



05.01- 11/12/96-007134 40 1011
12/19 @ GIS mtg

DEPARTMENT OF THE NAVY

NAVY ENVIRONMENTAL HEALTH CENTER
2510 WALMER AVENUE
NORFOLK, VIRGINIA 23513-2617

5090.5

Ser EP/KK:4167/ 08502

12 NOV 1996

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

Subj: 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 "Draft Human Health and Ecological
Risk Assessment Assumptions for Remedial
Investigation/Feasibility Study NM Slag Pile (Site 2)"
(2) Medical/Health Comments Survey

1. Per reference (a), we have completed a medical review of the
"Draft Human Health and Ecological Risk Assessment Assumptions
for Remedial Investigation/Feasibility Study NM Slag Pile (Site
2)" and it is forwarded to you as enclosure (1).

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

3. We are available to discuss the enclosed information by
telephone with you and, if necessary, with you and your
contractor. If you require additional assistance, please call
Ms. Katharine M. Kurtz or Mr. David F. McConaughy at (757) 363-
5553 or (757) 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 REMEDIAL INVESTIGATION/FEASIBILITY STUDY
NM SLAG PILE (SITE 2) NORFOLK NAVAL BASE, NORFOLK, VA**

- Ref: (a) Phone conversation with Mr. Dave Forsythe, LANTDIV, of 5 Nov 96
(b) Risk Assessment Guidance for Superfund, Vol. 1, Part A: Human Health Evaluation Manual, December 1989 (EPA/540/1-89/002)
(c) Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program, June 1988 (NEESA 20.2-047B)

General Comments:

1. The draft document entitled "Draft Human Health and Ecological Risk Assessment Assumptions for Remedial Investigation/Feasibility Study NM Slag Pile (Site 2)" was provided to the Navy Environmental Health Center for review on 15 October 1996. The report was prepared for the Naval Facilities Engineering Command, Atlantic Division, by CH2M HILL under Contract Task Order 008.

2. Although we reviewed the entire document, per reference (a), our comments address only the human health risk assessment (HHRA) issues. In general, we feel that the HHRA in this report is based on very conservative exposure assumptions for this partially paved military base site. The exposure factors that currently are listed represent worst case exposure assumptions that will produce a highly conservative risk estimate. We are available to review work plans, sampling and analysis plans, health and safety plans (HASPs), baseline HHRA documents, etc. Our specific comments and recommendations are provided below.

Review Comments and Recommendations:

1. Page 1, "Site Description"

Comment: The text states that storm water runoff from the site flows into drainage ditches. These ditches eventually empty into Mason Creek. The report does not contain a description of these ditches or specify the condition of the surface waters.

Recommendation: Provide a description of the drainage ditches in the HHRA and include additional information concerning the condition of the surrounding surface waters.

2. Page 1, "Remedial Investigation Data Collection"

Comment: The text does not discuss any background samples taken at or nearby Site 2. Reference (b) 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.” Background sampling locations were not indicated on the site map depicting sampling locations presented in Figure 2.

Recommendation: Provide information on any background samples and indicate sampling locations on a site map. Discuss how the background concentrations will be used in the HHRA.

3. Page 1, “Monitoring Well Installation and Sampling”

Comments:

a. Although monitoring well sampling and groundwater analysis were mentioned in the report, the text does not indicate whether data from both filtered and unfiltered groundwater samples will be obtained. Reference (b) states that “unfiltered groundwater data should be used to estimate exposure concentrations.”

b. We endorse using both filtered and unfiltered types of samples in the risk assessment. Although the regional United States Environmental Protection Agency (USEPA) guidance requires use of unfiltered sample results in the quantitative baseline HHRA, if risk estimates for both filtered and unfiltered samples are developed, both values can be discussed. Because some heavy metals absorb strongly to soil/sediment particles, the difference between the resultant risk estimates from filtered and unfiltered sampling results can be large. Providing comparison values can therefore be very useful in demonstrating that the risk estimates from unfiltered groundwater samples are too conservative.

Recommendation: Develop risk estimates for both filtered and unfiltered groundwater samples, and discuss both values in the baseline HHRA.

4. Pages 2 - 4, “RI Baseline Human Health Risk Assessment”

Comments:

a. Potential exposure scenario information presented in the report appears confusing and contradictory. Page 2 of the text states that “The future use of the site is expected to remain industrial...a future industrial groundwater-use scenario will be evaluated for information and decision-making.” This information does not correlate with the summary of exposure pathways and potentially exposed populations listed in Table 1.

b. Exposure parameters for the residential groundwater exposure scenario are given in Table 1. Because the shallow groundwater condition is currently reported to be non-potable and the future use of this site is anticipated to continue to be military, we question the need for a residential future groundwater use scenario. We feel that use of these exposure assumptions will derive an overly conservative risk estimate for this site. Also, we feel that use of the trespasser

exposure parameters given in Table 1 of the report in the HHRA calculations will result in an overly conservative risk estimate.

c. In addition, information concerning whether recreational activities are conducted in surface water bodies possibly influenced by the site would be helpful in determining potential affect on human exposure.

d. The report does not discuss current employee populations at or near this site and their potential for exposure to site-related contaminants..

e. Although the report states that future residential development of Site 2 is unlikely, it does not describe any specific restrictions that would be put in place to prevent future residential development of the area should the land be transferred to non-Department of Defense ownership.

Recommendations:

a. Clarify the potential exposure scenarios in the text and include in the baseline HHRA a “Conceptual Site Model” per reference (b) to depict both current and future potential exposure scenarios. Correct the apparent discrepancies between the text and table.

b. Either use more realistic exposure assumptions for this site or further justify the use of the future residential groundwater scenario. Consider using no more than 9 years for the current trespasser youth exposure duration parameter because this site is in a military complex.

c. Discuss recreational activities that may provide the potential for risk to nearby populations, to include fishing and/or shellfish harvesting activities, or justify their exclusion.

d. Characterize the activities and activity patterns of potentially exposed employee populations in the final Remedial Investigation/Feasibility Study (RI/FS) report, as applicable.

e. Provide additional information outlining the actions required to prevent this site from being used for future residential purposes.

5. Page 2, “Soil Sampling”

Comment: The text states that composite subsurface soil samples were collected from three soil boring locations. The text does not provide an explanation for taking this type of sample.

Recommendation: The statement concerning composite surface soil samples is unclear and additional information should be supplied in the text for taking this type of sample.

6. Page 3, "RI Baseline Human Health Risk Assessment"

Comments:

a. The text states that "The 95 percent upper confidence limit of the mean (95UCL) will be used as the exposure concentration for soil, sediment, and surface water...If the 95UCL is greater than the maximum detected concentration, the maximum detected concentration will be used as the exposure concentration."

b. A USEPA Deputy Administrator memorandum dated 26 February 1992 ("Guidance on Risk Characterization for Risk Managers and Risk Assessors") and a USEPA publication dated May 1992 ("Supplemental Guidance to RAGS: Calculating the Concentration Term") indicates that a single number used to represent the health risk to an individual or population may hamper the risk manager's ability to make an informed risk decision. Although the guidance discusses the concept at length, the bottom line is that risk estimates for both the upper bound (reasonable maximum exposure (RME)) and average case should be presented. We fully endorse USEPA's guidance for calculating quantitative risk estimates for the average as well as the RME case.

Recommendation: Future remedial investigations should provide quantitative risk estimates for the average as well as the RME case.

7. Figure 2, "Soil, Surface Water, Sediment, and Groundwater Sampling Locations"

Comment: The flow of groundwater is not indicated on the Site 2 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:	NAENVIRHLTHCEN, 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. NAENVIRHLTHCEN was easily accessible?	1	2	3	4	5
9. NAENVIRHLTHCEN 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 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!