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LETTER REGARDING SOUTH CAROLINA DEPARTMENT OF HEALTH AND  
ENVIRONMENTAL CONTROL COMMENTS ON FEASIBILITY STUDY REPORT FOR SITE 27  
AND REVIEW OF RESPONSE TO COMMENTS ON CONDITIONAL APPROVAL FOR DRAFT  
FINAL REMEDIAL INVESTIGATION FOR SITE 9, 16, 27 AND 55 MCR

11/15/2012

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL



Catherine B. Templeton, Director

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

November 15, 2012

Commanding Officer  
NAVFAC Southeast  
ATTN: Mr. Dan Owens  
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: Comments to Site 27

- Feasibility Study Report
- Response to Conditional Approval of the RI Report
- Changes Pages for the RI Report
- Three Missing Wells at Equipment Parade Deck Satellite Accumulation Area (SWMU 27)

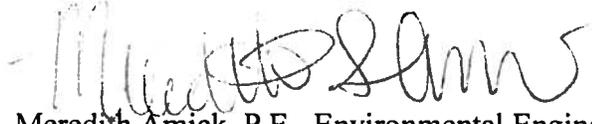
Marine Corp Recruit Depot (MCRD)  
Parris Island  
SC6 170 022 762

Dear Mr. Owens 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 documents received October 1, 2012. The Department reviewed the document with respect to applicable sections of the South Carolina Hazardous Waste Management Regulations (SCHWMR). Based on this review the Department has comments. Please see the attached 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 written in a cursive style with a large initial "M".

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, TtNUS

Engineering Memo  
Prepared by Meredith Amick *MA*  
Marine Corp Recruit Depot (MCRD)  
October 24, 2012

Comments to Feasibility Study Report:

1. Table ES-1 and Page 5-3  
Please clarify the statement, "There would be a slight risk to the community from transport of contaminated soil."
2. Table ES-2  
There appear to be contradictory statements about the protectiveness of the Groundwater Remedies for G-3 and G-5 under the headings "Overall Protection of Human Health and Environment" and "Long-Term Effectiveness and Permanence". Please correct.
3. Please provide exact values when discussing risk to a receptor in addition to saying within the risk range, etc.
4. Figure 1-31 and Section 1.2.3  
Please clarify if the area disturbed by the construction of the Motor-T Facility had original soil moved or if soil was placed on top of the original grade. Additionally please clarify if the entire area had 2 ft of fill placed on top of the original grade or if and where sloping of the additional fill occurred.
5. Please clarify if the maximum concentrations for subsurface soil at Site 27 listed on page 2-2 include the original surface soil 0-2 ft samples, which would now be in the subsurface due to the filling of the site. Additionally discuss if the risk assessment performed for subsurface soil at Site 27 is based on including the original surface soil data.
6. Section 2.5.1 and Section 3.2  
Please clarify that both the removal and disposal general response action would need to be completed together.
7. The table for soil on Page 2-8 is confusing. The Department believes that this table should contain clean up goals for soil. When calculating clean up goals for soil, generally both risk level clean up goals as well as leachability to groundwater goals are calculated; then the more conservative of the two is chosen. Additionally please discuss and explain why  $10^{-5}$  industrial risk level is used to calculate clean up goals for soil. Please correct the document.
8. The leachability to groundwater numbers for the DDX compounds are in the range of 40-70 ug/kg. Please discuss the ability to clean up groundwater when leaving DDX in the subsurface soil in contact with the water table at upwards of 10,000 ug/kg (i.e. SO-18). Additionally the time to obtain MCLs should be modeled, provided, and discussed in terms of the soil and groundwater remedies selected.
9. Because COCs of Site 27, 55, 9, and 16 were detected in Outfall 405, this should be discussed in the document. Additionally RAOs and remedial alternatives should be developed for this outfall.

10. Page 1-26

This section states, "As a result an ecological risk component will be added to the monitoring program associated with each remedial alternative in this FS." The remedial alternatives did not appear to have ecological risk components to them. Please clarify.

11. Please discuss why SO-17 and SO-18 are not proposed to be removed as well. The values of DDX in these samples is equally as high as SO-14, 15, and 16.

12. Page 3-14

This page states, "The groundwater will need to be treated with GAC (or a similar process) to MCLs prior to discharge to a storm sewer or tributary to Archers Creek. Alternatively, the treated groundwater may be discharged to the local publicly-owned treatment works (POTW)." Please note if any of these options are chosen, the proper permits and authority must be granted.

13. Page 4-8

This page states, "Some of the soils may not be impacted by the COCs and would be returned to the excavation." Please clarify how it will be known that the soils are "unimpacted".

14. In email discussions with the team, the cemetery area appears larger than what is shown on figures in this document. The proper cemetery area should be shown on these maps.

15. An RAO for soil in reference to migration of soil contaminants to groundwater should be developed. See comment #8.

16. Figure 4-4

This figure is reference on page 4-20; however, it does not exist. Please correct this issue.

Comments to the Conditional Approval of the RI Report:

17. Response to Condition #3

Because PAHs were retained as COCs, the Department has no further comments on this issue.

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Catherine B. Templeton, Director

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John O. Hutto, Sr., MD

## **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:** November 15, 2012

**RE:** Marine Corps Recruit Depot  
SC6 170 022 762

**Review of Draft- Feasibility Study 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 September 2012**

**Review of Response to Comments (RTCs) for Conditions for Approval of the Draft Final Remedial Investigation for Sites 27, 55, 9, and 16, Marine Corps Recruit Depot (MCRD), Parris Island, South Carolina dated June 25, 2012**

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 this Feasibility Study (FS) is to establish Remedial Action Objectives (RAOs), and to evaluate and compare different remedial alternatives.

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

1. In **Table 3-2, Preliminary Screening of Remedial Technologies and Process Options for Groundwater and LNAPL**- It was noted that In Situ Chemical Oxidation (ISCO) is retained as a remedial technology with different examples of amendments that could be

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possibly be used (RegenOX™, Fenton's Reagent, etc.) but notes that degradation of pesticides would be uncertain and conditional. The amendment, Hydrogen Release Compound (HRC) could possibly degrade pesticides in addition to other chemicals of concern (COCs). Please include HRC into the preliminary screening of remedial technologies to evaluate whether using HRC would be a promising technology to remediate this site and revise the FS as necessary.

**2. RTCs on Site 27, Rev 1, Site 55/9/16 Rev 1 and Draft RI Report for Site 27, 55, 9, 16  
Comment #7**

It is still unclear if the Navy has agreed or disagreed to continue to monitor for naphthalene and pesticides in all existing wells and that more data is necessary to determine the extent of contamination. Please clarify.

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

BOARD:  
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Vice Chairman



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Catherine B. Templeton, Director

*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:** November 15, 2012

**RE:** Marine Corps Recruit Depot  
SC6 170 022 762

Review of Three Missing Wells at Equipment Parade Deck Satellite Accumulation Area (Site/SWMU 27), dated October 5, 2012 (Kirkpatrick to Amick)

The Department received a letter from the Marine Corps Recruit Depot (MCRD) at Parris Island indicating that three wells (PAI-27-MW19S, PAI-27-MW49S, and PAI-27-MW05I) were missing when the construction contractor attempted to locate the wells for planned construction activities. After numerous attempts to locate the wells using various methods (Global Positioning System [GPS], metal detectors, and digital geophysical mapping equipment) it is likely that the missing wells were accidentally destroyed when the water and storm drainage systems were installed and the wells were not adequately marked.

Based on review of the location of the three wells, the Department believes they are good locations to monitor plume migration and planned remediation efforts at this site, and should therefore be re-installed. Please submit a formal request to the Department to re-install these wells.

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

File # 50492



Catherine B. Templeton, Director

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## 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

DATE: October 26, 2012

RE: Marine Corps Recruit Depot  
Parris Island, South Carolina

Document: Draft Feasibility Study Report for  
Site 27 – Motor Transportation Facility, Site 55 – Fiber Optic Vault, Site 9  
– Former Paint Waste Storage Area, Site 16 – Pesticide Rinsate Area  
Dated September 2012

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

### Specific Comments:

Table 2-4 –

The #3 footnote does not match the footnote on the corresponding Appendix A table. It appears Table 2-4 incorrectly referenced Site 27 removal areas rather than the Site 55 area near PAI-27-SO14,-15, and -16.

4.2.2.1 Description, *Component 3: Off Site Disposal*, page 4-8.

The Department is hesitant to agree that there may be soils that are unimpacted by the COCs that would be suitable to be returned to the excavated areas. Although some soils may have a lower concentration of COCs, historical samples show that elevated levels do exist in the surface soil range. In addition, the post-removal risk calculations used data values correlating to clean fill. Unless analysis is conducted on this fill, it is suggested that the Navy reconsider this approach.

Typos (no response necessary):

4.2.2.1 Description, *Component 1: Surface Soil Excavation*, page 4-8.

“One surface soil excavation area *at Site 27* is located near the FOV...” The surface soil exaction description incorrectly references Site 27 rather than Site 55.

Appendix A: Site 9 and Site 16 Post Removal Risk Calculations – Industrial Worker.

The original EPC footnote incorrectly references the risks for Site 55 rather than Site 9/16.

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

