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MCRD PARRIS ISLAND
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LETTER OF TRANSMITTAL AND SOUTH CAROLINA DEPARTMENT OF HEALTH AND
ENVIRONMENTAL CONTROL COMMENTS ON REMEDIAL INVESTIGATION ADDENDUM
FOR SITE 45 MCRD PARRIS ISLAND SC

3/22/2010

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL



C. Earl Hunter, Commissioner

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

March 22, 2010

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

RE: Comments to the Site 45 RI Addendum
Marine Corp Recruit Depot (MCRD)
Parris Island
SC6 170 022 762

Dear Mr. Cook:

The Division of Waste Management of the South Carolina Department of Health and Environmental Control (Department) completed the review of the Site 45 RI Addendum received January 14, 2010. Based on this review the Department provides the following engineering, hydrogeology, and risk assessment comments.

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

Sincerely,

Meredith Amick, Environmental Engineer Associate
Corrective Action Engineering Section
Division of Waste Management

cc:

Tim Harrington, MCRD Parris Island
Annie Gerry, Hydrogeology
Priscilla Wendt, SCDNR
Russell Berry, EQC Region 8, Beaufort

Lila Llamas, EPA Region 4
Tom Dillon, NOAA (via email)
Mark Sladic, TiNUS
Heber Pittman, MCRD Parris Island



ENGINEERING COMMENTS

Prepared by Meredith Amick

Promoting and protecting the health of the public and the environment
Marine Corps Recruit Depot (MCRD)

March 22, 2010

General Comments

1. The Department is concerned about this site as it is one of the few sites on Parris Island with a groundwater plume, information provided in previous team meetings indicates that the plume is discharging to the marsh, and the data in the RI Report is several years old. In order for the Department to determine the most appropriate path forward, in the Feasibility Work Plan the Department expects to see
 - all site groundwater, soil, sediment, and surface water data;
 - site history;
 - a conceptual site model;
 - vapor intrusion data;
 - thorough site discussion (including risk);
 - and recommendations for the remedy.

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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: March 11, 2010

RE: Marine Corps Recruit Depot
Parris Island, South Carolina

Document:

*Remedial Investigation Addendum for
Site/SWMU 45 - Former MWR Dry Cleaning Facility
Dated January 2010*

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

General Comments:

1. In order to expedite the site remediation process, the Department requires no additional risk-related revisions to this document. Although further information may be required in the future, the delay in approval of this RI/RFI document (5+ years) is allowing the contamination plume to migrate.
2. The Department is concerned about the migration of contamination into the storm drains and its eventual release into Ballast Creek. Not only does this raise potential risk concerns for the neighboring wetland/marsh area, it also provides a pathway for the contamination to travel offsite into the Beaufort River.

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

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MEMORANDUM

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

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

DATE: March 22, 2010

RE: Marine Corps Recruit Depot
SC6 170 022 762

Review of DRAFT- Remedial Investigation Addendum for Site/SWMU 45-
Former MWR Dry Cleaning Facility, Marine Corps Recruit Depot (MCRD),
Parris Island, South Carolina

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. Site 45 is a former dry cleaner where in March 1994 a tetrachlorethene (PCE) spill of unknown quantity was released into soil near the above ground PCE storage tanks at Site 45. The purpose of this document is to summarize field activities conducted in Spring 2005 at the former Morale, Welfare and Recreation (MWR) Dry Cleaning Facility and to further characterize the nature and extent of contaminant migration in groundwater caused by past releases at this site. Contaminants at this site above their maximum contaminant levels (MCLs) include tetrachloroethene (PCE, MCL=5µg/l), trichloroethene (TCE, MCL= 5µg/l), Total 1,2 Dichloroethene (DCE, Region 9 Tap Water Criteria = 61µg/l) and Vinyl Chloride (VC, MCL= 2µg/l).

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

Specific Comments

1. *On Page 1-2, first paragraph*, the text reads "These tanks were first put into place in 1988; following the removal of an underground storage system where hydrocarbon

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cleaning solvents were previously stored." Please include the dates of operation of the USTs.

2. On Page 1-3, Section 1.2.3, the heading reads, "United States Geological Society Storm Sewer Investigation and Related Investigations." I believe there was a typographical error and the heading should read "United States Geological Survey..."
3. On Page 3-3, Section 3.2.3 *Temporary Well Installation*, the document states that some temporary wells were screened for the presence of DNAPL. However, it is unclear in the document how wells were selected for screening and the criteria used to select these wells. This document should be revised.
4. On Page 3-3, Section 3.2.3 *Temporary Well Installation*, the text states, "DNAPL screening was performed using a field-screening ultraviolet unit on selected soil samples." However, there appears to be only one temporary well log (TW-109-SL) that was documented as being screened for DNAPL located in Appendix B on the provided CD. Please clarify this information.

5. On Page 3-4, 2nd to last paragraph, the text reads

For the deep surficial aquifer monitoring wells (D), a 6-inch steel casing was set and grouted into the peat/clay layer by using large-diameter hollow-stem augers. The grout was allowed to set for a minimum of 24 hours, then drilling proceeded through the 6-inch casing with mud rotary methods to the final depth of the borehole.

Please indicate the diameter of the large hollow-stem augers. In addition, please explain why a mud rotary was used.

6. On Page 3-4, Section 3.2.2 *Screened Interval Sampling*, the text reads, "These samples were submitted directly to the Navy which will proceed with analyses to support microbial studies not related to this report." Please indicate if the microbial data has been reported and in what study this information on microbial data can be found. In addition, if not already done so, please provide a report of the microbial study to the Department.
7. On Page 3-5, the text reads, "A 4-inch by 4-inch aluminum identification plate (when available) will be affixed to each well and will contain the following information..." This text seems to indicate that not all monitoring wells were properly labeled.

All monitoring wells are required to be labeled per the S.C 61-71 Well Standards and Regulations. The document should be revised to clarify if all wells are properly labeled

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in accordance with the S.C. Well Standards. If they are not, the MCRD must properly label the wells.

8. On *Page 4-1-2005 Groundwater Sampling Results*, the text reads, "The deep wells were very clean indicating contamination is not migrating vertically to any great extent with a maximum cis-1,2-DCE "detected" concentration of 2.0J $\mu\text{g/l}$ at MW-07D." This statement is incorrect.

Monitoring wells PAI-MW06-D-02 had detections of cis-1,2-DCE (0.3J $\mu\text{g/l}$), PAI-MW07-D-02 had detections of cis-1,2-DCE (0.2J $\mu\text{g/l}$), and PAI-MW021-D-02 had detections of PCE (0.5J $\mu\text{g/l}$), TCE (0.3J $\mu\text{g/l}$) and cis-1,2-DCE (0.4J $\mu\text{g/l}$). The deep wells cannot be 'very clean' when there were detections of concentrations in 3 of 4 deep wells, and therefore this statement should be revised.

9. On *Page 4-6-Natural Attenuation Update*, this section suggests that Monitored Natural Attenuation (MNA) alone is insufficient to address groundwater contamination at this site. Additional active remedies must be considered in the CMS at Site 45.
10. On *Page 7-3- Conclusions*, recommendations are not mentioned in this report. Please state that recommendations will be presented in the next report (Feasibility Study- FS).
11. In *Figures 3-5, 3-6, 3-7, 4-1, and 4-2*, please update the key to include the Temporary Monitoring Wells. It is unclear in these figures where they are located on the map.

General Comments

12. A groundwater sampling schedule needs to be implemented immediately at this site. In order for the Department to comment on the FS, more data will need to be collected. Therefore, MCRD should begin sampling every well on a quarterly basis until the FS is completed for: SVOCs, VOCs and TAL Metals. In addition, please collect MNA parameters, such as pH, ORP, DO as well.

A quarterly groundwater sampling schedule should be instituted no later than June 2010.

13. Based on groundwater sampling results, it appears that the groundwater plume is not defined both horizontally and vertically. At this point in time, the Department will not require additional assessment of the vertical extent of contamination. Further evaluation of the need for additional deeper wells will be completed after additional groundwater data is collected (as discussed in Comment #12).

Monitoring wells are needed in the Northeast, Northwest, Southeast and Southwest quadrants. Rationale is presented below.

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Northeast/Northwest Quadrant: Presence of elevated concentrations above MCLs

PAI-45-MW24-SU: PCE (1500 µg/l), TCE (20500 µg/l) Total 1,2 DCE (67500 µg/l), and VC (1150 µg/l)

PAI-45-MW08-SU: PCE (2600 µg/l), TCE (5300 µg/l), Total 1,2 DCE (2700 µg/l) and VC (220 µg/l).

Southeast/Southwest Quadrant: Presence of elevated concentrations above MCLs in proximity to Ballast Creek and the marsh.

PAI-45-MW19-SL: TCE (100 µg/l), VC (22 µg/l)

PAI-45-TW-138-SU: PCE (1600 µg/l), TCE (2100 µg/l), Total 1,2 DCE (390 µg/l), and VC (120 µg/l)

PAI-45-MW23-SU: TCE (500 µg/l), Total 1,2 DCE (1200 µg/l), and VC (300 µg/l)

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

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