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October 9, 1996

Commanding Officer
Attn: Mark Taylor/1861MT
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Subject: CTO-094; NSA Memphis RCRA Facility Investigation, Millington, Tennessee

Document Transmittal - RCRA Facility Investigation Report, Assembly B RFI Report; SWMUs 4, 6, 10, 31, 38, and 40; Revision: 01; October 8, 1996

Reference: Contract N62467-89-D-0318 (CLEAN II)

Dear Sir:

Please find enclosed one copy of the NSA Memphis RCRA Facility Investigation Report, Assembly B; SWMU 4, 6, 10, 31, 38, and 40. As requested, copies have been distributed to the NSA Memphis BRAC Cleanup Team, as shown on the attached NSA Memphis RFI Distribution List.

Also included are green "final" cover and spine inserts, as well as a written Response to Comments. Upon approval from the BCT, these covers should replace the white "draft" cover and spine.

If you have any questions or comments of a technical nature, please contact me or Lawson Anderson at 901/372-7962. Comments or questions of a contractual nature should be directed to Debra Blagg at 901/386-9344.

Sincerely,

EnSafe/Allen & Hoshall

By: Robert Smith, CHMM
Site Manager

Enclosures: As Stated

cc: Contracts File: CTO-0094 (w/out enclosure)
Project File: 0094-22111 (w/out enclosure)
SOUTHDIV: Ms. Kim Reavis/Code 0233KR (w/out enclosure)
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Other: See attached NSA Memphis RFI Distribution List

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RESPONSE TO COMMENTS

**ASSEMBLY B
SWMU 4, 6, 10, 31, AND 38
NORTHSIDE INDUSTRIAL DRAINAGE DITCHES
AND
SWMU 40 — SALVAGE YARD NO. 1
NAVAL SUPPORT ACTIVITY MEMPHIS
MILLINGTON, TENNESSEE**

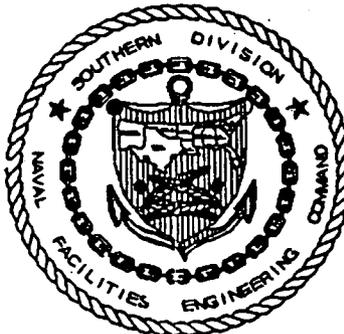


Revision 1

**CTO-094
Contract No. N62467-89-D-0318**

Prepared for:

**Department of the Navy
Southern Division
Naval Facilities Engineering Command
North Charleston, South Carolina**



Prepared by:

**EnSafe/Allen & Hoshall
5720 Summer Trees Drive, Suite 8
Memphis, Tennessee 38134
(901) 383-9115**

October 7, 1996

Response to Comments
NSA Memphis, RFI Report, Assembly B

Written comments from USEPA on the Ecological Risk Assessment, RCRA Facility Investigation — Assembly B, Northside Industrial Drainage Ditches, NSA Memphis, Millington, Tennessee.

General Comments to the RPM

This ERA focused on the potential impacts to terrestrial and aquatic ecological receptors from exposure to contaminated soil and sediments in the Assembly B area drainage ditch system. The drainage ditch system provides little, if any, permanent aquatic habitat, thus there is no opportunity for exposure to aquatic ecological receptors within base boundaries. The drainage system discharges off-base to North Fork Creek, which does contain viable aquatic habitat. Sediment contamination levels in North Fork Creek below the confluence of the drainage ditch system exceed reference and ecological sediment screening values for most constituents. Some of the contamination may be attributable to runoff from roads and railroads which cross the creek.

This ERA provides an adequate assessment of on-base potential ecological risks associated with the drainage ditch system, however, further evaluation of off-base (North Fork Creek) potential ecological risks should be conducted. (Additional sediment sampling [including background/reference samples] should be conducted in North Fork Creek to determine the source of sediment contamination and potential ecological impact of the contamination.)

Response: *Two additional sediment samples (NFC-1 and NFC-2) were collected in North Fork Creek (see Technical Memorandum included as Appendix D). These samples were collected about 600 feet downgradient from where sample 38-8 was collected.*

Sediment sample 38-7 is considered the background/reference sample for the samples collected in and near North Fork Creek. This sample was collected

upgradient of where the drainage ditch from NSA Memphis flows into North Fork Creek and was collected at the waterline on the bank opposite of Navy property. None of the constituents detected in sample 38-7 exceeded the risk-based RBCs or USEPA Region IV Sediment Screening Values. A review of the analytical data from the downstream sediment sample is included in Section 8.3.6 (page 8-27) of this RFI report.

Specific Comments to Preparer of Ecological Risk Assessment

1. **Page 8-1, Section 8.1** — In addition to the references cited, include *Supplemental Guidance to RAGS: Region 4 Bulletins — Ecological Risk Assessment*. Attached is a copy of the Bulletins for your information.

Response: *This has been added to the text in Section 8.1 and to Section 11 - reference section.*

2. **Page 8-1, Section 8.1.1, second paragraph** — Please provide documentation of the qualitative habitat and biota evaluation(s) which were performed during the course of this evaluation and indicate in Figure 8-1 the location of any viable habitats for ecological receptors. In addition, provide information on Federal and State endangered, threatened or special concern species which could or do occur on the site or in North Fork Creek down stream of the base. Be sure to include references for the source(s) of information on the occurrence of endangered, threatened or special concern species.

Response: *Documentation of the qualitative habitat and biota evaluation has been typed from the original field notes and is included as Appendix D of this report. Also, documentation from TDEC on threatened and endangered species occurrences was obtained and is included as Appendix E of this report. Comments from these two appendices are included in Section 8.1.1.*

3. Page 8-3, Section 8.1.2 — Please provide the location of the station for the Reference Concentration sampling referred to in this Section and identify the station on Figure 8-1.

Response: *The text in Section 8.1.2 now includes the location of the reference station and it is identified on Figure 8-1. Also, the location of the reference station for North Fork Creek has been included in the text and on Figure 8-1.*

4. Page 8-3, Section 8.1.2, last two sentences — Include this information in Section 8.7, Uncertainty Analysis, rather than in Section 8.1.2.

Response: *The last two sentences of text has been moved from Section 8.1.2 to Section 8.7.*

5. Table 8-1 — Please identify what MCPA stands for under Pesticides/Herbicides/PCBs in this table.

Response: *MCPA has been identified in Table 8-1.*

Written comments from USEPA on the Revised Draft Finding of Suitability to Lease for the North Fork Creek Parcel at NSA Memphis and the Risk Assessment for SWMU 38

SWMU 38 is not problematic and can be transferred; however there were many procedural errors with the risk assessment. The risk assessment and the following comments on this document should be attached to the FOSL:

1. Page 6-1, background sampling. Only a single sample was obtained for use as background. In this one sample, arsenic was present at high levels, 83 mg/kg. In addition, throughout the document, this single sample was referred to as the mean of the

background sample analyses. This is both wrong and misleading. Assume the highest was used between the two.

Response: *This change has been made throughout the text.*

- 2. Page 7-2, Guidance.** USEPA Region 4 issued the two *Supplemental Guidance to RAGS: Region 4 Bulletins* in November 1995. Earlier more limited guidance documents were published under the same name. The EnSafe Raleigh office has the most recent Region 4 guidance.

Response: *The references were changed as requested; however, the most recent risk assessment guidance was used for the SWMU 38 risk assessment, which was submitted in November, 1995. USEPA Region 4's recommended methods were used although the guidance was not yet available, as is evident from USEPA's request to update the references without making changes in the risk assessment approach. The suggestion that outdated guidance was used in preparation of the document does not accurately reflect the chronology of events (i.e., the report was originally submitted before the guidance was officially available, but an advance copy of the guidance was used).*

- 3. Page 7-10, Acronyms.** Because this document will be part of the public record, the acronyms such as "COPCs" and "COCs" should be defined the first time they are used.

Response: *Acronyms were defined the first time they were used. COPC was defined on page 7-2, and COC was defined on page 7-3.*

- 4. Page 7-11.** It says "CPSSs with maximum detected concentrations exceeding their corresponding concentrations, goals, levels and/or standards were retained ...

Are not these “concentrations, goals, levels and/or standards” the Region 3 RBCs? The text should be specific.

Response: *The text was changed to read, “CPSSs with maximum detected concentrations exceeding their RBCs will be retained for reference screening and/or further evaluation.” The following statement was also incorporated, “In accordance with November 1995 USEPA Region 4 Supplemental Guidance to RAGS Bulletin 1, surface soil RBCs were used for sediment screening comparisons.”*

5. Page 7-16 and elsewhere, Background screen for organic chemicals. It is inappropriate to screen organics against background. In this regard, MCPA should be included in the risk assessment.

Response: *MCPA was not included in the risk assessment and was not included in the revision. The current residential soil RBC is 39 mg/kg (USEPA Region 3 1996 RBC Table), and the maximum concentration reported in SWMU 38 sediment was 5.3 mg/kg. Adjusting from a hazard quotient of 1.0 to 0.1, the adjusted RBC would be 3.9 mg/kg, indicating the hazard quotient of MCPA would be above 0.1 but below 1.0. The resulting cumulative hazard index would not exceed 1.0.*

6. Page 7-28. The text indicates that a sample was collected, analyzed and the results discarded “because the sample was collected from a parking lot surface and sediment in the sewer was not accessible”. The decision that this was an inappropriate sampling location should have been made before the expense of analysis was undertaken.

Response: *This location, although not directly in the ditches and not used in the human health risk assessment, was chosen to determine whether any impacts to the*

drainage ditches could have come from any of the SWMUs upgradient of sample 31-1.

7. **Table 7-18.** Why is the MCL included in this table? It seems gratuitous and should be removed.

Response: *The MCLs were removed from Table 7-18.*

8. **Page 7-47 and on, Toxicity Profiles.** The appropriate references for RfDs and slope factors are IRIS, HEAST, NCEA, etc. Articles by Klassen and Driesbach are not the appropriate references.

Response: *IRIS, HEAST, and NCEA (formerly ECAO) were used to obtain reference doses and slope factors, as referenced in the introductory paragraph on page 7-47. Klaassen and Driesbach are additional references for the toxic effects described in the profiles and were clarified in the revised text.*

Additional comments were obtained at the February 1996 BCT meeting from TDEC and they were addressed as follows.

Comment: In the SWMUs 4, 6, 10, 31, and 38 report, what was the rationale for selection of the sample locations and how do the SWMU 4 sample locations compare to the sample locations and results of the 1993 investigation?

Response: *Section 4.2, page 4-2, the text was changed to include that sample locations were selected upstream and downstream of potentially impacted areas to determine if contamination was present. In addition, the two samples (locations 4-1 and 4-2) collected from the drainage ditch (SWMU 4) adjacent to SWMU 5 provided data*

for comparison to 1993 investigation results, which indicated TPH concentrations up to 660 mg/kg.

Also, in Section 6.2, page 6-22, the text was changed to include that sample locations 4-1 and 4-2, which were selected to provide an assessment of current upstream and downstream conditions and to followup on the TPH concentrations found in the 1993 investigation, exhibited low concentrations (11 to 41 mg/kg) of TPH-DRO and nondetectable concentrations for TPH-GRO and TPH using Method 418.1.

Additional verbal comments were obtained from USEPA at a BCT meeting and addressed the PRE performed for SWMU 40.

Comment: On page 7-3, Section 7.0, delete "...no further action is recommended..."

Response: *This statement has been removed from this section of text.*

Comment: On page 7-7, Section 7.0, under conclusions and recommendations, explain how background calculations were performed and where the background samples were collected.

Response: *The text on page 7-7 has been changed to include reference to E/A&H's Technical Memorandum dated September 18, 1996, Assemblies A through D Background Reference Concentrations. This Tech Memo explains background calculations and locations.*