Needs

TZW show risk and other LOE demonstrate risk - what data might be required, if any to tease out contribution of sediment vs. groundwater.

I really think you are not talking about "teasing" out the risk, but rather what to do about it. Risk would be demonstrated if either TZ water or bulk sediment toxicity testing exceeded thresholds, and the discussion should then turn to "what do we should do about it", which may be more of a FS question. This might require more analysis of the migration of contaminants from the upland to the in-water, and understanding the contribution of any sediment bound contamination to the TZ water concentrations.

<u>Maybe we could focus on:</u> What tools do we have to determine TZ water risk? When would the different tools be used to define TZ risk?

-Comparison to water threshold values (first step)

-Refine threshold values where there is low confidence in the identified values (e.g. LWG only wants to use AWQC) or where no values exist (e.g. TPH). Tools include bioassay testing (in-situ or in the laboratory).

-Determine the toxicity of mixtures of contaminants in TZ water.

TZW show risk and other LOE do not demonstrate risk or risk is inconclusive - what data is required to confirm presence of absence of risk.

Risk is demonstrated if TZW shows risk when compared to water threshold values. If these thresholds needs to be verified empirically, then bioassays on the water should be conducted. The empirical information will provide more definitive information on whether TZ is demonstrating a risk or not. However, when the how to bring the results of the bulk sediment tests has not really been discussed. Sediment toxicity testing is another line of evidence, but is evaluating another phase of the environment. These tests do not speak entirely to the toxicity of the water phase (or pore water) in that the lab, the water phase is present only as much as a now isolated static sediment / pore water environment. The water in the test is also constantly renewed. For some contaminants (esp.. metals and PAHs) it could be very likely that we could show no toxicity in the bulk sediment tox tests, but exceedences in water of the water threshold values. This, in my mind, would not diminish or invalidate the results of the water phase. If sediment toxicity results are used in a line of evidence, it still unclear to be how this would be done. We cannot use the predictive model to estimate toxicity of sediment chemistry results in the vicinity of the ground water plumes - we can only use the results of the empirical tests. It is unclear if there are enough of these tests in the right locations to add any information.

<u>Maybe we could focus on:</u> Agreement that TZW is a separate line of evidence that should not be weighted less than other LOE. Data gaps may exist in LOE that need to be filled such that the evaluation is conclusive. Future discussions could focus on how best to reduce / remediate the risk.

TZW do not show risk and other LOE demonstrate risk - is additional data collection required or do we conclude that risk is best evaluated based sediment data and LOE.

If TZ water shows no risk (I am assuming you are talking about both indirect and direct pathways), and we are confident that the data collected meets the DQOs for the risk assessment, then we would rely on any demonstrations of risk from other LOEs. Additional data would not be required unless there were data gaps in the TZ water related to analytes, detection limits, etc.

<u>Maybe we could focus on:</u> Getting to this point. Have all relevant exposure pathways been evaluated for the site for TZ water? We have discussed direct pathways a lot (bulk sediment toxicity testing; comparison to water threshold values), but we have not discussed how indirect pathways should be evaluated for TZ water.

-When should indirect effects be considered? What contaminants?

-Comparison of water concentrations to water data that consider indirect effects (bioaccumulation)

a). Human health fish consumption AWQCs

b). AWQCs or eco numbers that already exist that include bioaccumulation potential from water

c). Develop water screening number that consider the potential for indirect effects by taking using the water concentration, BCFs and BAFs to estimate exposure to invertebrates, fish and wildlife. Use this evaluation as an initial screening.

-A focused evaluation of available tissue data - clam, crayfish, sculpin data. If data is collected in an appropriate area to evaluate TZ discharge, concentrations in tissue below thresholds (to organism itself and up the food chain), then the area would screen out for indirect effects.

-Identification of data gaps

TZW doe not show risk and other LOE do not demonstrate risk or risk is inconclusive - is additional data collection required or do we conclude that there is no risk.

We would conclude there is no risk if both direct and indirect pathways were evaluated. For example, bioaccumulatives may not show a risk for the bulk sediment bioassays and water screening (both short term toxicity tests), but indirect accumulation of the contaminants may occur to levels that are above risk levels. We would have to identify this through the tissue data - the clam data would be especially useful given there are several samples throughout the ISA, some of which may line up with our TZ water areas of concern, or through a food web model evaluation. This is why the clam tissue residue line of evidence is still important.

<u>Maybe we could focus on:</u> Same as above, but getting to agreement that other LOEs do not demonstrate risk. This may be more for another discussion on the benthic interpretive approach and the ERA.