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Staszak, Janna/VBO

From: Burchette.John@epamail.epa.gov
Sent: Thursday, July 03, 2008 10:21 AM
To: timothy.reisch@navy.mil; Staszak, Janna/VBO; Henderson, Kimberly/VBO; walt.j.bell@navy.mil; kmdoran@deq.virginia.gov
Subject: Site 2 ERI Tox. Comments
Attachments: DraftERI~Site2.doc

Everyone,

Tim/Walt, thanks (again) for your opportunity to comment on the Site 2 ERI. Sorry about the delay. Here are EPA Tox. comments. BTAG should be next week.

Thanks,

John Burchette(3HS11)
Remedial Project Manager
NPL/BRAC/Federal Facilities Branch
U.S. Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103-2029
Phone: 215.814.3378
Fax: 215.814.3025
Burchette.john@epa.gov

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103

1. Executive Summary (ES), XI, Combined Surface and Subsurface Soil. The paragraph reads, "Based on the qualitative evaluation of the invalidated saturated subsurface soil samples there are potential risks from TCE, cis-1,2-DCE and VC for a future construction worker, and potentially, although less likely for a future industrial worker or resident, with exposure to subsurface soil." Please explain why a quantitative analysis of subsurface soil is not being performed? In addition, please explain why the subsurface soil samples are not validated? If the subsurface soil samples were not validated then what subsurface soil samples were used to assess risk from the combined exposure to surface and subsurface soils? Since subsurface soil samples were used to assess combined risk (surface and subsurface soils) these same subsurface soil samples should be used to assess risk from exposure to subsurface soil to the construction and industrial workers.

2. Section 2.2.1, Historical Land Use, page 2-2. Since previous site history indicate waste ordnance materials were disposed at the site and 1,1,1-trichloroethane (1,1,1-TCA) has been detected in sediment, 1,4-dioxane analysis is highly recommended.

3. Section 5.1.5, Subsurface Soil Sampling, Volatile Organic Compounds, page 5-4. The first paragraph refers to a TCE detection of 12 ug/kg at boring location SJS02-SB06. However this boring can not be located on Figure 5-11? According to Table C-2 this subsurface soil sample was collected on 4/21/99.

4. Table 5-5. The table is entitled "Shallow Groundwater" however the reported depths suggest deep groundwater samples. Were these samples used to assess shallow groundwater risk? When comparing these sample identifications with the Summary of Data Used in Baseline Human Health Risk Assessment (Table 7-1)it is unclear why some of these samples are listed under shallow aquifer groundwater samples (SJS02-MW03S-07B, SJS02-MW04S-07B, SJS02-MW05S-07B, SJS02-MW07S-07B, SJS02-MW08-07B) when they are clearly identified on Table 5-5 as deeper groundwater samples?

5. Section 7.1.1, Data Evaluation and Selection, Data Summary, Soil, page 7-2. EPA recommends further subdivisions of data summary for soils and groundwater to avoid reader confusion. The data summary for soils should be divided into surface soil and subsurface soil while the data summary for groundwater should be divided into shallow and deep groundwater.

6. Section 7.1.1, Data Evaluation and Selection, Data Summary, Soil, page 7-2. The paragraph reads, "The Expanded RI soil samples were collected to confirm the MIP response and vertically delineate VOCs in the aquifer and not to quantitatively assess risk; therefore, they were not validated. However, two of the soil samples were collected

at depths that a receptor could be exposed. One of these samples, SB04 collected from 5.5 to 6.5 bgs, had elevated concentrations of TCE, cis-DCE, and VC." Please indicate where this sample can be located? According to Table 5-2 (Subsurface Soil Detections) and Table C-2, SB04 was collected on 6/25/97 and TCE, cis-DCE and VC were not detected. In addition, subsurface soil quantitative risk evaluations should be performed using the same subsurface soil data that was used to evaluate risk for combined soils (surface and subsurface soils).

7. Section 7.4.2, Risk Assessment Results, Current/Future Adult Trespasser, page 7-14. The report should provide the Hazard Index (HI) for each evaluated media (e.g., soils, sediment, and surface water). In addition, when RME risk is exceeded, the associated central tendency results should be provided.

8. Section 7.4.2, Risk Assessment Results, Future Adult Resident, page 7-15. Hazard Index and carcinogenic risk should be provided for all media and pathways (ingestion, dermal, vapor intrusion).

9. Table 7-1, Summary of Data Used in Baseline Human Health Risk Assessment, Subsurface Soil. Please explain why the listed subsurface soil sampling data was not used to assess exposure to the construction and industrial workers?

10. Table 7-1, Summary of Data Used in Baseline Human Health Risk Assessment, Groundwater. According to Table 5-5 the following samples were not collected at shallow deeps and thus, should not be included within the shallow groundwater data sets; SJS02-MW03S-07B, SJS02-MW04S-07B, SJS02-MW05S-07B, SJS02-MW06S-07B, SJS02-MW07S-07B, SJS02-MW08S-07B. All of these samples were collected from 5/29/07 – 6/12/07 for CVOC analysis only.

11. Table 7-1, Summary of Data Used in Baseline Human Health Risk Assessment, Groundwater. According to the table sample SJS02-MW10S-07B was collected on 6/12/07 and according to Table 5-5 this sample was collected on 6/6/07. Please correct this discrepancy.

12. Table C-1, page 6 of 8. The reported concentration of Aroclor 1260 at sample location SJS17-SS03-000 (2/14/01) is qualified with a "C" please include the definition of this qualifier within the provided legend.

13. Table C-2, page 2 of 8. The reported volatile organic concentrations are erroneous and are clearly a laboratory error.

<u>RAGS D Table Comments</u>

14. Table 1.0. The Conceptual Site Model identifies Indoor Air as a potential pathway for exposure. However, this pathway is not quantitatively evaluated in the risk assessment. Please include the quantitative evaluation of this pathway.

15. Table 2.5, Soil*. According to the table the maximum number of samples for most VOCs and SVOCs is 32 and the maximum number of samples for metals is 35. However, according to Table 7-1, the maximum number of VOCs and SVOCs is 33 samples and the maximum number of samples collected for metals is 36.

16. Table 2.8, Groundwater Air. This table is incomplete and does not include all the contaminants that were evaluated based on the contaminants listed as the Chemical of Potential Concern on Table 3.8RME.

17. Table 3.5RME, Soil*. The Exposure Point Concentrations (EPCs) could not be duplicated since the total number of subsurface soil samples could not be determined? According to Table 7-1, there are 23 surface soil samples and 10 subsurface soil for VOCs and SVOC and 13 subsurface soil samples for metals. This equates to a total number of 33 samples for VOC and SVOC and 36 for metals. See comment #12.

18. Table 3.8RME, Groundwater Air. The Exposure Point Concentrations (EPCs) could not be duplicated since it is unclear what groundwater samples were used to quantify concentrations. See comment #10.

19. Table 4.9RME, Deep Groundwater. Please explain why these parameters are provided when deep groundwater was not evaluated?

20. Table 5.2, Non-Cancer, Inhalation. An incorrect RfD is provided for 1.4-dichlorobenzene. The correct value should be 2.3E-01.

21. Table 7.4 and 7.5RME, Adult and Child Resident, Dermal Absorption. The hazard quotient for mercury, nickel, thallium, and vanadium can not be reproduced. Please provide the ABS value that was used to calculate risk?

22. Table 7.4RME, Adult Resident, Dermal Absorption. The hazard quotient for RDX, arsenic, iron, lead, and manganese can not be reproduced. Please provide the ABS value that was used to calculate risk?

23. Table 7.4RME, Supplement B. Many of the listed Beta (B) values do not agree with the B values provided in RAGS E, September 2001 therefore, the associated DAevent and subsequent risk results could not be reproduced.

24. Table 7.4REME, Supplement D. Please recheck the algorithms used to yield the Calculated Inhalation Exposure (Einh) (mg/kg/shower). Although the Kl(VOC) (cm/hr) and KL (cm/hr) could be reproduced, the Kal (cm/hr), Cwd (mg/l), S (mg/m3-min) and Calculated Inhalation Exposure (Einh) could not be reproduced.

25. Table 7.5RME, Soil*, Air, Emissions from Soil, Child Resident. The hazard quotient can not be reproduced.

26. Table 7.5RME Supplement A. Many of the listed Beta (B) values do not agree with the B values provided in RAGS E, September 2001 therefore, the associated DAevent and subsequent risk results could not be reproduced.

27. Table 7.5RME, Child Resident, Shallow Groundwater. Although many of the Beta (B) values are incorrect, reported risk was still verified using the B values that were provided. Even when using the reported B values dermal hazard quotient risk results could not be verified although the DAevent value (Supplement A) could be reproduced. Please recheck all algorithms.

28. Table 7.7RME, Soil*, Construction Worker, Dermal Absorption. The hazard quotient for mercury, nickel, thallium, and vanadium can not be reproduced. Please provide the ABS value that was used to calculate risk?

29. Table 7.7RME, Shallow Groundwater in Excavation. Dermal Absorption. The hazard quotient for RDX, arsenic, iron, lead, and manganese can not be reproduced. Please provide the ABS value that was used to calculate risk?

30. Table 7.7RME, Supplement A. The DAevent for RDX, arsenic, iron, lead, and manganese could not be reproduced.

31. Table 7.8RME, Soils, Industrial Worker, Dermal Absorption. The hazard quotient for mercury, nickel, thallium, and vanadium can not be reproduced. Please provide the ABS value that was used to calculate risk?

32. Table 9.1RME, Sediment, Adult Trespasser. The risk results (carcinogenic and non-carcinogenic) do not agree with the results on Table 7.2RME.

33. Section 9.1, Human Health Risk.
    - Although CTE risk can be used to assist with remedial decisions they should never be used solely to risk manage contaminants.
    - Since MW07S and MW10S were consistently identified as the monitoring wells with contaminant exceedances (chloroform, methylene chloride, 2-methylnapthalene, dibenzofuran, naphthalene, and 2,6-dinitrotoluene) these monitoring wells should be further investigated since they are both located within the area of the highest contaminant detections. In addition, semi-volatile contaminants (SVOCs) typically associated with asphalt paving includes benzo(a)pyrene, benzo(a)anthracene, and benzo(b)fluroanthene.
    - Please keep in mind, the use of a single test statistic is not always sufficient when evaluating background data. The most appropriate test statistic to use is typically determined by the data set. Since most environmental data tend to be non-parametric, recommended test statistic for this data generally include Wilcoxin Rank Sum and/or Mann Whitney U-test. These recommended test statistics should be used when risk managing contaminants.