From: ANDERSON Jim M
To: Eric Blischke/R10/USEPA/US@EPA; Chip Humphrey/R10/USEPA/US@EPA
Cc: MCCLINCY Matt; GAINER Tom; POULSEN Mike; PETERSON Jenn L
Subject: RE: Revised Portland Harbor RAOs
Date: 03/03/2009 10:23 AM

Eric,

1st, in our 2/25 TCT/RAO mtg you asked DEQ to provide you with the potential ARARs the State thought were important for the PH project. As I said in the mtg, perhaps the 2 most important State ARARs to DEQ are:

1) Hot Spots of Contamination- Hot spots are defined in OAR 340-122-115(32) & included in ORS 465.315. The FS should consider preference for treatment of hot spots. In the end, we may see that DEQ-defined hot spots are similar to EPA-defined "principle threat" & may be handled in a similar manner. The LWG's 4/04 PH Programmatic Work Plan (Appendix A, Attachment A1, Table 2) lists Oregon's Environmental Cleanup Act as a potential ARAR. The table includes a summary of the law & discusses the preference for treating hot spots. So, I think State hot spots are already on the table.

2) Acceptable Risk- EPA uses a 10-4 to 10-6 acceptable risk range for carcinogens. DEQ uses the bright line of 10-6 for individual carcinogens & 10-5 for multiple carcinogens. There's a probability that DEQ's risk levels will be more stringent that EPA's & therefore ARARs. However, DEQ's bright line standard may be waived as being technically impracticable (i.e., too expensive to cleanup low-level risk). The description of Oregon's Environmental Cleanup Act in Table 2 in the 4/04 Work Plan includes a discussion of how the State defines acceptable risk. So, again, I think State acceptable risk levels are already on the table.

2nd, you asked for comments on your 2/25/09 "Revised PH RAOs". Here are DEQ's comments:

1) RAO 1- Sediment- Include "transient exposure" as part of the RAO.

2) RAO 2- Beach- Include "dermal contact" in Exposure Pathway. Include "transient exposure" as part of the RAO.

3) RAO 3- Surface Water- DEQ's Water Quality regulations (340-

041-0344) designate domestic water supply as a beneficial use of the Lower Willamette River. However, Table 340A in the cited OAR footnotes that beneficial use as "with adequate pretreatment and natural water quality that meets drinking water standards". The RAO as stated does not define the point of compliance & leaves the question of point of compliance open. As you know, DEQ does not support the ARAR point of compliance for MCLs as GW discharging to the river, TZW, or surface water.

4) <u>RAO 4- TZW</u>-

A) Text in the Exposure Pathway column suggests that humans will ingest TZW. TZW may load surface water & surface water may be used for drinking water (after adequate pretreatment), but we don't expect humans to drink TZW.

B) DEQ's Water Quality regulations (340-041-0344) designate domestic water supply as a beneficial use of the Lower Willamette River. However, Table 340A in the cited OAR footnotes that beneficial use as "with adequate pretreatment and natural water quality that meets drinking water standards". The RAO as stated does not define the point of compliance & leaves the question of point of compliance open. Again, DEQ does not support the ARAR point of compliance for MCLs as GW discharging to the river, TZW, or surface water.

C) The RAO essentially says…, reduce COC concentrations in TZW to acceptable exposure levels in BAZ & to levels that comply with ARARs & are protective of humans that consume fish & shellfish. Again, this seems to be a point-of-compliance issue. There will need to be some modeling or loading analysis to go from TZW concentrations to fish tissue.

5) <u>RAO 6, 8, & 9- Ecological Biota Ingestion (prey)</u>-These 3 RAOs are generic in that they say "protective of fish, shellfish & wildlife at the site" when discussing exposure to media (e.g., water, sediment). It may be assumed that this encompasses both direct contact & bioaccumulation (as stated in the "Exposure Pathway" column), but perhaps this should be more explicit since there is no RAO specifically for exposure to contaminated prey (biota). This RAO would be similar to the human health RAO on consumption of fish & shell fish at the site, but for wildlife.

6) <u>RAO 7- Riparian Soil</u>-

A) Do you think all project stakeholders have a common definition of "riparian soil"? I think this exposure media should be "beach" not riparian soil. Jennifer points out that EPA's Problem Formulation defined sediment as extending up to the mean high water line, &

defined riparian soil as from mean high water line up to ordinary high water & beyond to the upland facility. This is where we made the distinction between a primarily terrestrial-dominated environment & the in-water-dominated environment. In order for this definition & RAO to work, EPA must continue (as in the Problem Formulation) to define the "sediments" of the Site as up to & including mean high water line. The CSM indicates exposure to this area to sandpiper, fish, shellfish, & invertebrates. The "Exposure Pathway" needs to be clarified to address these 2 types of exposure- a) up to mean high water to aquatic organisms & sandpipers, & b) above mean high water to terrestrial exposures (which is really an upland source control & upland risk assessment issue).
B) If you're dropping "fish, shellfish, & wildlife" (to be consistent with the Problem Formulation) why are you calling out invertivorous birds (sandpipers) only? Why not other terrestrial eco receptors?

7) **RAO 10- Source Control**- Why is this is the only RAO to mention ARARs in the Exposure Pathway column? With the issues of ARAR point of compliance, I'd drop the reference to ARARs.

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-----Original Message-----
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Sent: Wednesday, February 25, 2009 3:30 PM
To: Shephard.Burt@epamail.epa.gov; Humphrey.Chip@epamail.epa.gov; Davoli.Dana@epamail.epa.gov; GAINER Tom; Grepo-Grove.Gina@epamail.epa.gov; PETERSON Jenn L; jeremy_buck@fws.gov; ANDERSON Jim M; Goulet.Joe@epamail.epa.gov; Smith.Judy@epamail.epa.gov; Koch.Kristine@epamail.epa.gov; MCCLINCY Matt; POULSEN Mike; Fuentes.Rene@epamail.epa.gov; Robert.Neely@noaa.gov; Sheldrake.Sean@epamail.epa.gov; tomd@ctsi.nsn.us; csmith@parametrix.com; rgensemer@parametrix.com; rose@yakama.com; erin.madden@gmail.com; jay.field@noaa.gov; Cora.Lori@epamail.epa.gov; Ader.Mark@epamail.epa.gov; audiehuber@ctuir.com; Lisa.Bluelake@grandronde.org;

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Subject: Revised Portland Harbor RAOs

Attached is a set of revised RAOs for the PH site. I have made three changes to the RAOs sent out earlier today:

1) Changed the wording regarding the reduction of COC concentrations

from: "Reduce COC concentrations to in [media of interest] to levels that are protective...." to "Reduce COC concentrations to in [media of interest] to acceptable exposure levels that are protective...." This change is consistent with language in the NCP which states for human health and carcinogens for example:

For known or suspected carcinogens, acceptable exposure levels are

generally concentration levels that represent an excess upper bound

lifetime cancer risk to an individual of between 10-4 and 10-6 using

information on the relationship between dose and response.

2) Changed the riparian soil RAO to be consistent with the problem formulation for the baseline ecological risk assessment which has identified riparian soil as a complete exposure pathway only for the spotted sandpiper. The RAO now reads:

Reduce riparian soil COC concentrations to acceptable exposure levels

protective of invertivorous birds at the site.

3) Made changes to the downstream migration RAO to eliminate references to sediment and to protective levels. I believe that

this is broader is

scope:

To the maximum extent practicable, minimize the long-term transport

of COCs in the Willamette River from the site to the Columbia River

and the Multnomah Channel.

Please look these over. I would like to receive comments on these by COB, Monday, March 2, 2009.

Thanks, Eric

(See attached file: PHRAOs022509B.doc)