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MCRD PARRIS ISLAND  
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LETTER REGARDING SOUTH CAROLINA DEPARTMENT OF HEALTH AND  
ENVIRONMENTAL CONTROL NOTICE OF TECHNICAL INADEQUACY FOR U S NAVY  
RESPONSE TO COMMENTS ON REMEDIAL INVESTIGATION FOR SITE 45 WITH  
ATTACHMENTS MCRD PARRIS ISLAND SC

5/26/2004

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL



2600 Bull Street  
Columbia, SC 29201-1708

May 26, 2004

Mr. Timothy Harrington  
Marine Corps Recruit Depot  
P.O. Box 19003  
Beaufort, SC 29905

RE: Notice of Technical Inadequacy (NOTI) – Response to Comments  
Remedial Investigation/RCRA Facilities Investigation for Site/SWMU 45  
Former MWR Dry Cleaning Facility (June 2002)  
Marine Corps Recruit Depot, Parris Island  
SC6 170 022 762

Dear Mr. Harrington:

The South Carolina Department of Health and Environmental Control (Department) reviewed the response to comments for the above referenced RFI Report for Site/SWMU 45 on July 03, 2002. Based on this review, the Department finds the response to comments to be technically inadequate. Please refer to the attached engineering comments and the attached memorandum prepared by Susan Byrd. The Department requires that the attached comments be completely and adequately addressed and resubmitted for review.

If you have any questions regarding this issue, please contact me at (803) 896-4185.

Sincerely,

David Scaturo, P.E., P.G.  
Manager, Corrective Action Engineering Section  
Division of Waste Management  
Bureau of Land and Waste Management

Attachment: Engineering Comments by David Scaturo  
Attachment: Memorandum from Susan Byrd to Gil Rennhack

cc: Donald Hargrove, Hydrogeology  
Patricia Goldberg, EPA Region 4  
Art Sanford, SOUTHDIV NAVFAC  
Roger Stevens, Low Country EQC District



2600 Bull Street  
Columbia, SC 29201-1708

## MEMORANDUM

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

FROM: Susan K. Byrd, Risk Assessor *Susan K. Byrd*  
Corrective Action Engineering Section  
Division of Waste Management  
Bureau of Land and Waste Management

DATE: January 20, 2004  
RE: Marine Corp Recruit Depot  
Parris Island, South Carolina

Document:  
RCRA Facility Investigation / Remedial Investigation-Response to Comments  
Site/SWMU 45  
June 2002

Upon review of the above referenced document, all revisions and responses to the Department's risk related comments were adequately addressed. I have no additional comments regarding the document. If you need any additional information, feel free to contact me at (803) 896-4188.

## ENGINEERING COMMENTS

**Response to Comments  
Draft Remedial Investigation/RCRA Facility Investigation Report  
Site/SWMU 45 - Former MWR Dry Cleaning Facility  
MCRD Parris Island, SC  
June 2002**

### GENERAL COMMENTS:

1. Comment Response - Response acceptable.
2. Comment Response - Response acceptable.

### SPECIFIC COMMENTS:

3. Comment Response - This response states that there is no obvious migration of contamination at the site. How does this statement correlate to the most recent groundwater sampling data discussed in team meetings showing that the contaminant plume has moved?
4. Comment Response - This response references EPA SSL Guidance, which recommends a DAF of 20. Given the site-specific information provided in Appendix E, page E-11, the DAF at Site/SWMU 45 is approximately equal to 1 (see attached calculations). Please revise the document accordingly.
5. Comment Response - This response states that metals, pesticides, and PCBs were not present at the site and therefore were not evaluated. Could the volatile organic compounds released at the site have potentially mobilized metals in the soils? If this scenario is possible, it is recommended that metals be included in the evaluation.
6. Comment Response - Response acceptable.
7. Comment Response - Please see the discussion for comment number 4 and the attached DAF calculations.

**Site-specific Dilution Attenuation Factor (DAF) Calculation at  
MCRD Parris Island Site/SWMU 45**

$$DAF = 1 + \frac{Kid}{IL}$$

where:

K = hydraulic conductivity

i = hydraulic gradient

I = infiltration rate

L = source length

$$d = \sqrt{0.0112L^2 + d_a} \left( 1 - \exp \frac{-LI}{Kid_a} \right)$$

$d_a$  = aquifer thickness

Using the information provided in RI/RFI for Site/SWMU 45 at MCRD, Appendix E, page E-11:

Hydraulic conductivity = 0.0054 cm/sec (= 4.7 m/yr)

Hydraulic gradient = 0.0026

Average surficial aquifer thickness = 15 ft (= 4.6 m)

Source length = 45 ft (= 13.7 m)

And assuming 75% of total precipitation goes to evapotranspiration and the remaining 25% of total precipitation goes to infiltration, and using the normal precipitation amount for Beaufort of 51.4 inches per year, the estimated infiltration rate would be:

Infiltration rate = 12.85 in/yr (= 0.326 m/yr)

Then, the site-specific DAF at SWMU 45 is calculated as follows:

$$d = \sqrt{0.0112(13.7)^2 + 4.6} \left( 1 - \exp \frac{(-13.7)(0.326)}{(4.7)(0.0026)(4.6)} \right) = 6.05$$

$$DAF = 1 + \frac{(4.7)(0.0026)(6.05)}{(0.326)(13.7)} = 1.02$$