03.01-07/17/95-00486

(804) 322-4778

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17 JUL 1995

U.S Environmental Protection Agency
Region III
Attn: Mr. Robert Thomson (Mail Code 3HW71)
Remedial Project Manager
841 Chestnut Street
Philadelphia, Pennsylvania 19107

Re: Contract N62470-89-D-4814, Contract Task Order (CTO) 0252
Comment Responses for the Draft Summary of Background Constituent Concentrations and Characterization of the Biotic Community from the York River Drainage Basin, Naval Weapons Station Yorktown, Yorktown, Virginia

Dear Mr. Thomson:

The Navy is pleased to provide a copy of the responses to comments on the subject report for your review and comment. Because comments on the Background Report by USEPA Region III and the Commonwealth of Virginia can be addressed by these comment responses, a Final Background Report will be submitted in lieu of a Draft Final submittal on August 1, 1995

If you have any questions concerning these responses to your comments on the Final Background Report, please contact Mrs. Brenda R. Norton, P.E. as soon as possible at (804) 322-4778.

Sincerely,

Nina M. Johnson, P.E.
Head
Installation Restoration
Section (South)
Environmental Programs Branch
Environmental Quality Division
By direction of the Commander

Enclosure

Copy to: (w/encl)
Mr. Steve Mihalko, VDEQ
Mr. Jeff Harlow, WPNSTA Yorktown, Code 09E

Blind copy to: (w/encl)
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Response to Comments Submitted by USEPA Region III
On the Draft Background Report
Naval Weapons Station Yorktown
Yorktown, Virginia
EPA Comment Letter dated June 7, 1995

General Comments

1) The Navy acknowledges this comment and appreciates the positive feedback on the report.

2) Seasonal migration and emergence were considered in the sampling program conducted for Site 16/SSA 16 and Background. During future site-specific investigations, fish and benthic sampling will be conducted during the same season (summer) that background locations were sampled. Additionally, background biota samples will be stratified by habitat type and physical parameters as part of the site-specific ecological risk assessment process.

3) In general, concentrations of inorganic constituents detected in distinct soil associations do not appear to differ significantly. However, a statistical evaluation of significant differences was not conducted for the different soil associations. The comparison will be included as part of the Site 16/SSA 16 RI report in addition to consideration of aluminum and iron concentrations as normalizing factors. The physical parameters grain-size and TOC were not analyzed for soils as part of the Background study.

4) Agreed. An inherent limitation in producing a statistical background study is the number of samples necessary to adequately characterize concentrations of all inorganic constituents in complex environmental media. For example, selecting an inorganic such as beryllium which has higher relative variability results in the need for hundreds of samples to achieve a power of 80 percent and alpha of 0.05 (95 percent confidence). Furthermore, samples having non-detect values complicate the data and may decrease the standard deviation of the data set and affect the total number of samples necessary for an adequate characterization of background.

Because of these limitations, aluminum was selected for the evaluation of the number of samples necessary to attain a power of 80 percent and a confidence of 95 percent. Aluminum had relatively low variability and was detected in every sample from the existing data base. Aluminum also provided a feasible number of background samples for analysis, validation, reduction and reporting purposes.

A statistical analysis for each soil association was not required by the Final Approved Work Plans for the Background Study dated June 23, 1994. The forty overall number of samples were apportioned among the soil associations based on their size. For this reason, a statistical comparison between associations or associations and all background results was not attempted.

5) All background monitoring wells were adequately developed. Turbidity in certain background monitoring wells is likely due to migration of clay particles from the formation, through the sand pack and into the well.

6) The sampling period was selected to optimize characterization of both the benthic and fish community. It is acknowledged that benthic sampling would be optional in the spring; however, this would have entailed two sampling events.

In addition, background biota collected in the summer allows for comparison with the Chesapeake Bay Restoration Goals Index (RGI). The RGI was developed from data collected during the summer months. Subsequent biotic characterization work performed on WPNSTA Yorktown streams and ponds will be accomplished during the same season (summer) as the background study and under similar physical conditions.

7) Groundwater and surface water are mobile, therefore, statistical analyses were not conducted for these media. A statistical analysis for both media will be included in the Final Report.

8) Agreed. Text will be strengthened in the Final Background Report to support this comment.

9) A W-test will be used in addition to the Quantile - Quantile Plot. Other software that may provide information on the data distribution such as Riskview Pro® may also be utilized. This section will be expanded in the Final Report.

10) This information has been provided in "Final Work Plan for Sites 6, 7, 12, 16, Site Screening Area 16 and Background for Naval Weapons Station Yorktown, Yorktown, Virginia" dated June 23, 1994. This information will also be provided in the Final Background Report.

11) The units will be added to the tables in Section 5.

12) Comment acknowledged. Region III toxicologists will be consulted about the use of Toluene Limits in the comparison of background UCL values to site specific constituent concentrations.

Specific Comments

1) Baker has contacted Mr. Dave Shield (Natural Resources Specialist - WPNSTA Yorktown) regarding this comment. The nest was rebuilt in late 1994 to early 1995, approximately 750 feet from the previous location. The nest is currently active. Section 2.8.4 of the text will be updated to reflect this.

2) Sources of arsenic at the Station are unknown. Arsenicals are not known to be used in any historical or current munitions loading practice. Also, the use of arsenical pesticides is not documented. although historical use of arsenicals for agricultural purposes is a possibility. Arsenic is likely associated with regional mineral content and appears to increase in concentration in samples obtained from clayey formations of the subsurface. Because of mechanical disturbances to surface features at the station, clays may be encountered at the surface particularly in areas where backfilling has occurred. A more detailed discussion of arsenic sources will be added to the Background Report.

3) Background locations were selected on the basis of environmental setting and proximity to the station. In addition, all background stations were reviewed and approved by USEPA Region III Biological Technical Assistance Group (BTAG). The fact that background levels of some constituents exceed certain criteria or guidelines will be considered during evaluation of data generated during subsequent site-specific investigations. These concentrations are characteristic of regional conditions and represent the relative background risk to ecological receptors.

4) Comment acknowledged. Please see response #3.

5) The manner in which the off-site pond background values will be used in risk assessments will be influenced by site specific factors. Ecological risk assessments conducted during subsequent site-specific investigations will be performed in accordance with BTAG guidance for that particular project which include use of the BTAG screening levels, as well as the noted criteria in the comment.

6) The fish species referred to as "fungulus" was a typographical error. The fundulus species was identified as a juvenile mummichog and will be recorded as such in the final document.

The background data will be used to select ecological contaminants of concern and to qualify the potential risks to ecological receptors at WPNSTA Yorktown.

7) Arsenic and manganese are discussed at length due to their potentially toxic nature and ubiquitous presence in environmental media at WPNSTA Yorktown. The underlying distribution of elements among the different soil types does not appear to be a normal distribution. Because of the limited numbers of soil samples associated with the 5 soil associations, an evaluation of underlying distributions in each association would be difficult. Statistical conclusions about soil associations cannot be made at this time.

8) Methylene Chloride and acetone are common laboratory contaminants. In addition to this, they are both quite volatile and are thus not expected to be found established in the environment, particularly in surface soils. A discussion of this and the blank data associated with these samples will be included in the report.

9) This will be summarized in Section 6.2.2.3.