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LETTER AND U S NAVY RESPONSE TO VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY COMMENTS REGARDING DRAFT REMEDIAL INVESTIGATION ADDENDUM REPORT FOR SITE 11A JEB LITTLE CREEK VA
12/20/2010
CH2M HILL

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December 20, 2010

Mr. Paul E. Herman, P.E.
Remedial Project Manager
Virginia Department of Environmental Quality
629 East Main Street, 4th Floor
Richmond, VA 23219

Subject: Response to Comments, *Draft Remedial Investigation Addendum Report for Site 11a* at Joint Expeditionary Base Little Creek, Virginia Beach, Virginia.

Dear Mr. Herman:

On behalf of the Navy, CH2M HILL has prepared the following responses to comments received from VDEQ on the *Draft Remedial Investigation Addendum Report for Site 11a* at Joint Expeditionary Base Little Creek, Virginia Beach, Virginia.

1. Section 2.2: Please add a new paragraph addressing how the site was identified during the Site 11 RI investigation.

   **Response:** The following was added after the 2nd sentence of the 1st paragraph in Section 2.2: "Site 11a was identified in 1998 when volatile organic compounds (VOCs) were detected in groundwater from a Site 11 upgradient monitoring well (LS11-MW16D) during the Site 11 Supplemental RI (CH2M HILL, 2004). Groundwater samples were collected in 1999 in the Site 11a vicinity as part of Site 11 investigations to identify a potential upgradient source of VOCs. Consequently, the trichloroethene (TCE) groundwater contamination upgradient of Site 11 became identified in the Federal Facility Agreement as Site 11a, an Appendix A Site, in 2001 and was proposed for investigation under CERCLA."

2. Section 4.2: VDEQ's risk assessor could not complete a full evaluation of the conclusions presented in Section 6 as exposure parameters such as exposure duration and exposure point concentrations were not discussed in any detail in the report. Please include these and any other exposure parameters in an easily accessible table and insert all necessary text into Section 4.2.1 or elsewhere in Section 4.2 to support the data in the table. Also, please include the non-cancer hazard indices for all applicable constituents detected and discuss any non-cancer risks in relation to or in concert with the discussion of cancer risks especially if they overlap, i.e., a COI's non-cancer hazard outweighs its cancer risk.

   **Response:** Consistent with the discussion in Section 4.2.1, cancer risks were estimated using measured concentrations (maximum and minimum), the most current USEPA risk-based regional screening levels (RSLs), and the risk-ratio approach described in the Navy

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2000 guidance: *Overview of Screening, Risk Ration, & Toxicological Evaluation Procedures for Northern Division Human Health Risk Assessments*. The equation for estimating cancer risks and non-cancer hazards is provided in Section 4.2.1. An abbreviated discussion of the methods used to develop the PALs, including the exposure duration input parameters was provided in Section 4.1 with reference to the approved UFP SAP for a more detailed discussion. Additionally, although the term, "exposure point concentration" was not specifically used, it is stated in Section 4.2.1 that both maximum and minimum concentrations were used to estimate risks. Section 4.2.1 will be revised and a table will be added (Table 4-7) to clarify and concisely summarize the exposure parameters that were the basis of the cancer risk estimates; however, the reader will be referred to USEPA's on-line RSL User's guide (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/usersguide.htm) for a detailed discussion of the methods and input parameters used to develop RSLs.

3. Section 4.2.2: The table references are incorrect. Table 4-2 is associated with "Future Resident" and Table 4-3 with "Future Industrial Worker". Please correct.

   **Response:** Table references were corrected.

4. Section 4.3.4: In the 1st paragraph, change "sublab" to "subslab".

   **Response:** Text was revised accordingly.

5. Tables 4-9 and 4-10: Please insert the HIs for TCE even if it is below 1.0.

   **Response:** As mentioned in the response to Comment #2, the Navy 2000 guidance was followed and states "For chemicals that have both cancer and non-cancer effects, in general, the RBC is based on the cancer risk, and therefore only the cancer risk associated with that COPC is included in the risk ratio sum." Therefore, because for both PCE and TCE the lowest risk-based screening levels are based on cancer endpoints, only cancer risks were calculated. Additionally, consistent with the approved Sampling and Analysis Plan (CH2M HILL, 2009) and as discussed in Section 4.2.1, PALs and risk estimates were developed using the September 2008 USEPA residential air RSLs. Reference concentrations for the calculation of an inhalation hazard quotient associated with TCE were not provided on the September 2008 USEPA RSL table or the most current May 2010 RSL table. Due to the omission of a reference concentration on the RSL table, non-cancer hazard quotients for TCE were not calculated as part of the vapor intrusion assessment. No changes to the document were made.

6. Section 5.1: In the 2nd paragraph the slab thickness is 8 inches while Table 3-3 shows a slab thickness of 9 inches. Which is correct?

   **Response:** The thickness of the slab measured during Phase I was 9-inches, while the thickness measured during Phase II was 8-inches. The 1st sentence of the 2nd paragraph was revised to read: "Building 3606 is constructed of concrete and has a concrete slab level with the exterior ground surface that was estimated to be between 8 and 9-inches in thickness".

7. Section 6.2: Absent a UU/UE designation for the CERCLA site, shouldn't the recommendations also include discussion of a slubslab vapor venting system in future

buildings constructed on site? Also, the recommendations should include LTM of subslab vapor and/or indoor air to ensure the levels remain below risk screening levels.

**Response:** The recommendations section was revised to read: "Based upon the results of the risk assessment, no further action is recommended for Buildings 3606 and 3606A to address vapor intrusion from CVOCs in shallow groundwater at Site 11a. Due to the potential for concentrations of groundwater COCs (TCE and its daughter products) to temporarily increase during implementation of a groundwater remedy, resulting in potential short-term risks, it is recommended that a vapor intrusion monitoring plan be scoped by the Partnering Team for implementation during groundwater remedial action and LTM. Additionally, it is recommended that LUCs be implemented during groundwater remedial action to maintain current building uses, prevent activities that would compromise the integrity of the building envelopes, and prevent construction of additional structures at the site without further evaluation and/or implementation of mitigation measures until the groundwater remedial action is completed. It is assumed that following completion of the remedial action (achievement of groundwater clean-up goals), no potential for future risks from vapor intrusion will remain; therefore, monitoring and LUCs will no longer be necessary."

If you have any questions concerning these responses to comments, please feel free to contact me at (757) 671-6236.

Sincerely,

Adrienne Jones

Adrienne Jones,
Project Manager

cc: Mr. Bryan Peed/ NAVFAC Mid Atlantic
Mr. Jeffrey Boylan/ USEPA
Administrative Record File