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January 6, 2010

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Mr. Walter Bell, P.E.  
NAVFAC Mid-Atlantic OPHE3  
1510 Gilbert Street, Bldg N-26, Rm 3300  
Norfolk, VA 23511-3095

Subject: Corrections to St. Juliens Creek Annex Site 2 Final Documents  
Site 2 Expanded Remedial Investigation Report and Site 2 Feasibility Study  
Report  
St. Juliens Creek Annex, Chesapeake, Virginia  
Contract N62470-02-D-3052  
Navy CLEAN III Program, Contract Task Orders 0024 and 0054

Dear Mr. Bell:

During drafting of the Site 2 Proposed Plan, a discrepancy in the human health risk summaries between previous Site 2 documents was discovered. The Expanded Remedial Investigation (ERI) and Feasibility Study (FS) reports were reviewed in order to identify the source of the discrepancy and determine the correct result. The following provide an explanation of the discrepancies and proposed revisions to correct the errors and prevent future confusion:

- Following regulatory comment resolution on the draft Site 2 ERI report, chloroform and methylene chloride were retained as risk drivers in shallow groundwater, although they'd been initially proposed for risk management. In the final ERI, they were removed from the risk management section (ERI Section 9, Risk Management Considerations) but were not added to the text or figure summarizing the risk drivers (ERI Section 10, Conclusions and Recommendations). Therefore, ERI Figure 10-2 and Section 10 of the text have been revised to include chloroform and methylene chloride. Additionally, the ERI Executive Summary has been revised to reflect this correction. Please note, they were both carried through to the FS as risk drivers so no revisions to the FS were necessary.
- Following revision of the human health risk assessment (HHRA), which was updated between the draft and final versions of the ERI report to incorporate regional screening levels (RSLs) instead of risk-based criteria (RBCs); 2-methylnaphthalene and dibenzofuran dropped out of the HHRA as groundwater constituents of concern (COCs). However, ERI Table 9-1 was not updated and listed 2-methylnaphthalene and dibenzofuran as human health COCs in shallow

groundwater. Therefore, ERI Table 9-1 has been revised to remove 2-methylnaphthalene and dibenzofuran as human health COCs in shallow groundwater. Additionally the ERI Executive Summary has been revised to reflect this correction. Please note, 2-methylnaphthlene and dibenzofuran were not included in the text or figure summarizing the risk drivers in ERI Section 10 or carried through to the FS as risk drivers, so revisions to ERI Section 10 and to the FS were not necessary.

- Following revision of the HHRA, which was updated between the draft and final versions of the ERI report to incorporate RSLs instead of RBCs, vanadium dropped out of the HHRA as a COC in sediment. However, ERI Table 9-1 was not updated and listed vanadium as a HHRA COC in sediment. Therefore, ERI Table 9-1 has been revised to remove vanadium as a human health COC in sediment. ERI Figures 10-1 and 10-3 and the Executive Summary have also been revised as a result of this change in the screening value. As a result of the ERI revisions, FS Tables 2-1, 2-2, 2-3, 3-1, and 3-5; Appendix A Tables A-2, A-4, A-15, and A-16; and FS Figures 2-9 and 10-1 have also been revised to remove vanadium as a human health COC in sediment.
- The revised HHRA summary tables in the ERI report were not incorporated into the final FS. Therefore, FS Tables 2-2 and 2-3 have been replaced.

During resolution of the human health risk discrepancies, an error associated with arsenic and vanadium as ecological risk drivers was also identified. Arsenic was removed from the ecological sediment COC list in the final ERI Section 9 based on the facts that its calculated hazard quotient of 1.19 was only slightly above the threshold hazard quotient of 1, it was not detected above the established SJCA background concentration, and the detected concentrations are consistent with urban environments; indicating that it was not likely site-related. Vanadium was removed from the ecological sediment COC list in the final ERI Section 9 based on the fact that its calculated hazard quotient of 1.01 was at the threshold hazard quotient of 1, which indicated that concentrations of vanadium in sediment do not pose unacceptable ecological risk. Vanadium incorrectly remained on ERI Figure 10-3 and has therefore been removed with this revision. Additionally, although arsenic and vanadium were removed from the ecological sediment COC list in the ERI report, they were inadvertently carried through as ecological sediment COCs within the FS; therefore, the FS has been corrected to remove arsenic and vanadium as ecological sediment COCs from FS Tables 3-5, 3-6, 3-7; FS Appendix A Tables A-17 and A-18, and FS Figure 2-9.

In addition, during development of the Proposed Plan, an error in the FS Section 5 tables was identified in the long-term effectiveness scoring. Although the FS text correctly states that Alternative 4 is more effective than Alternative 3 with regard to reliability of controls, Alternative 3 received a higher score in FS Tables 5-2 and 5-3. Because Alternative 3 relies on sheet pile for containment of groundwater with the highest chlorinated volatile organic compound (CVOC) concentrations, there is greater risk associated with the reliability of this control than for Alternative 4, which actively treats the groundwater with the highest CVOC concentrations via enhanced reductive dechlorination. Therefore, FS Tables 5-2 and 5-3 and Figures 5-1 and 5-2 have been corrected to be consistent with the text and include a higher score for Alternative 4 than Alternative 3.

Enclosed are two hard copies of the change pages for the Final Site 2 Expanded Remedial Investigation Report and the Final Feasibility Study Report for Site 2, St. Juliens Creek Annex, Chesapeake, Virginia. Two corrected CDs for each report are also included. Change pages and CDs are also being sent to Mr. Robert Stroud of EPA (Region III), and Ms. Karen Doran of VDEQ as outlined on the distribution list below.

Changes as a result of the comments provided by VDEQ on November 10, 2009 are also provided within this package, comprising addition of a note to Figures 3-2, 4-1, 4-4, 4-5, 4-7, 4-8, and 4-9 indicating that the high-concentration area will be re-evaluated during the remedial design.

Specific change pages for each document comprise the following:

Site 2 Expanded Remedial Investigation Report

- Cover and spine
- Executive Summary, pages IX through XIII
- Table 9-1
- Section 10, pages 10-1 and 10-2
- Figures 10-1 through Figure 10-3

Feasibility Study Report for Site 2

- Cover and spine
- Tables 2-1 through 2-3
- Figure 2-2
- Figure 2-9
- Table 3-1
- Tables 3-5 through 3-7
- Figure 3-2
- Figure 4-1
- Figures 4-4 through 4-5
- Figures 4-7 through 4-9
- Tables 5-2 through 5-3
- Figures 5-1 through 5-2
- Appendix A Tables A-2, A-4, A-15 through A-18

If you have any questions or comments regarding the enclosed files, please contact me by email ([jstaszak@ch2m.com](mailto:jstaszak@ch2m.com)) or phone (757.671.6256).

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Sincerely,  
CH2M HILL



Janna Staszak, P.E.  
Activity Manager

cc: Mr. Robert Stroud/EPA (Region III) (1 CD per document)  
Ms. Karen Doran/VDEQ (1 hard copy and 1 CD per document)  
Ms. Adrienne Jones/CH2M HILL (1 hard copy and 1 CD per document)  
Ms. Bonnie Capito/NAVFAC (1 hard copy and 1 CD per document)  
Ms. Dawn Cail/NAVFAC (cover letter only)