

M00263.AR.000337
MCRD PARRIS ISLAND
5090.3a

LETTER REGARDING U S EPA REGION IV APPROVAL OF REMEDIAL INVESTIGATION
ADDENDUM WORK PLAN FOR SITE 45 WITH TRANSMITTAL OF U S NAVY RESPONSE TO
REGULATOR COMMENTS ON DRAFT WORK PLAN MCRD PARRIS ISLAND SC

12/22/2004

U S EPA REGION IV



United States Environmental Protection Agency

Region 4

Atlanta Federal Center

61 Forsyth St. SW, Atlanta, GA 30303-8960

December 22, 2004

4WD-FFB

Brigadier General Joseph J. McMnamin
Commander
Marine Corps Recruiting Depot - Parris Island
P.O. Box 19001
Parris Island, SC 29906-9001

Subject **Final Site/SMWU 45
RI/RFI Addendum Work Plan
Marine Corps Recruit Depot
Parris Island, South Carolina
EPA ID# SC6170022762
December 2004**

Dear General McMnamin:

The United States Environmental Protection Agency (EPA) has completed its review of the subject document, as well as the Response To EPA's October 25, 2004 Comments (RTCs) provided via Sladic email of December 6, 2004. The general technical approach presented in the Work Plan Addendum is adequate and should achieve the project objectives of defining the horizontal and vertical extent of groundwater contamination. Therefore, EPA approves the Site/SWMU 45 RI/RFI Work Plan for Marine Corps Recruit Depot Parris Island.

If you have any questions, please contact me at (404) 562-8543.

Sincerely,

Patricia J. Goldberg
Federal Facilities Branch

cc: Tim Harrington, MCRD-PI
 David Scaturro, SCDHEC
 Don Hargrove, SCDHEC
 Art Sanford, NAVFAC

**Response to USEPA Comments
Draft RI Addendum Work Plan**

Patricia J. Goldberg

Specific Comments

1. **Comment:** Page 2-1, Section 2.1. Please include in this section the dates that Building 193 operated as the MWR Dry Cleaning Facility. Additionally, if the capacities of the former AST and UST systems is known, please include that information in this section.

Response: The dates of operation of Building 193 and the capacities of the UST and above ground tanks are not known. Relevant documents in the electronic administrative record were searched for this information, without success. If the information is able to be found, the information will be provided in the RFI report.

2. **Comment:** Page 2-1, Section 2.1, 2nd Paragraph, 2nd Sentence. The text states that the former underground storage tanks stored "hydrocarbon cleaning solvents". If the exact contents of the former UST system are known, please include that detail in the text. Additionally, the former UST system is not depicted in any figure. Please show the former location of the UST system and provide a text reference where appropriate.

Response: Relevant documents in the electronic administrative record were searched for this information, without success. If the information is able to be found, the information will be provided in the RFI report.

3. **Comment:** Page 2-2, 3rd Complete Paragraph. Please discuss in this section if vertical head differences exist between the shallow surficial and deeper surficial aquifers.

Response: According to Section 3.4.2 of the RI/RFI Report, the vertical gradient was negligible for the wells within a cluster, less than 0.1 foot. No pattern was observed and some clusters had an upward gradient and others had a downward gradient. The third paragraph will be modified by adding:

"During the RI/RFI, the vertical gradient between wells in a cluster was observed to be negligible, typically less than 0.1 foot. In some cases there was an upward gradient, and in other cases there was a downward gradient."

4. **Comment:** Page 2-6, Section 2.3.5, 2nd Paragraph, Last Sentence. Please state in the text if the extraction recovery wells have been properly abandoned.

Response: The extraction wells have not been abandoned. This will be included in Section 2.3.5.

5. **Comment:** Page 2-6, Section 2.3.6, 3rd Paragraph. In the text clarify the difference between "on-site samples" and "off-site samples".

Response: This text was taken from the RI/RFI Report. The "on-site" samples were collected within about 35 feet from the former above ground tanks. The "off-site" sample were collected 40 feet and beyond (as far as 900 feet) from the former tanks. The text will be revised with "(within about 35 feet of the former above ground tanks)" and "(40 feet or more from the former above ground tanks)".

6. **Comment: Figure 3-1, Site Conceptual Model.** It is reported that the RI/RFI determined that there were no unacceptable risks to human health under residential, worker, or visitor use scenarios, however, figure 3-1 depicts soil contamination present under and surrounding building 193. Please clarify the risk text, or update the Site Conceptual Model as appropriate.

Response: Section 3.4 will be revised to indicate that the contaminated soil concentrations may impact groundwater. The following will be added:

"PCE and other chlorinated VOCs are present in the surface and subsurface soils at concentrations that can impact groundwater through leaching."

The exposure pathway arrow for "Inhalation, Ingestion, and Dermal Contact" in Figure 3-1 will be kept because residential uses of groundwater pose an unacceptable risk

7. **Comment: Figures 6-1 and 6.2.** Please indicate in the figure if a well cap will be used in the well construction.

Response: A well cap will be added to each figure.

8. **Comment: Page 8-1, Section 8.0.** The text incorrectly reports that the site specific DQOs are provided in Section 4.0. Since the site specific DQOs have been presented across various portions of the work plan addendum, it is recommended that Figure 1-2, "Data Quality Objectives Process" which provides a crosswalk between specific DQO steps and the relevant report sections be referenced in this chapter.

Response: The first paragraph of Section 8.0 will be revised to:

A general discussion of the data quality process is provided in the Master Work Plan (B&R, 1998). Site-specific DQOs are provided **throughout the Work Plan, and Figure 1-2 illustrates how various sections of the Work Plan relate to the steps in the DQO process.** Laboratory DQOs are discussed in Section 10.0 of this document

9. **Comment: Figure 9-1.** Please update the figure to reflect the current USEPA RPM, SCDHEC RPM and Navy RPMs.

Response: The figure has been updated to indicate the current U.S. EPA, SCDHEC, and Navy RPMs.

**Response to SCDHEC Comments
Draft RI Addendum Work Plan**

Leon F. Fulmer, Jr.

General Comment

1. **Comment:** Most of the work proposed in the plan includes further identification of the extent of the groundwater contamination. However, the plan refers to several soil samples (both surface and subsurface) that have been collected previously which were found to be contaminated. What actions will be taken to verify these soils are not continuing to be source of contamination to the groundwater?

Response: The RI/RFI Report identified surface and subsurface soil contaminated with PCE and other chlorinated VOCs at concentrations greater than the U.S. EPA's SSLs for soil-to-groundwater. Remediation of the soil will be addressed in a subsequent FS/CMS document. The following will be added to further define the scope of work of this work plan:

To Section 1.1, prior to the last paragraph:

"PCE and other chlorinated VOCs were detected in the surface and subsurface soils at concentrations that can continue to impact site groundwater through leaching. No additional delineation of contaminated soil is proposed."

To Section 2.3.6, following the final paragraph:

"PCE and other chlorinated VOCs were detected in the surface and subsurface soils at concentrations greater than U.S. EPA soil screening levels for migration of contaminants for soil to groundwater."

To Section 2.4:

"4. Chlorinated compounds are present in the soil a concentrations that can impact groundwater. The soil contamination will be addressed in the FS/CMS."

Specific Comments

2. **Comment:** Section 2.1 refers to an underground storage system for hydrocarbon-cleaning solvents that was removed and replaced with the above ground tanks. Has any studies been performed to determine if this system was leaking and contaminating the surrounding soil area? If not, what steps will be taken to insure any contaminated soil is not a current source of pollution to the groundwater?

Response: The former UST was located in the general vicinity of the above ground tanks. The numerous groundwater samples and analyses have not shown significant concentrations of non-chlorinated compounds. As noted, no additional actions for contaminated soil are proposed at this time.

3. **Comment:** Section 2.3.3 states several soil samples were taken during the drilling of the monitoring wells for 1996 study. Accordingly, PCE and TCE were detected in several of the samples. Was this soil/source left in place?

Response: Other than the contaminated soil that was removed when the spill occurred, no other contaminated soil has been removed.

4. **Comment:** What were the test results for the subsurface soil samples collected from the 13 soil borings referred to in Section 2.3.6?

Response: PCE and TCE, along with other chlorinated VOCs, were detected in surface and subsurface soil samples at concentrations greater than the U.S. EPA soil screening levels for migration of contaminants from soil to groundwater. PCE concentrations were up to 15,000 ug/kg, although one sample was 8,000,000 ug/kg. TCE concentrations were up to 8,200 ug/kg, although one sample was 120,000 ug/kg. Cis-1,2-DCE concentrations were up to 40,000 ug/kg.

5. **Comment:** Section 7.2.1 refers to subsurface soil samples to be taken from the peat layer. If contaminated soils are found, what action will be taken to remediate this potential source?

Response: The peat layer is below the water table. Remedial actions will be considered after the RI/RFI Addendum investigation is completed.

Donald C. Hargrove

1. **Comment:** Section 6.3, Membrane Interface Probe Logging:

- a) Last sentence, bottom of page 6-2: The word "backfilled" should be replaced with "abandoned." Please revise the text accordingly.
- b) Abandonment of the MIP points must follow the appropriate sections of R.61-71 for abandonment. The specific regulation citations are given below:

R.61-71.H.4.c(3): A Temporary Direct Push Well that does not penetrate a confining layer shall be abandoned by forced injection of neat cement, bentonite-cement, or 20% high solids sodium bentonite grout through a tremie pipe after the sampling device has been removed.

The proposed MIP points that do not penetrate the confining layer must be abandoned according to R.61-71.H.4.c(3).

R.61-71.H.4.c(4): A Temporary Direct Push Well that penetrates a confining layer shall be abandoned by forced injection of neat cement, bentonite-cement, or 20% high solids sodium bentonite grout through the sampling device as the sampling device is removed from the sub-surface. Abandonment shall occur during the initial withdrawal from the original push borehole and not by a separate tremie tool after the sampling device has been removed to ensure the breach in the confining layer is permanently sealed.

The proposed single MIP point that will be advanced to 30 feet bgs must be abandoned according to R.61-71.H.4.c(4).

Please revise the text in accordance with these two regulations.

Response: (a) Per the comment, "backfilled" will be replaced by "abandoned".

(b) The two paragraphs regarding abandonment will be added to the end of Section 6.3

2. **Comment:** Section 6.4, Peat Layer Sampling: The proposed sampling of the peat/clay layer poses the risk of connecting two geologically separated portions of the surficial aquifer. As such, these sample points should be abandoned according to R.61-71.H.4.c(4). Please revise the text to specify proper abandonment.

Response: Sample locations will be selected from thick peat layers to minimize the potential for fully penetrating the confining layer. In any case, the following sentence will be added to Section 6.4:

"Borings will be abandoned as described in Section 6.3."

3. **Comment:** Section 6.4, Temporary Well Installation: The type of grout to be used during abandonment is not specified. The text specifies that these temporary wells will be installed above the peat/clay layer. As such, they must be abandoned according to R.61-71.H.4.c(3). The types of grout that are allowable are: neat cement, bentonite-cement; or 20% high solids sodium bentonite grout. Please revise the text to include this specification.

***nota bene:** It would be acceptable to address all of the abandonment comments listed above by the inclusion of a specific section concerning abandonment of all temporary wells.

Response: Section 6.5 will be revised by deleting the last sentence in the final paragraph, and adding the following to the remaining sentence:

"...as described in Section 6.3."

4. **Comment:** Section 6.6, Monitoring Well Installation: First sentence, top of page 6-5: This sentence states that the primary filter pack will be installed flush with the bottom of the well. The Division suggests that at least six (6) inches of filter pack be installed below the well screen prior to placement of the primary casing. This additional filter pack will ensure that there is no bridge between the formation and the screen. The typical monitoring well detail figures that are included in this section already reflect filter pack placement below the casing.

Response: The first sentence in the first paragraph at the top of Page 6-5 will be revised by replacing "flush with" with "from 6 inches below".

5. **Comment:** Section 7.2.2, Groundwater Sampling: This section incorrectly references Figure 7-2. Please revise to reference Figure 7-1.

Response: The figure reference will be changed to Figure 7-1.

6. **Comment:** Appendix B-8, SA-2.5: Direct Push Technology (Geoprobe/Hydropunch): Section 6.3, fifth bullet, states that "The hole will be backfilled with bentonite chips or bentonite cement grout, depending upon project requirement." It should be understood that the use of pure bentonite for abandonment is not acceptable. Acceptable abandonment materials are: Neat Cement; Cement/Bentonite Grout; or 20% High Solids Sodium Bentonite Grout. It is understood that this Appendix is part of a company-wide SOP; therefore no revision to this Appendix is necessary. However, the type of abandonment material should be specified in the text of this work plan.

Response: The comment has been addressed in the previous comments. The abandonment requirements will be included in Section 6.3.