



DEPARTMENT OF THE NAVY

NAVY ENVIRONMENTAL HEALTH CENTER
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NORFOLK, VIRGINIA 23513-2617

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From: Commanding Officer, Navy Environmental Health Center
To: Commanding Officer, Atlantic Division, Naval Facilities
Engineering Command, ATTN: David Forsythe, 1510 Gilbert
Street, Norfolk, VA 23511-2699

Subj: MEDICAL REVIEW OF INSTALLATION RESTORATION PROGRAM
DOCUMENTS FOR NORFOLK NAVAL BASE, NORFOLK, VA

Ref: (a) CH2M Hill transmittal ltr of 10 Oct 96

Encl: (1) Medical Review of "Human Health and Ecological
Risk Assessment Assumptions for the Remedial
Investigation and Feasibility Study Pesticide Disposal
Site (Site 5), Norfolk Naval Base, Norfolk, Virginia"
(2) Medical/Health Comments Survey

1. Per reference (a), we have completed a medical review of the "Human Health and Ecological Risk Assessment Assumptions for the Remedial Investigation and Feasibility Study Pesticide Disposal Site (Site 5), Norfolk Naval Base, Norfolk, Virginia." Our comments are included for your information as enclosure (1).

2. Please complete and return enclosure (2). Your comments are needed to continually improve our services to you.

3. The point of contact for this review is Ms. Wendy Bridges or Mr. David McConaughy, Health Risk Assessment Department. If you would like to discuss this medical review or if you desire further technical assistance, please call (757) 363-5552 or 363-5557. The DSN prefix is 864.

W. E. Luttrell
W. E. LUTTRELL
By direction

**MEDICAL REVIEW OF DRAFT
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT
ASSUMPTIONS FOR THE REMEDIAL INVESTIGATION/FEASIBILITY
STUDY PESTICIDE DISPOSAL SITE (SITE 5), NORFOLK NAVAL BASE,
NORFOLK, VIRGINIA**

- Ref: (a) Phone conversation with Ms. Katharine Kurtz, NEHC/Mr. David Forsythe,
LANTDIV, of 5 Nov 96
(b) Risk Assessment Guidance for Superfund, Volume I, Part A: Human Health
Evaluation Manual, December 1989 (EPA 540/1-89/002)

General Comments:

1. The draft document entitled "Human Health and Ecological Risk Assessment Assumptions for the Remedial Investigation and Feasibility Study Pesticide Disposal Site (Site 5), Norfolk Naval Base, Norfolk, Virginia," was provided to the Navy Environmental Health Center (NAENVIRHLHCEN) for review on 15 October 1996. The report was prepared for Naval Facilities Engineering Command, Atlantic Division by CH2M HILL.
2. Although we reviewed the entire document, per reference (a), our comments address only the human health risk assessment (HHRA) issues.
3. The HHRA in this report is based on very conservative exposure assumptions for this fenced in site. The exposure factors that are currently listed represent a worst case reasonable maximum exposure (RME). We feel that an average risk estimate should also be calculated for a more realistic estimate of exposure at Site 5.

Review Comments and Recommendations:

1. Page 1, "Site Description"

Comment: The text states that the "site is currently used for storage of other materials." There is no other discussion provided about the specific materials which are currently stored at Site 5.

Recommendation: Discuss the materials that are currently stored at this site.

2. Page 1, "Site Description"
Page 2, "Soil Sampling"

Comment: The text on page 1 states that "storm water runoff flows from the northwest across the site and into a storm water sewer system." Sampling should be performed in and

around the storm water runoff drainage pathway. There is no mention of soil samples taken in the storm water runoff drainage pathway.

Recommendation: Discuss any sampling of the storm water runoff drainage pathway or provide justification for its exclusion.

3. Page 2, “Monitoring Well Installation and Sampling”

Comments:

a. The text states that “the volatile fraction of the organic sample were analyzed by the EPA Contract Laboratory Program (CLP) Statement of Work (SOW) for Low Concentration Water (OLC02).” A copy of the specific SOW mentioned in this Human Health and Ecological Risk Assessment Assumptions for the Remedial Investigation and Feasibility Study was not included with the document we reviewed.

b. The text does not say whether groundwater samples taken were unfiltered, filtered, or both. We strongly recommend the collection of both filtered and unfiltered groundwater samples for assessing human health risks. EPA guidance, such as reference (a), states that “unfiltered groundwater data should be used to estimate exposure concentrations.”

Recommendations:

a. Include a copy of the specifically mentioned SOW in the final RI/FS.

b. We recommend collecting both unfiltered and filtered groundwater samples. State in the final remedial investigation/feasibility study (RI/FS) whether filtered and/or unfiltered groundwater samples were taken and specifically how the groundwater sampling results, filtered or unfiltered, were used in the risk assessment.

4. Page 2, “Soil Sampling”

Comment: There is no discussion in the text of any background soil samples taken at or near by Site 5. Reference (a) states that “background sampling is conducted to distinguish site-related contamination from naturally occurring or other non-site-related levels of chemicals and should be collected from each medium of concern.” A sufficient number of samples should be collected in order to statistically calculate the risk of background so that it can be compared to the onsite risk.

Recommendation: Provide information on background samples and locations. Include background sampling locations on a site map. Discuss the adequacy of background sample site selection on the basis of uniform site characteristics (e.g., geological, hydrogeological, analytical results).

5. Page 2, "RI Baseline Human Health Risk Assessment"

Table 1, "Pesticide Disposal Site (Site 5), Norfolk, Naval Base, Summary of Exposure Pathways and Potentially Exposed Populations"

Table 2, "Exposure Assumptions, Norfolk Naval Base, Pesticide Disposal Site, Site 5"

Comments:

a. The text does not discuss the current employee population at or near Site 5. Provide details about possible populations that may come in contact with Site 5, such as, base civilian and military personnel or trespassers. We realize that Table 1 and 2 list all possible exposure pathways and exposed populations. However, the text does not discuss the most representative exposed populations and routes of exposure for this specific site.

b. Table 1 and 2 list adult and child trespassers as potentially exposed populations. The text on page 1 states that Site 5 is "currently fenced off." Discuss the validity of trespassers on a fenced in site.

c. The text states that the "groundwater beneath the site and areas surrounding the site is not currently used as a potable water supply and groundwater in the aquifer beneath the site is classified as non-potable." The chances the groundwater in the aquifer will be used as potable water even if this site became residential would be slim. Table 1 and 2 evaluate a residential groundwater pathway. It is fine to evaluate the groundwater for very conservative estimates at this site. It should be kept as only a worst case future scenario for this site.

d. Table 2 lists the current residential exposure duration for children and adults as 6 and 24 years respectively. We feel that this is overly conservative because the average residential stay on base is 3 to 6 years.

Recommendations:

a. In the final RI/FS, consideration should be given to evaluating the potential risk to current military and/or civilian personnel who may be exposed to site-related contamination during performance of their job-related duties. Discuss future land use and any nearby recreational activities.

b. The trespasser pathway should be eliminated as a potentially exposed population, or strong justification should be provided for inclusion of this pathway.

c. If groundwater is evaluated at this site, it should be kept in mind that this is the worst case scenario, since water at this site is non-potable and most likely not a real life case.

d. Calculate exposure risk using 6 years as the exposure duration for residents.

6. Figure 2, “Soil and Groundwater Sampling Locations Site 5 - Pesticide Disposal Area”

Comment: The flow of groundwater is not indicated on the Site 5 map. The ability to estimate future exposure concentrations can depend on the flow of groundwater transporting possible contaminants.

Recommendation: Indicate the flow of groundwater in future RI/FS documents for this site.

FROM: _____
 (YOUR NAME/COMMAND)
 TO: NAVENVIRHLTHCEN, ENVIRONMENTAL PROGRAMS
 FAX: COM: (757) 444-7261/DSN: 564-7261

MEDICAL/HEALTH COMMENTS - YOUR VIEW

Please help us improve our review process by indicating the extent to which you agree or disagree with the comments we provided your activity.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. "Value added" to IR/BRAC process?	1	2	3	4	5
2. Received in a timely manner?	1	2	3	4	5
3. High level of technical expertise?	1	2	3	4	5
4. Very useful to the RPM?	1	2	3	4	5
5. Contractor incorporated comments?	1	2	3	4	5
6. Easily readable/useful format?	1	2	3	4	5
7. Overall review was of high quality?	1	2	3	4	5
8. NAVENVIRHLTHCEN was easily accessible?	1	2	3	4	5
9. NAVENVIRHLTHCEN input during scoping or workplan development would be "value added"?	1	2	3	4	5
10. Added involvement in IR/BRAC document needed?	1	2	3	4	5

Please return by fax using the box provided at the top of this page. If you have any other comments, please list them below or call Mr. David McConaughy, Head, Health/Risk Assessment Department, at (757) 363-5557, DSN prefix 864, at any time to discuss your viewpoint. As our customer, your comments and suggestions of how we can improve our services to you are important!