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FINAL RESPONSES TO COMMENTS
OCTOBER 29, 1997
OPERABLE UNIT 1, SITE 16 - LANDFILL AT SANDY BRANCH
ACTION MEMORANDUM (APRIL 1997)
MCAS CHERRY POINT, NORTH CAROLINA

COMMENTS FROM JAY BASSETT, EPA - May 29 and June 11, 1997

- 1. Section 5.1.1: Need to add performance standards (system goals), including contaminants and concentrations, and specific objectives. For example, is the goal to reduce groundwater concentrations below a groundwater standard at the line of treatment wells? Is the goal to reduce surface water contamination in Sandy Branch below surface water standards?**

Response:

Agree. The goal of the system is to reduce groundwater contaminant concentrations in the surficial aquifer so that the discharge of groundwater to surface water does not result in an exceedance of a state surface water standard or Federal AWQC (for those compounds with no state standard) in Sandy Branch or the East Prong of Slocum Creek. Groundwater monitoring will be conducted to confirm that the AS/VE system is attaining concentrations that are protective of groundwater. At system start-up, contaminated groundwater located between the AS/VE system and surface water bodies would not be treated and would continue to discharge to surface water. Surface water monitoring will also be conducted to determine whether the discharge of contaminated groundwater is causing an exceedance of surface water standards. It is important that upgradient and downgradient surface water samples be collected to determine whether an exceedance of standards was due to an OU1 source other than Site 16.

The following was added to the first paragraph of Section 5.1.1 - "Therefore, the system is intended to reduce the levels of VOCs in the groundwater in order to be protective of the surface water."

The following new second paragraph was added to Section 5.1.1 - "The remedial action goal for the proposed system is to reduce groundwater contaminant concentrations in the surficial aquifer. The treatment would remove VOCs so that the discharge of groundwater to surface water does not result in an exceedance of Federal AWQC or state surface water standards in Sandy Branch or the East Prong of Slocum Creek. Table 5-1 provides a comparison of the maximum concentrations of VOCs in surficial aquifer groundwater to Federal AWQC and state standards. The AWQC and state standards presented in Table 5-1 will be the performance standards for the AS/VE system. If additional VOCs are detected after installation of the system, performance standards would need to be developed for them."

The following new third paragraph was added to Section 5.1.1 - "The proposed system was determined, based on the results of the pilot-scale treatability study, to effectively remove VOCs from the groundwater and achieve a greater than 75 percent removal rate (74.5 percent removal for TCE) for all VOCs encountered (B&R Environmental, April 1997). These results are based on the operation of the pilot-scale system for the 16 week study and the observed removal rates. Since it will take approximately 2.6 years for groundwater to pass through the area of influence of the proposed full-scale system, it is expected that the contaminants of concern at Site 16 will be reduced to ensure compliance with surface water protection criteria. However, exact removal rates and standards which will be achieved can be determine after this period of operation and, if necessary, the system or its goals will be revised (B&R Environmental, April 1997)."

Table 5-1 was added. This table provides the maximum concentrations of VOCs detected in groundwater during the RI and treatability study. These concentrations are compared to Federal AWQC for the protection of human health from ingestion of aquatic organisms and surface water standards provided by NCDEHNR.

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Subsequent discussions with the Partnering Team on October 15, 1997, resulted in the inclusion of additional performance standards for protection of groundwater (i.e., MCLs and state groundwater standards). Protection of surface water is the primary objective, and protection of groundwater is the secondary objective. The following revisions were made based on these discussions:

The third sentence of the first paragraph of Section 5.1.1 was revised as follows - "Therefore, the primary objective of the system is to reduce levels of VOCs in the groundwater in order to be protective of the surface water." The following was added to end of this paragraph - "A secondary objective is to protect groundwater by reducing VOCs to attain Federal MCLs and state groundwater standards."

The first two sentences of the second paragraph of Section 5.1.1 were not revised. The remainder of this paragraph was revised as follows - "Table 5-1 provides a comparison of the maximum concentrations of VOCs in surficial aquifer groundwater to Federal AWQC and state surface water standards. The AWQC and state surface water standards presented in Table 5-1 will be the primary performance standards for the AS/VE system. Table 5-1 also provides a comparison to Federal MCLs and state groundwater standards. The MCLs and groundwater standards presented in Table 5-1 will be the secondary performance standards. If additional VOCs are detected after installation of the system, primary and secondary performance standards would need to be developed for them."

Columns presenting Federal MCLs and state groundwater standards were added to Table 5-1.

The first sentence of the last paragraph of Section 5.1.1 was revised as follows - "Monitoring will include the sampling of groundwater in the surficial aquifer to assess the progress of AS/VE in meeting the primary groundwater performance standards (i.e., North Carolina Class C surface water standards or Federal AWQCs if no state standard is available for a particular compound) and secondary groundwater performance standards (i.e., North Carolina Class GA groundwater standards and Federal MCLs).

- 2. Section 5.1.2 should outline how the goals in Section 5.1.1 contribute to long-term remediation.**

Response:

Agree. The last sentence of the first paragraph of Section 5.1.2 was revised as follows - "However, the goal of the AS/VE system is to minimize contaminant migration and reduce impacts to human health and the environment by removing contamination, which exceeds surface water protection criteria, from the groundwater prior to discharge into the East Prong of Slocum Creek or Sandy Branch."

The following new second paragraph was added to Section 5.1.2 - "As discussed in Section 5.1.1, concentrations that are protective of surface water are expected to be attained in the surficial aquifer by operation of the AS/VE system. In addition, some Federal MCLs and/or state groundwater standards may be attained."

- 3. Air monitoring should be included to support modeling and that potential receptors are not being exposed to unacceptable levels.**

Response:

Agree. The following new third paragraph was added to Section 5.1.2 - "During system start-up, off-gas emissions will be reduced through the use of vapor-phase activated carbon canisters connected to the influent port of the vapor extraction system. The use of off-gas treatment will insure that VOC concentrations do not exceed levels based on protection of remedial workers and Air Station personnel. During development of the Work Plan for the Remedial Design, air dispersion modeling was conducted by the RAC contractor using the air emission data collected during the treatability study (OHM, 1997). This modeling showed that off-gas treatment was not

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required to protect human health. However, the modeling was limited to those potential air contaminants detected during the treatability study. Since the full-scale AS/VE system will cover a much larger area than the treatability study, there is a potential for detection of additional air compounds. During system start-up, air monitoring of the off-gas will be needed to determine whether there are additional air contaminants that would need to be addressed. The performance standards for workers would be the lower of the ACGIH Threshold Limit Values, OSHA Permissible Exposure Levels, or NIOSH Recommended Exposure Limits. Performance standards for residents would be EPA Region III Risk-Based Concentrations that correspond to a cancer risk of 1E-4 or a Hazard Index of 1.0."

The following was added to the last paragraph of Section 5.1.2 - "Air monitoring will also be included to support modeling and to ensure that potential receptors are not be exposed to unacceptable levels of air contaminants. Modeling will be performed once the full-scale system is in operation."

The air dispersion modeling approach and performance standards to determine potential risks to Air Station personnel or remedial workers need to be discussed with the Partnering Team.

Subsequent discussions with the Partnering Team on October 15, 1997, resulted in a revision of the cancer risk from 1E-4 to 1E-6. The following revision was made based on these discussions:

The last sentence of the third paragraph of Section 5.1.2 was revised as follows - "Performance standards for residents would be risk-based concentrations that correspond to a cancer risk of 1E-6 or a Hazard Index of 1.0." It should be noted that reference to EPA Region III Risk-Based Concentrations has been removed to allow for the development of RBCs based on site-specific receptor conditions.

4. **A discussion is needed that no public comments were received during the public comment period.**

Response:

Agree. The following was added near the end of the second paragraph of Section 2.0 - "No public comment has been received on the interim removal action as of September 1997."

5. **Section 8.0 should have a signature for the Commanding General to sign for approval.**

Response:

Need to discuss with Partnering Team. A place for the Commanding General's signature was added to Section 8.0. It should be noted that LANTDIV (Lance Laughmiller) is investigating whether a signature is required as part of a Partnering Team Action Item. The signature block may be removed based on LANTDIV findings and discussions with the Partnering Team.

Subsequent information provided by L. Laughmiller on October 24, 1997, indicated that the Navy has decided to include a Declaration page for Action Memos, similar to that provided in RODs. Therefore, a Declaration section, with signature block, similar to that used for the OU2 ROD, has been included.

OTHER MAJOR REVISIONS MADE TO DOCUMENT BY B&R ENVIRONMENTAL TO PROVIDE FURTHER CLARIFICATION

1. Section 2.1.1, RI/FS Activities: The following paragraph was added to the end of this section - "Table 2-1 presents the maximum concentrations of VOCs detected in the surficial aquifer for samples collected during the RI and/or prior to start-up of the treatability study AS/VS system. Table 2-1 also provides a comparison of these concentrations to Federal Maximum Contaminant Levels (MCLs) and North Carolina Class GA groundwater standards. The maximum concentrations of many VOCs exceeded the MCL and/or state standard." A new table (2-1) was also added.

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2. Section 2.1.2, Physical Location and Characteristics: The following was added to the next to last paragraph - "Table 2-2 presents the maximum concentrations of VOCs detected in surface water for samples collected during the RI. Table 2-2 also provides a comparison of these concentrations to Federal Ambient Water Quality Criteria (AWQC) for protection of human health from consumption of aquatic organisms and North Carolina Class C surface water standards. TCE was the only VOC that exceeded the AWQC or state standard." A new table (2-2) was also added.
3. Section 3.0, Threats to Public Health or Welfare or the Environment, and Statutory and Regulatory Authorities: The next to last sentence of the first paragraph was revised as follows - "The groundwater concentrations are higher than Federal MCLs and state groundwater standards."

The following was added to the last paragraph - "However, concentrations of TCE are greater than Federal AWQC and state surface water standards."
4. Section 5.1.1, Proposed Action Description: The last paragraph was revised as follows - "Monitoring will include the sampling of groundwater in the surficial aquifer to assess the progress of AS/VE in meeting the groundwater performance standards (i.e., North Carolina Class C surface water standards or Federal AWQCs if no state standard is available for a particular compound). Monitoring will also include the sampling of air emissions from the AS/VE system and sampling of surface water in Sandy Branch and the East Prong of Slocum Creek to confirm that site contaminants are not migrating into the environment. The results for surface water monitoring will be compared to North Carolina surface water standards. A monitoring plan will be developed with Federal and state concurrence."

Subsequent discussions with the Partnering Team on October 15, 1997, resulted in the decision that surface water monitoring would not be needed once the treated groundwater attains the primary performance standards for protection of surface water. The following revision was made based on these discussions:

The following was added to the last paragraph of Section 5.1.1 - "Surface water monitoring would be discontinued once the primary performance standards are attained."

5. A reference list was added.
6. Subsequent discussions with the Partnering Team on October 15, 1997, resulted in the inclusion of the state in discussions concerning the FFA. The fourth sentence of Section 2.1.4 was revised as follows - "A Federal Facilities Agreement (FFA) between the USEPA, North Carolina, and the Navy is pending."
7. The North Carolina Department of Environment, Health, and Natural Resources (NCDEHNR) has been changed to the North Carolina Department of Environment and Natural Resources (NCDENR). This revision was made throughout the document.