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LETTER AND U S NAVY RESPONSE TO VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY REGARDING DRAFT ENHANCED REDUCTIVE DECHLORINATION ANNUAL GROUNDWATER MONITORING SUMMARY FOR SITE 11 JEB LITTLE CREEK VA
06/16/2011
CH2M HILL

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June 16, 2011

Virginia Department of Environmental Quality
Attn: Mr. Paul Herman, P.E.
629 Main Street, 4th Floor
Richmond, VA 23219

Subject: Response to VDEQ Comments on the
Draft Enhanced Reductive Dechlorination Annual Groundwater Monitoring Summary, Site 11—School of Music Plating Shop
Joint Expeditionary Base (JEB) Little Creek-Fort Story, JEB Little Creek, Virginia Beach, Virginia
Navy CLEAN 1000, Contract N62470-08-D-1000, Task Order 0062

Dear Mr. Herman:

On behalf of the Navy, CH2M HILL is pleased to submit the following response to the comments received from VDEQ on the *Draft Enhanced Reductive Dechlorination Annual Groundwater Monitoring Summary, Site 11—School of Music Plating Shop, Joint Expeditionary Base (JEB) Little Creek-Fort Story, JEB Little Creek, Virginia Beach, Virginia* (CH2M HILL, March 2011):

Comment 1: Section 1.2: Should the paragraph addressing the vapor intrusion assessment be expanded to include a brief discussion of the Johnson and Ettinger model results which contributed to the conclusions provided?

Response 1: The paragraph addressing the vapor intrusion assessment has been expanded to read: "A vapor intrusion assessment was conducted in 2005 to evaluate potential risks associated with VOCs in groundwater underlying the School of Music (Building 3602). The investigation included a site visit to identify potential pathways and building envelope characteristics, an analysis of shallow groundwater and soil data, and quantitative and qualitative evaluations of risk. Following field investigation activities, site-specific aquifer and building conditions were used in the Johnson and Ettinger model to develop conservative risk-based screening levels in groundwater for comparison against VOCs detected. The results suggested that even in the event…".

Comment 2: Section 1.3: In the last paragraph please include the approximate distances to the golf course ponds and drainage canal.

Response 2: The last paragraph has been updated as requested.

Comment 3: General Comment: Please include the actual date of the SRS injection in either Section 2 or Section 3.

Response 3: The following sentence was added to the introductory paragraph of Section 2: "Substrate injection was completed between April 27 and May 6, 2009 followed by performance monitoring 1-, 3-, 6-, 9-, and 12-months post-injection."

Comment 4: Section 3.2.2: Monitoring Well MW41D: In the 2nd paragraph, please correct the VC concentration provided (30 ug/L) to reflect what is listed on Figure 3-1 (35 ug/L).

Response 4: The VC concentration has been updated to reflect what is listed on Figure 3-1 (35 ug/L).

Comment 5: Table 3-1: Why are certain detections bolded and others not for TOC? Are detections of ferrous iron supposed to be bolded as well? Why are certain L-flagged detections bolded while others are not?

Response 5: Table 3-1 has been updated to correctly bold all TOC detections and L-flagged results. Detections of field parameters, including ferrous iron, are not bolded. A note indicating that bold detections do not include field parameters has been added to Table 3-1.

Comment 6: Section 4: VDEQ agrees with the conclusion, "the ERD approach at Site 11 was successfully implemented in the source zone and the downgradient plume." However, the opening paragraph should bring forth the hypothesis concerning groundwater velocity and injectate migration to MW42D.

Response 6: The opening paragraph has been revised to read: "The ERD approach at Site 11 was successfully implemented in the source zone and the downgradient plume. This conclusion is supported by the increase in the TOC concentrations, the achievement of the geochemical conditions amenable to reductive dechlorination, and decreasing COC concentrations, with appropriately trending concentrations of daughter products observed at most performance monitoring wells. Although monitoring well MW09D is not optimally located to evaluate the system one-year post-injection, reduction in COC concentrations was observed; therefore, it is expected to be useful in evaluating the long-term effectiveness of the system. Although conditions indicative of reductive dechlorination were not observed in the post-injection groundwater data collected from monitoring well MW42D, based upon the distance of the monitoring well from the nearest upgradient injection well and the estimated yearly groundwater velocity, it is assumed that injected substrate did not have adequate time to migrate to the monitoring well. Given additional time, detection of elevated TOC at monitoring well MW42D may occur. While the post-injection areal extent…".

Please do not hesitate to contact me at 757-671-6239 if you have any questions concerning these responses to comments.

Sincerely,

David Livingston for
Project Manager

cc: Mr. Bryan Peed/NAVFAC Mid-Atlantic
Mr. Jeffrey Boylan/USEPA
Ms. Cecilia Landin/CH2M HILL
Administrative Record File