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NAB LITTLE CREEK
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EMAIL AND COMMENTS FROM U S EPA REGION IV REGARDING DRAFT ENHANCED
REDUCTIVE DECHLORINATION ANNUAL GROUNDWATER MONITORING SUMMARY FOR
SITE 11 JEB LITTLE CREEK VA
05/12/2011
U S EPA REGION IV

Monica Marrow

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Sent: Thursday, May 12, 2011 2:27 PM
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Subject: JEB Little Creek - ERD Annual GW Monitoring Summary Site 11 (Draft) - EPA Comments (email)

Subject Document: 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, March 2011

Folks,

Document Summary:

- March 23, 2011 Transmittal Letter from CH2MHILL- Received draft version for review and comment.

Email Action: EPA (mailcode 3HS11 and 3HS41) has reviewed the subject document and offers the following comments:

Hydrogeologist Comments

1. According to the report, the groundwater flow direction southwest to south changed drastically in May 2010 northwest to west. No significant changes in groundwater flow direction have been recorded since the repair of the sanitary sewer in October 2007. Is the sewer line leaking again or there are other conditions affecting the direction of the groundwater?
2. EPA understands that the increase of Cis-1,2-Dichloroethene is expected as part of the dechlorination process, however are the concentrations of Cis-1,2-Dichloroethene found in the aquifer in the 12 month period higher than the anticipated?
3. Based on the 12 months of data, are the conditions in the aquifer suitable for the decrease of Cis-1,2-Dichloroethene or this may be a case of persistent accumulation of Cis-1,2-Dichloroethene?
4. The Complete Analytical and Field Data Tables located in Appendix B show an increase of concentration for methane from 810 $\mu\text{g/L}$ to 4,300 $\mu\text{g/L}$ in the 12 month period in well LS-11-MW38D. Is this methanogens process good or bad indication for the reductive dechlorination at the site?

Toxicologist Comments

1. Table 1-3 - Either a footnote should be added to explain the increase in concentrations of TCE breakdown products or the reader should be referred to Section 2.1 of the report for more detail in this regard.
2. Section 2.1 - The process of reductive dechlorination of a TCE source generally results in the production of vinyl chloride. Page 2-1 of the report indicates that further breakdown of vinyl chloride to ethene "varies and is based

on site-specific conditions." Since vinyl chloride is more toxic than its predecessors in this dechlorination process, has a lower MCL and is generally more difficult to capture and treat, a strategy for handling this compound should be considered and discussed in the report.

3. Section 3.3 - According to page 3-6, dissolved arsenic concentrations in several wells at the site have increased due to reducing conditions in the aquifer. The reader should be referred to Appendix B for measured levels of arsenic in groundwater since VOC treatment began. Also, arsenic monitoring at the site should continue until concentrations consistently fall below the MCL. Finally, if dissolved arsenic in excess of the MCL is observed in any of the perimeter wells, action should be considered to address this.

RPM Comments

1. Page 1-4; EPA suggests deleting the sentence "A summary of previous investigations is presented in **Table 1-1.**" and incorporating this table into the text of Section 1.2.
2. Page 1-5, 1.3 Hydrogeology, 4th paragraph; consider moving the sentence "The change in groundwater flow direction ... as the water level survey." into the 6th paragraph of this section. The 6th paragraph provides these types of conclusions about the variations in groundwater gradients and flow velocities.
3. Page 1-5, 1.3 Hydrogeology, 5th paragraph; please add language to this paragraph clarifying which data set best represents the groundwater at Site 11.
4. Page 3-1, 3.2 Performance Monitoring, 1st paragraph, 2nd sentence; Move "performance" after "from" and insert "effectiveness" in its place.
5. Page 3-2, 3.2 Performance Monitoring; Table 3-1 contains annual well monitoring data in addition to performance well monitoring data. Please modify the sentence in this section referring to the Table or the Table itself to include only the performance monitoring data. Appendix B contains the complete data set.
6. Page 3-2, 3.2.1 Source Treatment Area, 3rd paragraph; Add a sentence(s) to finish the thought (analysis) with respect to cyclodextrin.
7. Page 3-3, Monitoring Well MW38D; please explain what "localized conditions" are affecting the chlorinated ethane and chlorinated methanes.
8. Page 3-4, Monitoring well MW40D; please provide the background concentration for methane.
9. Page 3-5, Monitoring Well MW42D, 3rd paragraph; In the last sentence, replace "may" with "is expected to".
10. Page 3-5, Downgradient Plume Summary, 1st sentence; Please reword the end of the sentence to clarify what is meant by "the temporary change ... during the monitoring period."
11. Page 3-5, Downgradient Plume Summary; Consider adding some discussion the path forward with respect to performance monitoring well MW09D.
12. Page 3-6, 3.3 Overall Effectiveness, 4th paragraph; Total COCs concentration went from non-detect to 615 $\mu\text{g/L}$ and 341 $\mu\text{g/L}$ in wells MW36D and MW37D respectively. These well are angled and sample groundwater underlying The School of Music building. EPA understands that a Vapor Intrusion (VI) re-assessment will be accomplished as part of the LTM SAP, however do these concentrations warrant a more immediate VI assessment?
13. Table 3-1; Where is Carbon Tetrachloride?

14, Page 4-1, Section 4 Conclusion and Recommendations; Please separate the last paragraph into two making the bioaugmentation consideration a stand alone paragraph. In addition, considering comment 11 above, it may be necessary to add some language regarding performance monitoring well MW09D.

Path Forward: Navy to provide responses to comments.

NOTE: No letter documenting no EPA's comments on the subject document will be provided. EPA will issue a formal acceptance letter once the final hardcopy version is received, reviewed and approved.

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