

The Baker logo consists of the word "Baker" in white, bold, sans-serif font, centered within a solid blue rectangular background.**Baker Environmental, Inc.***A Unit of Michael Baker Corporation*

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May 19, 2005

U.S. Environmental Protection Agency
Region II
290 Broadway – 22nd Floor
New York, New York 10007-1866

Attn: Mr. Adolph Everett, P.E.
Chief, RCRA Programs Branch

Re: Contract N62470-95-D-6007
Navy CLEAN, District III
Contract Task Order (CTO) 0271
U.S. Naval Station Roosevelt Roads (NSRR), Puerto Rico
RCRA/HSWA Permit No. PR2170027203
Navy Responses to EPA Comments Dated March 30, 2005

Dear Mr. Everett:

Baker Environmental, Inc. (Baker), on behalf of the Navy, is providing you with the attached Navy Responses to EPA comments dated March 30, 2005 submitted by Mr. Timothy R. Gordon of your office. These comments addressed the Final Corrective Measures Implementation (CMI) Design Package for Soil Remediation at SWMU 53 dated September 20, 2004. The comment letter stated that the CMI Design Package for SWMU 53 has been acceptably revised to address EPA's comments, and is acceptable to undergo public notice and review as the proposed corrective measure for this SWMU. The March 30, 2005 comments also addressed the Draft Final Additional Data Collection Investigation Report and Screening Level Ecological Risk Assessment (Step 3a) for SWMU 45 dated September 22, 2004. The attached response to comments addresses these comments.

Upon agreement between the Navy and the EPA on the issues discussed in the attached response to comments for SWMU 45 the Navy will revise the Draft Final report in accordance with the agreements and submit it for review.

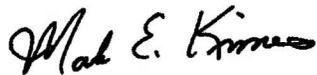
ChallengeUs.

Mr. Adolph Everett, P.E.
U.S. Environmental Protection Agency, Region II
May 19, 2005
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If you have questions regarding this submittal, please contact Mr. Kevin Cloe, P.E. at (757) 322-4736. Additional distribution has been made as indicated below.

Sincerely,

BAKER ENVIRONMENTAL, INC.



Mark E. Kimes, P.E.
Activity Manager

MEK/lp
Attachments

cc: Mr. Kevin R. Cloe, NAVFAC Atlantic - Code EV23KC (1 hard copy)
Ms. Bonnie P. Capito, NAVFAC Atlantic – Code EV32 (1 hard copy)
Ms. Rochelle Lee, NAVFAC Atlantic – Code OPCAQ5 (letter only)
Ms. Lee Anne Rapp, NAVFAC Atlantic – Code EV31LR (letter only)
Ms. Madeline Rivera, NAPR (1 hard copy)
Mr. Tim Gordon, US EPA Region II (1 hard copy)
Mr. Carl Soderberg, US EPA Caribbean Office (1 hard copy)
Mr. Manny Vargas, PR EQB (1 hard copy)
Ms. Kathy Rogovin, Booz Allen & Hamilton (1 hard copy)
Ms. Janna Staszak, CH2M Hill Virginia Beach (1 hard copy)

**NAVY RESPONSES TO
EPA COMMENTS DATED MARCH 30, 2005**

**Final Corrective Measures Implementation (CMI)
Design Package for Soil Remediation at SWMU 53
(Former Malaria Control Building)
September 20, 2004**

EPA General Comment

As part of our review, EPA requested our contractor, Booz Allen Hamilton, to review both documents. Based on Booz Allen's and our own reviews, EPA has found that the September 20, 2004 CMI Design Package for SWMU 53 has been acceptably revised to address EPA's comments, and is acceptable to undergo public notice and review as the proposed corrective measure for this SWMU.

Navy Response

Comment noted.

**Draft Final Additional Data Collection Investigation Report and
Screening Level Ecological Risk Assessment (Step 3A) for SWMU 45
(Spill areas outside of old power plant, including cooling water tunnels)
September 22, 2004**

EPA General Comment

However, while the September 22, 2004 Draft Final Additional Data Collection Investigation Report and Screening Level Ecological Risk Assessment (Step 3A) for SWMU 45 has been revised to acceptably address most of EPA's prior comments, certain sections still need to be revised and/or clarified to address the comments given in the enclosed Technical Review. Please note that, as briefly discussed with Mr. Felix Lopez of the U.S. Fish & Wildlife Service (FWS), and explained in the enclosed Technical Review, to better evaluate potential risks to the West Indian manatee, EPA recommends that the Navy develop a proposal to collect seagrass samples in areas of the bay potentially impacted by releases from SWMU 45, and analyze those seagrass samples for metals. Those results would then be incorporated into the revised Draft Final Additional Data Collection Investigation Report and Screening Level Ecological Risk Assessment (Step 3A) for SWMU 45.

Navy Response

The Navy disagrees that embayment sediment is potentially impacted by releases from SWMU 45 and offers the following points of clarification. Step 3a of the baseline ecological risk assessment (ERA) demonstrated that arsenic, cadmium, mercury, selenium, vanadium, and zinc concentrations in embayment sediment are not associated with a release from SWMU 45 (arsenic, cadmium, mercury, selenium, vanadium, and zinc represent those metals with maximum Hazard Quotient [HQ] values greater than 1.0 for the West Indian manatee). The following lines of evidence were used to support this conclusion:

- The preliminary conceptual model, which included a discussion of potential source areas, demonstrated that arsenic, cadmium, mercury, selenium, and zinc are not associated with historical activities at SWMU 45. Therefore, concentrations of these five metals in embayment sediment cannot be attributed to a release from SWMU 45.

- A geochemical evaluation of vanadium and zinc in embayment sediment and base wide background sediment suggest that the concentrations of these metals cannot be attributed to a release from SWMU 45 (see Section 4.7.1.3 [Page 4-46] and Figure 4-17 for zinc and Section 4.7.1.4.2 [Page 4-51] and Figure 4-18 for vanadium).
- Surface soil, subsurface soil, and groundwater data for SWMU 45 do not indicate that a release from SWMU 45 has occurred (these metals were either not detected in SWMU 45 surface soil, subsurface soil, and groundwater or they were detected at concentrations less than maximum background concentrations), further supporting the preliminary conceptual model.

In summary, based on the lines of evidence presented in Step 3a of the baseline ERA and summarized above, detected concentrations of arsenic, cadmium, mercury, selenium, vanadium, and zinc cannot be attributed to a release from SWMU 45. As there is no evidence of a release from SWMU 45 to embayment sediment, The Navy does not believe that additional evaluation (collection and analysis of sea grass for metals) is warranted.

EPA General Comment

Within 45 days of your receipt of this letter, please submit a proposal to collect seagrass samples in areas of the bay potentially impacted by releases from SWMU 45, and to analyze those seagrass samples for metals. Also, within 45 days of your receipt of this letter, please submit either a written response and/or an addendum to the September 22, 2004 Draft Final Report, addressing the other comments given in the enclosed Technical Review.

Navy Response

With regard to the need to submit a proposal to collect sea grass samples potentially impacted by releases from SWMU 45, the Navy disagrees with this comment. The Navy believes that the draft final ERA adequately demonstrated that metal concentrations in embayment sediment cannot be linked to a release at SWMU 45. Please see the response to the EPA General Comment above and the response to BAH Specific Comment No. 2 below.

**BAH TECHNICAL REVIEW OF THE SEPTEMBER 22, 2004,
DRAFT FINAL ADDITIONAL DATA COLLECTION REPORT,
SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT AND STEP 3A OF BASELINE
ECOLOGICAL RISK ASSESSMENT AT SWMU 45**

**NAVAL ACTIVITY PUERTO RICO
CEIBA, PUERTO RICO**

I GENERAL COMMENTS

1. *In general, the Draft Final Additional Data Collection Report (ADCR) and Screening Level Ecological Risk Assessment (SLERA) and Step 3A of Baseline Ecological Risk Assessment (BERA) at SWMU 45 has adequately addressed previous EPA comments. The conclusions drawn from the recalculated risks to the West Indian manatee; however, may not be appropriate. Some concerns also remain regarding the presentation of statistical background comparisons. These issues are discussed in more detail in the comments below.*

Navy Response

Please see the responses to BAH specific comments below.

2. *In general, the Navy's Guidance for Environmental Background Analysis (NFEC, 2002) and statistical analysis approach as presented in the flow chart shown in Fig 4-10a, is consistent with the statistical analysis process outlined in EPA's Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites (EPA 540-R-01-003, September 2002). Based on the statistical results presented in Tables 42-7, 4-30, and 4-33, the Navy's determination of significance and conclusions of site concentrations either being statistically equivalent to or elevated from the background concentrations are consistent with EPA guidance. However, the tables do not provide support or justification for the use of particular statistical tests. The Navy should include notations in all statistical tables that support the use of a particular test to demonstrate that the appropriate tests were conducted. Without such notations, it is not apparent how the results in the tables relate to the statistical analysis process shown in Fig 4-10a. The tables should be revised accordingly. See Specific Comments 5 through 8.*

Navy Response

The Navy agrees with this comment. Please see the response to BAH Specific Comment Nos. 5 through 8.

II SPECIFIC COMMENTS

Section 4.6.1.4.2 Aquatic Food Web Exposures, p. 4-28

1. *There are discrepancies between the results reported in this text section, and the results presented in Table 4-20. Specifically, this section indicates that four detected metals (arsenic, cobalt, mercury, and vanadium) had hazard quotient (HQ) values greater than or equal to 1.0 for one or more of the aquatic receptors. Based on Table 4-20, HQ values also exceeded 1.0 for cadmium, selenium, and zinc. NAPR should revise the text and/or table to correct the discrepancy.*

Navy Response

The Navy agrees with this comment. The text in Section 4.7.1.4.2 (first paragraph, second sentence) will be revised to correct this discrepancy.

Section 4.7.1.4.2 Aquatic Food Web Exposures, p. 4-28

- NAPR has not identified any potential risk drivers for aquatic food web exposures. While it is agreed that no further evaluation of risk to the belted kingfisher is necessary, it is not clear that no further evaluation is needed for the West Indian manatee. Maximum detected concentrations of arsenic, cadmium, mercury and selenium resulted in NOAEL based HQ values of 39, 6.2, 21 and 2.3, respectively. Concentrations of these metals in Puerca Bay sediments were also significantly greater than background concentrations. NAPR indicates on p. 4-52 that selenium and cadmium should not be further evaluated based on a lack of detections in upgradient media at SWMU 45 and because these chemicals are not associated with historical activities at Building 38. No rationale is presented for excluding arsenic and mercury from further evaluation, but it is inferred based on discussion presented on p. 4-45 that NAPR has excluded arsenic and mercury for reasons similar to those cited for cadmium and selenium. This rationale is not sufficient for excluding these chemicals from further evaluation. Whether or not the elevated concentrations of these chemicals originated specifically from SWMU 45 is inconsequential; the important issue is whether or not the elevated concentrations are facility related. Given that concentrations exceeded background concentrations, it must be assumed that the contamination is facility related, unless NAPR can prove otherwise.*

NAPR should present evidence that elevated concentrations are not facility related, or else arsenic, cadmium, mercury, and selenium must be carried forward into the baseline ecological risk assessment. It is emphasized that particular care must be taken in evaluating risks to the manatee because this species is known to frequent the Roosevelt Roads area, is listed as a federally endangered species, and is likely to draw public interest. It is recommended that NAPR collect seagrass samples for analysis of metals to further evaluate manatee risks in the baseline ERA.

Navy Response

The Navy disagrees with this comment and offers the following points of clarification. Navy policy on sediment site investigation and response actions (CNO, 2003) states that, “All sediment investigations and response actions must be directly linked to Navy CERCLA/RCRA contaminated releases. Directly linked means that the sediment contamination is scientifically connected to a NAVY IR/BRAC site.” Navy policy on sediment investigations also states that, “All investigations shall primarily be linked to a specific Navy CERCLA/RCRA site.” Step 3a of the baseline ERA for SWMU 45 demonstrated that arsenic, cadmium, mercury, selenium, vanadium, and zinc concentrations in embayment sediment are not linked to a release at SWMU 45. This was accomplished through an evaluation of multiple lines of evidence, including: (1) the preliminary conceptual model, which showed that arsenic, cadmium, mercury, selenium, and zinc are not associated with historical site activities at SWMU 45; (2) geochemical evaluations performed on the SWMU 45 sediment data and base wide background sediment data, which suggest that vanadium and zinc concentrations in embayment sediment are indicative of background levels, not a release; and (3) An evaluation of SWMU 45 surface soil, subsurface soil, and groundwater data, which showed that many of these metals were either not detected or detected at concentrations less than maximum background concentrations. Given that metal concentrations cannot be linked to SWMU 45 or any other SWMU within the drainage area of the embayment, Navy policy dictates no further investigation.

It is acknowledged that storm water outfalls discharge to the embayment (Outfall 015 and NR-020). The drainage area of each outfall, shown on Figure 4-6 of the draft final ERA, includes roadways, parking lots, and administrative, industrial, and storage areas. However, SWMU 45 is not located within the drainage area of either outfall. Furthermore, storm water discharges through Outfall 015 are regulated under the National Pollution Discharge Elimination System (NPDES) program, not the Navy ER and BRAC programs. Finally, there are no SWMUs located within the drainage area of the non-regulated storm water outfall (Outfall NR-020). While metals may be present in the Outfall NR-020 discharge, they cannot be linked to a specific Navy CERCLA/RCRA site.

In summary and in accordance with Navy policy, the Navy does not believe additional evaluation of the West Indian manatee is warranted. It should be noted that the Department of the Navy (NAVFAC Natural Resources), in conjunction with the United States Geological Survey (USGS) Biological Resources Division have been monitoring manatee populations and characterizing seagrass communities at Naval Activity Puerto Rico (NAPR). On going efforts will include radio-tagging and blood monitoring to provide information on population and health assessments. These past and current activities demonstrate the importance the Navy places on the West Indian manatee at NAPR.

Chief of Naval Operations (CNO). 2002. Policy on Sediment Site Investigation and Response Actions. Memorandum from Chief of Naval Operations to Commander, naval facilities Engineering Command. Ser.N453E/2U589601.

(http://web.ead.anl.gov/ecorisk/policy/pdf/Navy_IR_Sediment_Policy.pdf)

Section 4.7.2 Uncertainties Associated with the Refined Screening-Level Risk Characterization, p. 4-53

- 3. The uncertainty section does not include a discussion of the uncertainties associated with the statistical background comparison. This section should be revised to address the uncertainties associated with the use of the various statistical tests given the samples involved in the ERA.*

Navy Response

The Navy agrees with this comment. Section 4.7.2 will be revised to include a discussion of the uncertainties associated with the statistical tests and evaluations performed on the embayment and background datasets.

Table 4-20a

- 4. Table 4-20a, which should present risks to the West Indian manatee based on more conservative toxicity reference values, appears to have been inadvertently omitted from the document. This table should be added to the final version of this document.*

Navy Response

Table 4-20a was inadvertently omitted from the electronic copy of the draft final ERA report submitted to the EPA. The revised document CDs will include the omitted table. A copy of the table also is attached to this response to comments.

Tables 4-27, 4-30, and 4-33

5. *Student's t-test was used for chromium (Table 4-27) and total recoverable copper (Table 4-30) concentrations despite the small sample sizes. T -tests are usually used if a larger number of data points are available (>25). In the case of smaller data sets, t-tests can be used if the distributions are normal or lognormal. The tables should be revised to clearly indicate whether the data distributions are normal or lognormal to provide justification for using this parametric test.*

Navy Response

The Navy agrees with this comment. Tables 4-27, 4-30, and 4-33 will be revised to indicate whether the data distributions are normal or lognormal.

6. *Conversely, for dissolved copper (Table 4-30), with the same sample size and frequency of detection as total recoverable, the Wilcoxon Rank-Sum (WRS) test was used. It is not clear why the t-test was used for total recoverable copper concentrations and the WRS test used for dissolved fraction of copper concentrations. The table should be revised to add footnotes with data distribution information to clarify why this non-parametric test was used.*

Navy Response

The Navy agrees with this comment. Table 4-30 will be revised to clarify why the Wilcoxon rank sum test was used to for the statistical evaluation of the dissolved copper data sets, while the t-test was used for the evaluation of the total recoverable data sets.

7. *The Gehan test was used for the concentration distributions of tin (Table 4-30), with a small sample size ($n=9$ =site measurements and $m=9$ =background measurements). However, it is generally recommended that there be at least 10 data values in each data set to use the Gehan test. The table should be revised to indicate the rationale for using this particular test.*

Navy Response

The Navy agrees with this comment. Table 4-30 will be revised to indicate the rationale for using the Gehan test for the statistical evaluation of the total recoverable tin data sets.

8. *Tables 4-27, 4-30, and 4-33, include on the Mean of Distribution column header, a superscript (5) Normality verified with Shapiro-Wilks test; Homogeneity of variance verified with F -test. This footnote is unclear. If the footnote indicates that when parametric methods (e.g., t-test), are used, chemical concentrations have been verified to be normally distributed, whereas non-parametric methods (e.g., WRS test), are used for chemical concentrations that are not normally distributed, then it should be revised to more clearly state the rationale for the use of a particular test.*

Navy Response

The Navy agrees with this comment. Tables 4-27, 4-30, and 4-33 will be revised to clearly state the rational for the use of a particular test.