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EMAIL REGARDING U S EPA REGION III COMMENTS ON THE DRAFT SITE 7 OLD DUPONT DISPOSAL AREA REMEDIAL INVESTIGATION REPORT NWS YORKTOWN CHEATHAM ANNEX FISC WILLIAMSBURG VA
3/10/2015
U S EPA REGION III

From: Hoover, Gerald [mailto:Hoover.Gerald@epa.gov]
Sent: Tuesday, March 10, 2015 5:06 PM
To: Ivester, Marlene/VBO; scott.park@navy.mil; Sawyer, Stephanie/VBO; Wade.Smith@deq.virginia.gov
Subject: EPA Draft Comments on Site 7 RI Report

Team,

Attached are draft comments on the Site 7 RI Report from BTAG, EPA Hydro, and EPA Tox. As we've done in the past, I would like to set up a conference call, after you've had a chance to review these, and discuss the comments.

Please advise as to an appropriate time to have a confernence call.

Thanks,

Jerry

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Draft BTAG Comments on Site 7

Draft Hydro Comments on Site 7

Draft TOX comments Site 7 RI.c
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Draft BTAG Comments on Site 7 RI Report

In response to your request, representatives of the BTAG have completed the review of the subject document and offer the comments presented below. It should be noted that BTAG focused its review on Appendix H: Baseline Ecological Risk Assessment.

1. Page H-4, Section H.2.2 Analytical Data Used in the ERA: The text indicates the backfill material "…likely contains lower chemical concentrations…" than original site soil. The basis of this statement should be provided. If the statement cannot be supported it should be deleted.

2. Page H-6, Section H.2.3.3 Exposure Pathways and Routes: The list of "…aquatic biota (aquatic/benthic invertebrates, fish, and reptiles)…" needs to include plants (as shown in table H-4) and amphibians.

3. Page H-8, Section H.2.3.3: The text states "Amphibians are unlikely to occur on this site based on the salinity of the York River." However, Site 7 is approximately 400 feet from Cheatham Pond. This would be well within the distance amphibians are known to travel (e.g., up to 30 kilometers). The quoted statement only describes a portion of the potential "sources" of receptors. Amphibians need to be included as an ecological receptor, even if only in the uncertainty section.

4. Page H-13, Section H.3.3.4 Aquatic Plants: This section indicates that tissue concentrations for only above ground vegetative portion of plants were estimated. Since some ecological receptors consume the roots (tubers), this only represents a portion of the potential exposure. It should be noted that the contaminant concentrations in roots may be different than the above ground portion of the plant.

5. Page H-19, Section H.5.3.1 Comparison with Ecological Screening Values: Under soils, the text indicates mean soil concentrations are compared to soil ecological screening values (ESVs) for plants and invertebrates. Because both of these ecological receptor groups have no or limited mobility, maximum concentrations compared with ESVs need to be used to identify contaminants of potential concern (COPCs).

6. Page H-21 Section 5.4.3 Groundwater: Even in the baseline ecological risk assessment, the maximum concentrations are used to identify COPCs likely to potentially pose risk to ecological receptors.

7. Section H.5.5.2 on page H-22 of Appendix H states that based on the mean concentration, gamma-chlordane exceeded its ecological screening value by a factor of 2.31 in groundwater. The section further states that gamma-chlordane was not selected as a final contaminant of potential concern since the mean hazard quotient would be below 1 assuming a dilution factor of 10, and does not appear to be site-related since it was

detected in samples from upgradient wells at similar concentrations and was not detected in site soils. The use of a dilution factor is not appropriate for receptors in the hyporheic zone where receptors would be exposed to undiluted groundwater. While the data suggest that gamma-chlordane in groundwater may not be related to Site 7, there may be an upgradient source that needs to be identified and investigated.

8. Page H-23, Section H.6 Uncertainties: The reporting limits discussion is not adequate. The text states "Because these chemicals were not detected, they are not known to be present on the site…." When a reporting limit exceeds the ESVs and there is no background value, a conclusion about whether or not the chemical is potentially present at levels of concern cannot be made. The chemicals that meet this criteria cannot be eliminated as COPCs.

9. Table H-24 Ecological Screening Statistics – Site 7 Soil: The ESVs for DDD, DDE, and DDT are not adequately protective. All three ESVs need to change to the EcoSSL value for DDT and metabolites (21 µg/kg). This means that DDT would be a Step 2 and 3a COPC because the maximum detection limit exceeds the ESV and there is no background value.

10. Table H-24: Regarding plants and invertebrates, this table identifies 17 VOCs, 18 SVOCs, three pesticides, five explosives, and seven inorganics that are COPCs. The reasons that support these chemicals as COPCs include (a) because no ESVs exist, (b) the maximum detection limit is greater than the ESV, (c) the detected concentration exceeds the ESV and background, or (d) the detected concentration exceeds the ESV and no background value exists.

11. Table H-33 Ecological Screening statistics – Site 7 Groundwater: This table shows the maximum HQ for 33 chemicals exceeded one, with a range from 1.02 to 182. Please adequately explain why these groundwater contaminants were not carried forward as COPCs.

12. Table H-34 Exceedances – Site 7 Groundwater: This table shows that three chemicals (4,4'-DDD, gamma-Chlordane, and manganese (total and dissolved)) at sample location CAS07-MW04-0111 had concentrations exceeding the surface water ESV and background (when available) in 2011 but not 2014. Additional data would be required to support that groundwater concentrations of chemicals would likely not cause risk to ecological receptors during long term monitoring.

Thank you for the opportunity to review this document. Please contact me at x 2380 or John McCloskey at (804) 824-2404 if you have questions or wish to discuss these comments.

Draft Hydro Comments on Site 7 RI

I have reviewed the Remedial Investigation for site 7 at NWS Yorktown Cheatham Annex, including the soil data from 2008, the groundwater monitoring data from 2011 and the current 2014 groundwater data from the existing wells and newly installed wells MW-8 and MW-9. This investigation report shows that the source of groundwater contamination (buried waste and debris) were removed from site 7, the soil data do not indicates a potential soil to groundwater migration pathway, and that the groundwater seems to be properly characterized. Hence, I agree with the recommendation in the report to develop a Focused Feasibility Study to evaluate remedial alternatives for the COCs (2,4-DNT, 2,6-DNT, TCE and Chloroform) identified in the groundwater during this remedial investigation at site 7.

Tox Comments Site 7 RI

Thank you for the opportunity to review the draft *Site 7 – Old DuPont Disposal Area Remedial Investigation Report* for the Naval Weapons Station Yorktown, Cheatham Annex. Overall, the analysis and conclusions within the report appear appropriate. Within the Human Health Risk Assessment, the conceptual site model, the identification of COPCs, the description of the exposure and toxicity assessment, and the risk characterization were sufficient and accurate. The recommendation to develop a focused feasibility study to address site-related COCs (TCE, 2,4-dinitrotoluene, 2,6-dinitrotoluene, and chloroform) is supported by the evidence and assessment. The comments below are for your consideration.

Primary Concern:

1. Page H-19, Section F.8 (as well as Section F.6.2.9 and F.6.2.10) – According to the COC selection criteria, COCs are COPCs that contribute "a carcinogenic risk greater than 1E-6 to a cumulative carcinogenic risk that exceeds 1E-4." For the future resident, the cumulative carcinogenic risk is 3E-4 (which exceeds 1E-4), therefore:
    - Future Resident, 2nd bullet – cancer risk due to chromium in soil (1E-4) exceeds 1E-6
    - Future Resident, 6th bullet – cancer risk due to TCE in groundwater via vapor intrusion (2E-5) exceeds 1E-6; however, TCE is a COC in groundwater due to HI exceedance.

    Further consideration of chromium in soil as a COC is requested.

Additional Comments:

2. Section 4, Nature and Extent of Contamination – Recommend deletion of references to background in this section. The purpose of this section, as outlined in the first sentence, is to evaluate "the nature and extent of contamination" with comparison to screening values. The discussion of background levels introduces a complicating comparison at this stage of the RI report, as comparisons to background are to be made only after risk calculations have been conducted (as the RI report states).

3. Page H-5, Section F.3.3, *COPCs* and Appendix G, Table 2-5 – endosulfan II, gamma-chlordane, and dioxin have HLC > 1E-5 and should be considered in the groundwater-air exposure scenario.

4. Page H-6, Section F.4.1, *Conceptual Site Model for Human Health* and Figure F-1 – the recreator receptor is characterized as current/future in Figure F-1; however, the bullet in Section F.4.1 states the recreator receptor as future. Please correct in Figure F-1 as only future.

5. Page H-16, Section F.6.2.10, *Future Industrial Worker* – The cumulative HI (RME) for groundwater is 3 (2.0 for VI and 0.5 for groundwater) and not 2 as provided in the sub-bullet. In addition, the HI for TCE in potable groundwater was 0.5, which is greater than 0.1 to a cumulative target organ HI that exceeds 1 (in this case, the HI for immune and heart effects was 3E+0), and TCE should be characterized in the last bullet of this section as a COC for the VI pathway and potable groundwater. This change must also be reflected in Section F.8 under industrial worker (4th bullet).

6. Page H-17, Section F.7.3, 1st paragraph – Delete, "The noncarcinogenic toxicity factors are most likely an overestimate of toxicity." This statement is conjecture, as the toxicity factors are estimates but the direction of estimation, either over- or under-, is impossible to ascertain.

7. Page H-17, Section F.7.3, 2nd paragraph – Delete, "however, most of the experimental studies indicate the existence of a threshold level." This is incorrect. A threshold for carcinogenicity cannot be determined by individual experimental study, and the statement that 'most' experimental studies support a threshold is not supported.

8. Page H-18, Section F.7.3, 5th paragraph – Delete, "however, these values should be interpreted cautiously because USEPA has not approved these toxicity values." PPRTVs <u>are</u> supported by the Agency, as evidenced by their availability on an Agency website.

9. Appendix G, Table 2.6 and 2.7 – A VISL value for trans-1,2-dichloroethene could not be located. Please clarify.

10. Appendix G, Table 7.7 – The cancer risk for the adult from water vapors at showerhead need to be calculated for chloroform and TCE, 8.7E-7 and 2.7E-6, respectively, because this route of exposure is not evaluated for children. The lifetime cancer risk for this route is then removed from Table 7.9.

11. Appendix G – some of the total organ HI sums were incorrect and, although the conclusions do not change, the sums should be accurate.
    - Table 9.3 – total neuro HI = 9E-3
    - Table 9.3 – total gastro HI = 8E-3
    - Table 9.4 – total gastro HI = 5E-3
    - Table 9.5 – total neuro HI = 9E-3
    - Table 9.5 – total gastro HI = 8E-3
    - Table 9.6 – total gastro HI = 5E-2
    - Table 9.8 – total neuro HI = 6E-1
    - Table 9.10 – total neuro HI = 9E-2
    - Table 9.10 – total immune = 3E+0
    - Table 9.10 – total heart = 3E+0

Thank you for the opportunity to review this report. If you have any questions, comments, or concerns, please contact me.