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MCRD PARRIS ISLAND
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LETTER AND COMMENTS FROM SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL REGARDING SAMPLING AND ANALYSIS PLAN FOR SITES 27, 55, 9 AND 16, AND REMEDIAL INVESTIGATION REPORT FOR SITES 27, 55, 9 AND 16

MCRD PARRIS ISLAND SC

2/10/2012

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

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Promoting and protecting the health of the public and the environment

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February 10, 2012

Commanding Officer
NAVFAC Southeast
ATTN: Mr. Charles Cook, P.E.
PO Box 30
Ajax Street North, Bldg 135
Jacksonville, Florida 32212

and

Commanding General
NREAO
ATTN: Ms. Lisa Donohoe
PO Box 5028
Parris Island, SC 29905

RE: Review of

- SAP for Site 27 Rev 1
- SAP for Site 55, 9, and 16 Rev 1
- RI Report for Site 27, 55, 9, and 16

Marine Corp Recruit Depot (MCRD)
Parris Island
SC 6170 022 762

Dear Mr. Cook and Ms. Donohoe:

The Division of Waste Management of the South Carolina Department of Health and Environmental Control (Department) completed the review of the above referenced documents received November 17, 2010; November 7, 2010; and November 28, 2011. The Department reviewed the documents with respect to applicable sections of the South Carolina Hazardous Waste Management Regulations (SCHWMR). Based on this review the Department has comments. Please see attached engineering, hydrogeology, and risk assessment comments.

The Department's review is based on the information presented by MCRD to date; any information found to be contradictory may require further action. If you have any questions regarding this issue, please contact me at (803) 896-4218

Sincerely,

A handwritten signature in black ink, appearing to read "Meredith Amick". The signature is fluid and cursive, with a long horizontal line extending to the right from the end of the name.

Meredith Amick, P.E., Environmental Engineer
Corrective Action Engineering Section
Division of Waste Management

cc:

Lila Llamas, EPA Region 4
Annie Gerry, Hydrogeology
Priscilla Wendt, SCDNR

Russell Berry, EQC Region 8, Beaufort
Peggy Churchill, TNUS

Engineering Memo
Prepared by Meredith Amick
Marine Corp Recruit Depot (MCRD)
January 31, 2012

1. The Department reiterates the following comment from the Site 27 SAP:
Specific Comment #1: Response to EPA Comment #14
In the RI Report, please provide disposal manifest (to include volume and location of disposition) for the LNAPL and water removed from the Fiber Optic Vault in 2001 and 2003.
2. For the final RI Report, the Department requests one hard copy of the Appendices included in this report on CD except Appendix D-17.
3. General statements relating to the industrial nature of the site being used as weight of evidence or justification tends to indicate the need for industrial land use controls. Please clarify the Navy's position on the use of industrial land use controls and/or remove such justification from the document.
4. The relation of SVOC contamination in surface soil to asphalt present at the site being used as a weight of evidence or justification should be supported by applicable anthropogenic data.
5. Page ES-1
Please clarify if the underground storage tank referenced in the second paragraph is indentified as a Site or SWMU, and if so, please reference the Site/SWMU number in the report.
6. Section 3.4.2.1 Page 3-21 and 3-22
Please clarify how the values were determined and discuss in more detail the following sentences. "For hydrocarbon results, background was estimated for surface and subsurface conditions separately based on the lowest value plus 10 times the result from soil borings PAI-27-SO33, PAI-27-SO34, and PAI-27-SO35. Estimated hydrocarbon values of 2000 ppm for surface and 1000ppm for subsurface were conservatively used to provide an estimate of what could be considered high."
7. Page 4-8 through 4-12
Based on the SAPs it appears that PCBs were to be analyzed in surface and subsurface soil for Site 27 and Sites 55, 9, and 16 during Phase III. However, it appears that they were not sampled for PCBs. Additionally Section 3 of the RI Report states that no deviations were made from the Site 55, 9, and 16 SAP. Please explain the discrepancy.
8. Section 4.4.1 Page 4-17
Please clarify if the sealing of the vault has prevented water from entering.
9. Page 4-9 First paragraph
Sample PI-009-02-33 does not appear to be on Figure 1-5.
10. Table 4-1
This table states "2 out of 24 samples (41.6%)." Please correct the discrepancy.

11. Figures in Section 4 and Tables in Appendix D
These figures and tables appear to reference Residential and Industrial RSLs as Residential and Industrial SSLs. Please correct this discrepancy. In addition the Figures and Tables should show the analyte comparison to SSLs.
12. Figure 4-5
The screening values listed for Thallium are incorrect in the legend. Additionally it appears that the units listed for both the pollutant concentration in the Sample Tag as well as the Screening Level legend should be mg/kg instead of ug/kg.
13. Figure 4-14
This table in the Sample Tag legend states that the sample concentrations are in ug/kg, however, the analyte screening values are listed in mg/kg. Please clarify.
14. Figure 4-14
Sample PAI09SB02 indicates lead at 400 ug/kg or mg/kg (see above comment) as being above both residential and industrial screening values. The residential and industrial screening values are 400 and 800 mg/kg respectively. Please clarify.
15. Page 6-4 and 6-6
Page 6-4 states, "Chemicals detected at concentrations exceeding the SSL for groundwater protection, but at concentrations less than COPC screening levels for direct-contact risk, were not evaluated quantitatively in this HHRA." However, page 6-6 states, "The following chemicals were detected at maximum concentration in surface soil that exceeded the COPC screening levels for migration from soil to groundwater and were retained as COPCs for surface soil at Sites 27 and 55." Please clarify.
16. Page 6-39
The Department understands that MCAS background is being evaluated for use at MCRD. If applicable, this background data may be helpful in screening the detected analytes (especially metals) at Site 27. Please note that generally the Department request use of site specific background data rather than data from the Eastern United States as provided in the document.
17. During the RI stage the Department will concur with the calculation of PRGOs (see Krieg Comment #2 on recalculating PRGOs); however, the Department will not concur with which PRGO to use for site clean up until the FS stage.



C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment

MEMORANDUM

TO: Meredith Amick, P.E., Engineering Associate
Corrective Action Engineering Section
Division of Waste Management
Bureau of Land and Waste Management

FROM: Annie M. Gerry, Hydrogeologist 
Federal Facilities Groundwater Section
Division of Waste Management
Bureau of Land and Waste Management

DATE: February 6, 2012

RE: Marine Corps Recruit Depot
SC6 170 022 762

Review of **Draft- Remedial Investigation (RI) Report for Site 27- Motor Transportation (Motor T) Facility Site, Site 55-Fiber Optic Vault (FOV), Site 9- Paint Waste Storage Area, and Site 16-Pesticide Rinsate Disposal Area**, Marine Corps Recruit Depot (MCRD), Parris Island, South Carolina dated November 2011

Review of **Sampling and Analysis Plan (Site 55, Site 9, Site 16)** Marine Corps Recruit Depot (MCRD), Parris Island, South Carolina dated November 2010

Review of **Sampling and Analysis Plan (Site 27-Equipment Parade Deck Motor-T Site Characterization Sampling)**, Marine Corps Recruit Depot (MCRD), Parris Island, South Carolina dated November 2010

The above referenced document has been reviewed with respect to the conditions of the Federal Facility Agreement (FFA) that the Department entered into with the Navy and EPA Region 4 in January 2005. Light Non-Aqueous Phase Liquid (LNAPL) was discovered floating on groundwater during installation of the Fiber optic Vault (FOV). Site 55 is located just east of Site 27, Motor T Area and based on prior investigations, groundwater flows from the FOV toward the Motor-T Area. Site 9 (former Paint Waste Storage Area) and Site 16 (Pesticide Rinsate Disposal Area) are located to the northeast of Site 55.

The purpose of the Draft Remedial Investigation Report is to document assessment of these sites and to summarize field activities.

Based on review of this document, the following comments have been generated

COMMENTS

1. Response to Comments (RTCs) on the Site 27 and Site 55/9/16 SAPs Comment # 2

The Departments Original Comment

On Table 17-1-Proposed Groundwater Samples, VOCs, PCBs, pesticides, and MNA parameters are not included in the Proposed List of Analytes. Please add these parameters to the analyte list to obtain a complete picture of groundwater quality at Site 27.

MCRD Response: Groundwater samples will be analyzed for TCL VOCs, SVOCs, PAHs, pesticides, PCBs, and TAL metals. The Navy believes this would adequately characterize the groundwater at Site 27 and Site 55. The SAP will be modified accordingly. The Navy agrees that additional sampling is required to meet Team expectations

Department Response: Page 31, Bullet Number 3 reads, "Field investigation parameters: Water table level, groundwater dissolved oxygen, conductivity, pH, temperature, turbidity, and oxidation-reduction potential." These are some of the MNA parameters, but in the MCRD response, MNA parameters are not listed in the Proposed List of Analytes. Since field work has already been completed at this site, for future reference, please collect the complete list of MNA parameters when collecting groundwater samples from this point on.

Navy Response: MNA parameter sampling requirements will be discussed with the team during the next scoping/DQO meeting.

*In Appendix H-Preliminary Screening Technologies of this RI, natural attenuation is listed as a possible remedial alternative. However, the Department will not consider this alternative if the full MNA parameters, as listed in the 1999 EPA MNA Guidance (*Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites*) are not collected. If the Navy wants to propose natural attenuation as a remedial alternative, then MNA parameters will need to be collected.*

2. Construction activities at Site 27 (Motor T Facility) could impact groundwater flow resulting in displacement of known groundwater contamination. If contamination is detected in the clean wells, then additional wells will have to be installed for further delineation of contaminants. A response to this comment is not necessary but contamination in monitoring wells should be monitored to determine if this scenario could take place in the future.

Comments on the RI

3. On some of the figures, incorrect screening criteria were used. For example, Figure 4-7 (BTEX Exceedances In Groundwater) used soil screening values. The Navy should ensure that correct screening values are used in the revised report.
4. **Page 3-28, Section 3.5.1- Site 27, 4th bullet:** The text reads, "*The Work Plan Addendum called for the sampling of groundwater from monitoring well PAI-27-MW09S. However, the well was dry at the time of sampling (obstruction in the well).* Please clarify whether the obstruction was removed or if this monitoring well should be abandoned and re-installed.
5. **Tables 4-1 and 4-2 (Summary of RI Soil and Groundwater Results):** Please clarify on these tables (preferably in a footnote) what the terms, 'Not Applicable' and 'Not Available' mean.
6. Based on further evaluation, the exceedances shown in the tables and figures indicate that the contamination is not adequately defined in the deep groundwater zones. Pesticides, in particular are above the USEPA tapwater values (No Maximum Contaminant Level [MCL] is established) (See Appendix D-7). The Navy should propose additional deep groundwater monitoring wells to adequately define the extent of contamination in the deep aquifer.
7. **Figures 4-15 and 4-16:** This figure shows that Naphthalene was detected at 1.3 ppb from a temporary monitoring well (PAI-9/16-TW04I), which exceeds the RSL tapwater of 0.14 parts per billion (ppb). In addition, there are pesticides (Alpha, Beta and Delta-BHC) that exceed the RSL tapwater value in this well. Further, temporary monitoring well PAI-9/16-W-03S shown on Figure 4-16, indicates that Delta-BHC was detected at 0.015 ppb, which exceeds the RSL tapwater value of 0.011 ppb.

This area needs to be further evaluated to determine if naphthalene and pesticides are defined. Additional monitoring wells should be proposed.

Should you have any questions regarding this memo, please contact me via email at GerrvAM@dhec.sc.gov or by phone at (803) 896-4018.

CC: #50492



2600 Bull Street
Columbia, SC 29201-1708

MEMORANDUM

TO: Meredith Amick, P.E., Environmental Engineering Associate
Corrective Action Engineering Section
Division of Waste Management
Bureau of Land and Waste Management

FROM: Kent Krieg, Risk Assessor
Corrective Action Engineering Section
Division of Waste Management
Bureau of Land and Waste Management

KMK

DATE: February 10, 2012

RE: Marine Corps Recruit Depot
Parris Island, South Carolina

Documents: Remedial Investigation Report for
Site 27 – Motor Transportation Facility
Site 55 – Fiber Optic Vault
Site 9 – Former Paint Waste Storage Area
Site 16 – Pesticide Rinsate Disposal Area
Dated November 2011

The above referenced document by Tetra Tech NUS, Inc. has been reviewed. The Department has the following risk related comments:

General Comments:

1. The Department suggests that the Navy consider analyzing a few samples within the site areas with the highest chromium detections for hexavalent chromium during a future sampling event. By doing this specific analysis, the State believes that potential future remediation driven by the assumption that all chromium present is entirely hexavalent chromium can be addressed. As stated in the document, this conservative assumption likely overestimates the current/future risks (as Cr^{VI} is more toxic but a less stable form than Cr^{III}). No response is necessary.
2. The Department would like to emphasize that the selection of chemicals of concern, cleanup goals, and remedy selection is a site specific decision and should not be automatically set to risk level of 10^{-4} . As stated in the document, per USEPA RAGs, the 10^{-6} risk level is the point of departure, with a risk management decision being necessary by the risk managers when the ILCR is within 10^{-6} to 10^{-4} risk range.

Specific Comments:

6.2.2 Exposure Point Concentrations, pg. 6-14 and 6.9.2 Exposure Point Concentrations, pg. 6-58.

The Department does not agree with the statement that "the groundwater plumes at Sites 27 and 55 extend over the entire sites, therefore all the monitoring wells were used in the calculations of the exposure point concentrations (EPCs) for groundwater for all COPCs." As stated in the referenced USEPA Region 4 guidance, "the arithmetic average of the wells in the highly concentrated area of the plume" can be used as the EPC for groundwater risk calculations. Although this is an acceptable means to determine the EPC, the complex nature of the plumes as well as cost effective means usually justify the use of the maximum concentration detected as the EPC. As presented, the State does not concur with the selected wells used in the averaging calculations due to the use of wells outside of the highest area of concentration in the plume (including wells with non-detect results). SCDHEC believes that there are a few ways to address this concern:

- 1) Using the arithmetic average of the well concentrations as the EPC would require more chemical specific detail as to which wells were selected for use in the averaging calculations. In addition, information on the well locations in relation to the highest concentrated area of each chemical specific plume should be provided. The State would like to express its interpretation of 'highest concentration area of the plume' to mean just that, the highest area of concentration within the plume (i.e. those wells that fall within the greatest isocontour lines on isoconcentration maps).
- 2) Using the maximum concentration value as the EPC may be more effective at this stage of the investigation. This approach does not require defining the maximum area of concentration within the plume for each contaminant. As stated in RAGS, the maximum concentration may be used to place an upper bound on exposure. Although this will add to the conservative nature of the risk assessment, it will assist the risk managers in defining COCs and, ultimately, cleanup at the site.

Please be sure to make note of the various tables, calculations, and recommendations throughout the document that are dependent upon the EPC value (including, but not limited to, RAGS Part D Tables, COC selection, and PRGO development).

6.4.3 Results of the Risk Characterization, pg. 6-32 and 6.11.3 - Results of the Risk Characterization, pg. 6-74

To assist in future review and the risk manager's decision making process, the Department requests that the risks for each receptor be listed in the results section if it falls within or above the HLCR USEPA risk management range of 10^{-6} to 10^{-1} (rather than only those that exceed 10^{-1}) or a HI of 1. Please refer to General Comment #2 above. It was helpful seeing the values as presented in the 'non-carcinogenic risks'

sections. (i.e. p.6-33: Cumulative ILCRs for trench workers (2.8×10^{-6}) and construction workers (9.9×10^{-6}) exposed to soil and ground water....)

6.4.3.1 – Non-Carcinogenic Risks – Site 27, pg. 6-32.

The values listed for the future child resident do not match Table 9.4 or Table 6-23. It appears that the surface and subsurface values have been switched. Please correct any inaccuracies.

6.7 – Summary – Sites 27 and 55, pg. 6-46 and 6.14 – Summary – Sites 9 and 16, p. 6-86

The summary of risks should include those COPC values that fall within the risk management range. As stated in the document, only the media with the risk estimate exceeding 10^{-4} are identified as COCs. Please refer to General Comment #2 above. The *Summary of Risk Estimates* table as presented is an extremely effective way to present those COCs that exceed the upper bound of the target risk range (greater than 10^{-4}), or an HI of 1. The Department suggests an additional table be added to show the chemicals that fall within or above the target risk range (values greater than 10^{-6}), or an HI of 1.

6.13 – Remedial Goal Options, pg. 6-86.

The document states that the chemical-specific RGOs for soil and groundwater are presented in Table 6-49. Table 6-49 only list RGOs for soil. Please correct this discrepancy.

RAGS Part D Table 7 – Calculation of Chemical Cancer Risks and Noncancer Hazards for Site 9/16, Appendix G pg. 642-656 of 755.

The COPC beta-BHC does not appear on the table as part of the groundwater calculations.

If you need any further information, feel free to contact me at (803) 896-4262.



C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

MEMORANDUM

TO: Meredith Amick, Environmental Engineering Associate
Corrective Action Engineering Section
Division of Waste Management
Bureau of Land and Waste Management

FROM: Kent Krieg, Risk Assessor
Corrective Action Engineering Section
Division of Waste Management
Bureau of Land and Waste Management

DATE: April 29, 2011

RE: Marine Corps Recruit Depot
Parris Island, South Carolina

Documents:

Sampling and Analysis Plan Site 27 – Equipment Parade Deck
Motor-T Site Characterization Sampling
Dated November 2010

The above referenced documents by Tetra Tech NUS, Inc. have been reviewed. The Department does not have any risk related comments at this time.

If you need any further information, feel free to contact me at (803) 896-4262.



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MEMORANDUM

TO: Meredith Amick, Environmental Engineering Associate
Corrective Action Engineering Section
Division of Waste Management
Bureau of Land and Waste Management

FROM: Kent Krieg, Risk Assessor
Corrective Action Engineering Section
Division of Waste Management
Bureau of Land and Waste Management

DATE: May 6, 2011

RE: Marine Corps Recruit Depot
Parris Island, South Carolina

Documents:

Sampling and Analysis Plan Site 55 – Fiber Optic Vault, Site 9 – Paint Waste
Storage Area, Site 16 – Pesticide Rinsate Disposal Area
Dated November 2010

The above referenced documents by Tetra Tech NUS, Inc. have been reviewed. The Department does not have any risk related comments at this time.

If you need any further information, feel free to contact me at (803) 896-4262.