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U S NAVY RESPONSES TO NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES AND U S EPA REGION IV COMMENTS ON DRAFT RECORD OF DECISION FOR SITE 69 OPERABLE UNIT 14 (OU 14) MCB CAMP LEJEUNE NC
2/11/2013
CH2M HILL

Response to Comments
Draft Record of Decision
Site 69 Operable Unit No. 14
Marine Corps Installations East-Marine Corps Base Camp Lejeune, North Carolina

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Introduction

The purpose of this document is to address comments on the Draft Record of Decision (ROD) for Site 69 Operable Unit No. 14 located at MCIEAST-MCB CAMLEJ. United States Environmental Protection Agency (EPA) Region 4 and North Carolina Department of Natural Resources (NCDENR) provided the comments listed below. The responses to the comments are provided in bold.

NCDENR Comments (Dated January 9, 2013)

General Comments

With the exception of the specific comments noted below, the ROD appears to be in good order and the NC Superfund Section concurs with the preferred proposed alternatives for the soil and groundwater remedies at Site 69. The Superfund Section is waiting for comments by the attorney general's office.

Comment noted and will be addressed by the specific comments below.

Specific Comments

1. Please change the statement in the third sentence of the second paragraph on page 2-2 to be the same as noted at the top of page 2-8 and in the PRAP and FS.

   The statement on Page 2-2 has been revised to read "The concentrations of COCs in groundwater samples collected from IR69-GW15IW, installed through the waste material, which are two to three orders of magnitude greater than the groundwater in all surrounding monitoring wells, and the continued presence of buried waste at the site suggest that soil within the waste disposal area is contaminated.", as stated on Page 2-8.

2. Table 11 on Page 2-24 shows contaminants of concern (COCs) and maximum concentrations. Please modify Table 11 to include Location of maximum concentration data and frequency of detection. We have this data for VOCs in the Feasibility Study but we do not include Pesticides and PCBs. Pesticides and PCBs could be critical for this site if they were detected wide spread at Site 69. This information is critical to the decision process for the State. See the last three sentences of the first paragraph on page 2-8.

   Two columns have been added to Table 11 on Page 2-24. The first includes Location of Maximum Concentration data and the second includes Frequency of Detection for all COCs.

3. The Figure 9 legend shows an estimated intrusive activities control (soil, groundwater, and munitions and Explosives of Concern (MEC)). This green boundary is not clearly shown. Please make all appropriate corrections. The estimated access control boundary (red line) is also not clearly visible.

The locations of the Estimated Intrusive Activities Control Boundary and the Estimated Access Control Boundary on Figure 9 have been clarified.

4. Please clarify, in the last sentence on page 2-32, Section 2.10, that reactions, explosion, etc. could occur if chemicals are injected into the source area due to the potential presence of reactive chemicals in the landfill. Include whatever detail is necessary to clarify why the "contaminant source area" remaining in place for the injection remedies have high risk safety issues and are therefore less desirable remedies.

   The last sentence on Page 2-32 has been revised to read "Alternative 2 was preferred over Alternatives 4 and 5 because the contaminant source area remains in place, the uncertainty of the ability for subsurface injections to distribute reagents uniformly at acceptable quantities, and due to the potential presence of reactive chemicals in the landfill that could cause explosions or other reactions if chemicals are injected into the source area."

5. The Applicable Relevant and Appropriate Requirements (ARARs) Table A-1 in Appendix A, lists an incorrect reference rule for the "adjacent surface water bodies". This reference should be 15A NCAC 2L .0106(k)(5). Please make this correction.

   In Appendix A, Table A-1, the ARAR reference pertaining to "adjacent surface water body" has been corrected to 15A NCAC 2L .0106(k)(5).

6. The NC Superfund Section attorney general's (AG) office is in the process of reviewing the document. If the AG has comments they will be forwarded as soon as they are received.

   Comment noted and will be addressed when received.

EPA Comments (Dated January 31, 2013)

<u>Specific Comments</u>

1. *Page 1-1, Site Name and Location:* Please specify Section in CERCLA 120. [Note: (CERCLA 120(E)(2))]

   The corresponding CERCLA section [CERCLA Section 120 (e)(2)] has been identified in the text.

2. *Page 1-1, Statement of Basis and Purpose:* Please specify CERCLA Section and/or NCP provision that states EPA jointly selects remedy with lead agency, Navy. [Note: (CERCLA 120(E)(4)(A))]

   The corresponding CERCLA section [CERCLA Section 120 (e)(4)(A)] has been identified in the text.

3. *Page 1-2, Scope and Role of Response Action:* Add sentence to clarify that UXO-02 within the fence is being addressed by this CERCLA remedial action due to likely presence of MEC and UXO.

   The following sentence has been added for clarification, "The portions of UXO-02 located within the Site 69 fence are being addressed by this CERCLA remedial action due to the potential presence of munitions and explosives of concern (MEC)."

4. *Page 1-2, Statutory Determinations:* Tables 15 & 16 identify the "preference for treatment" as a low ranking. However, the text states that the statutory preference for treatment as a principle element has been satisfied. The "cap" (containment is the principle element of the remedy with "MNA" as secondary and both are ranked low and are not considered treatment. There is a disconnect between the text and the tables. Please correct; the remedy does not meet the statutory preference for treatment.

   The sentence indicating that the remedy satisfies the statutory preference for treatment as a principle element of the remedy has been deleted and replaced with the following sentence, "The remedy does not satisfy the statutory preference for treatment as a principal element because the potential presence of CA material within the buried waste deems removal or treatment to be impractical and/or

the costs extraordinarily high. There is also a high risk associated with removal and transportation of CA and limited acceptable disposal facilities. Leaving the potentially buried CA in the ground may be preferable to excavation and destruction per the Programmatic Environmental Impact Statement: Destruction of Non-Stockpile Chemical Warfare Materiel Containing Chemical Agent (FR. Oct. 18, 1996 [Volume 61, Number 203]). Therefore, a cover will be installed to minimize infiltration and resulting contaminant leaching to groundwater. Although technologies are available to treat the potential DNAPL, the waste will remain in-place as a continuing source, there are unknown risks associated with chemical reactions of any injected materials with the CA, and there is uncertainty of the ability for subsurface injections to distribute reagents uniformly at acceptable quantities. Trends over time indicate that MNA will be effective and degrade VOCs in groundwater in a reasonable timeframe. The groundwater is not used for drinking water and LUCs will prevent exposure to waste and groundwater."

5. *Page 2-7, Waste and Associated Soil:* State why CA presence is a problem due to health and safety concerns such as lethal gases, explosions, etc.

   The following sentence has been added, "The potential presence of these reactive chemicals presents health and safety concerns associated with the release of harmful gases that could be lethal and trigger explosions or other reactions."

6. *Page 2-8, Waste and Associated Soil:* Specify which COCs, chemical agents or VOCs and pesticides? [note: identify contaminants in well 15IW (VOCs).]

   The following COCs have been specified in relation to well IR69-MW15IW: 1,2- DCA; cis-1,2-DCE; trans-1,2-DCE; TCE; VC; and heptachlor epoxide.

7. *Page 2-8, Waste and Associated Soil:* Add sentence that "The buried waste and contaminated soils are considered source materials, some of which is principal threat waste per EPA guidance considering toxicity as well as mobility of the wastes."

   The sentence has been added.

8. *Page 2-8, Waste and Associated Soil:* If this is present then cannot select NFA for entire UXO-02 area as stated in earlier text. Clarify that the UXO-02 area within the Site 69 Boundary will not receive a NFA determination and will be included in the LUCs.

   The following sentence has been added for clarification, "The area within the Site 69 fence will be excluded from the NFA determination for UXO-02 and will be included in the LUCs."

9. *Page 2-19, Basis for Response Action:* Revise to state: The NCGWQS are considered relevant and appropriate chemical-specific requirements that are the basis for establishing cleanup levels for groundwater.

   The sentence has been revised as requested.

10. *Page 2-24, Principal Threat Wastes:* [Excerpt from Final PRAP: For groundwater, there are unknown safety concerns with adding substrate and/or creating chemical reactions in situ. The ROD will include a detailed explanation of why treatment was not utilized to address the principal threat waste.]

    The detailed explanation is not included in the ROD. Add language that describes in more detail the difficulties and potential harmful effects of attempting to remediate the PTW (CA & DNAPL). Technologies are available to treat the DNAPL source, however, with the potential CA material, ex-situ remediation is impractical with the limited treatment options for the CA. Also, there are unknown risk associated with chemical reactions of any injected materials with the CA.

    The following sentence has been added to this section, "The potential presence of CA material within the buried waste deems removal or treatment to be impractical and/or the costs extraordinarily high.

There is also a high risk associated with removal and transportation of CA and limited acceptable disposal facilities. Although technologies are available to treat the DNAPL source, the potential CA material is expected to remain in-place as a continuing source, there are unknown risks associated with chemical reactions of any injected materials with the CA, and there is uncertainty of the ability for subsurface injections to distribute reagents uniformly at acceptable quantities."

11. *Page 2-29, Overall Protection of Human Health and the Environment – Waste Disposal Area:* I don't think that is accurate. Removing waste is most protective on HH&E in the long-term, revise accordingly.

The text has been revised to state, "Alternative 3 is the most protective of human health and the environment in the short-term, as it controls the exposure to the buried waste and minimizes leaching of contaminants to groundwater. However, Alternative 4 is the most protective of human health and the environment in the long-term as the source would no longer be present."

12. *Page 2-29, Compliance with ARARs – Waste Disposal Area:* RCRA Subtitle C cap is required because the buried waste (source materials) would be RCRA hazardous waste, not because of the presence of PTW. Revise accordingly.

The text has been revised to state, "Alternative 3 (Capping) would also comply with the action-specific ARARs for a RCRA Subtitle C landfill to minimize infiltration through the buried waste (source materials), which would be RCRA hazardous waste and resulting contaminant leaching to groundwater."

13. *Page 2-30, Reduction of Toxicity, Mobility, or Volume through Treatment:* Add language explaining the lack of treatment of the NAPL/DNAPL source. (see comment on page 2-24)

The following sentence has been added for explanation, "Technologies are available to treat the DNAPL source; however, with the potential CA material, treatment options are limited as ex-situ remediation is impractical and there are unknown risks associated with chemical reactions of any injected materials with the CA."

14. *Page 2-30, Reduction of Toxicity, Mobility, or Volume through Treatment – Waste Disposal Area:* Provide that preventing infiltration reduces leaching of COCs into subsurface soils and groundwater.

The sentence has been revised as follows, "However, Alternative 3 (Capping) would reduce mobility through minimized infiltration, preventing leaching of COCs into subsurface soils and groundwater."

15. *Page 2-31, Reduction of Toxicity, Mobility, or Volume through Treatment - Groundwater:* Specify what this consists of, VOC DNAPL and/or high-concentration VOC contaminated soil.

Non-CA PTWs, in the context of groundwater, has been specified as potential DNAPL.

16. *Page 2-32, Rationale for the Selected Remedy:* Need to add rationale for not selecting treatment of gw contamination located within the source area. (see comment on page 2-24).

The following sentence has been added, "Technologies are available to treat the DNAPL source; however, with the potential CA material, ex-situ remediation is impractical and there are unknown risks associated with chemical reactions of any injected materials with the CA."

17. *Page 2-33, Rationale for the Selected Remedy:* In order for MNA to be chosen, there must be multiple lines of evidence that natural attenuation is occurring and that the GW cleanup levels can be attained throughout the plume in a reasonable timeframe. Navy must revise to better describe that MNA is acceptable remedial approach for this plume. Also, EPA MNA guidance requires that the plume is stable. Cite the EPA MNA guidance in this Section and when MNA first described in the ROD. [Note: Add summarized information from the FS to further strengthen the NA discussion.]

The following discussion has been added to the text, "The ultimate objective for groundwater is to restore groundwater quality to its beneficial uses. Based on information obtained during previous investigations and a careful analysis of all remedial alternatives MNA is an acceptable alternative to achieve this objective. Per USEPA guidance, *Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites*, clear and meaningful trends of decreasing contaminant mass have been documented, hydrogeologic and geochemical data demonstrate active natural attenuation processes at the site, and microcosm studies indicate the presence of favorable microorganisms at the site. Site-specific lines of evidence for MNA are presented in Section 2.4 and are summarized below.

- **Historical data trends show an overall decrease in TCE and DCE and an increase in VC, which is strongly supportive of reductive dechlorination.**
- **Within the area of contamination, groundwater is reduced and DO concentrations are favorable for reductive dechlorination.**
- **The presence of ferrous iron and elevated alkalinity levels are suggestive of biological activity.**
- **Microbial analysis conducted in the upper and middle Castle Hayne aquifers indicated the presence of microorganisms that mediate reductive dechlorination of chloroethenes, particularly in the most contaminated areas.**
- **Groundwater modeling predicts that the plume will remain relatively stable and will remain below NCSWQS at the discharge point to the New River."**

18. *Page 2-33, Description of the Selected Remedy:* Add bullet to capture maintenance of the cap and any physical LUCs, such as fences and signs.

The following bullet has been added, "O&M to maintain the cap and LUCs."

19. *Page 2-33, Description of the Selected Remedy:* Suggest the LUC boundary be a larger area that encompasses both GW and waste which is more practical and easier to track in GIS and Base Master Plan.

The Navy recommends keeping the LUC boundaries as presented. The individual LUCs serve specific purposes and it is not necessary to restrict certain uses across a wider spread area. It's important to know the difference between a groundwater LUC and soil LUC, because a project that requires minimal dirt removal (paving, tree removal, etc) would have different stipulations if only groundwater 10 feet below ground surface is contaminated. Several sites at MCIEAST-MCB CAMLEJ have multiple LUC boundaries, and the different boundaries can be managed properly.

20. *Page 2-34, Description of the Selected Remedy:* Add "contaminated" before soil. Also, need to include "prohibit residential use of the site…".

The text has been edited as requested.

21. *Page 2-34, Description of the Selected Remedy:* See Site 73 ROD that has more detailed LUC objective such as prevent consumptive uses.

The LUC objectives were updated to include:

- **To prohibit unauthorized intrusive activities within the waste disposal area.**
- **To prohibit residential/recreational uses and development including, but not limited to, any form of housing, any kind of school, child-care facilities, playgrounds, and adult nursing facilities.**
- **To prohibit human consumption of or interaction with groundwater from the surficial and Castle Hayne aquifers underlying Site 69.**
- **To mitigate the potential for future vapor intrusion pathways.**

- **To inspect and maintain the integrity of any existing or future monitoring or remediation system at the site (including but not limited to the cap, groundwater monitoring wells, fences, and signs).**

22. *Page 2-35, Description of the Selected Remedy – Industrial/Non-Industrial Use Control:* Specify that Base personnel through existing procedures will perform the evaluation.

This has been specified in the text.

23. *Page 2-36, Statutory Determinations – Protection of Human Health and the Environment:* Revise to state "That buried waste and contaminated soil and groundwater present unacceptable risk to human health and the environment" since that BRA concluded this was the situation.

The text has been revised to state, "Buried waste, contaminated soil, and groundwater present an unacceptable risk to human health and the environment; however, LUCs currently prevent any current or future exposure to this area and will be updated and maintained."

24. *Page 2-37, Statutory Determinations – Utilization of Permanent Solutions and Alternative Treatment Technologies or Resource Recovery Technologies to the Maximum Extent Practicable:* Include "considering the presence of CA and demonstrated limited effectiveness of certain in-situ GW treatment technologies."

The text has been added as requested.

25. *Page 2-37, Statutory Determinations – Preference for Treatment as a Principal Element:* Revise to delete "a USEPA acceptable" and instead state that "the FFA parties determined through the FS was an acceptable alternative to reduce the mobility of the PTWs."

This section has been revised as follows, "While the remedy does not satisfy the statutory preference for treatment as a principal element, it does provide a cover which minimizes infiltration and resulting contaminant leaching to groundwater to reduce further migration of the principal threat waste, which the FFA parties determined through the FS was an acceptable alternative to reduce the mobility of the PTWs. The high risk associated with removal and transportation of CA and the limited acceptable disposal facilities for CA waste make the USEPA preference for removal of the principal threat waste an impractical alternative at this time. Trends over time indicate that MNA will be effective and degrade VOCs in groundwater in a reasonable timeframe. The groundwater is not used for drinking water and LUCs will prevent exposure to waste and groundwater."

26. *Page 2-37, Statutory Determinations – Five-Year Review Requirements:* Revise to use language earlier in the document Section 1.1 that reference CERCLA and NCP requirements. Also indicate the if FFA parties determine during FYR remedy is not functioning properly and is not protective of human health and the environment, that the parties will determine whether Navy must revise remedy to take additional remedial actions.

This section has been revised as follows, "Because this remedy will result in hazardous substances, pollutants, or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure, a statutory review will be conducted within five years after initiation of the remedial action to ensure that the remedy is, or will be, protective of human health and the environment in accordance with CERCLA Section 121(c) and the NCP at 40 *Code of Federal Regulations* (CFR) 300.430 (f)(4)(ii). If the FFA parties determine during the Five-Year Review that the remedy is not functioning properly and is not protective of human health and the environment, they parties will determine whether the Navy must revise the remedy to take additional remedial actions."