UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

OCT 20 2006

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Mark E. Davidson
U.S. Navy
BRAC PMO SE
4130 Faber Place Drive
Suite 202
North Charleston, SC 29405

Re: Naval Activity Puerto Rico (NAPR), formerly Naval Station Roosevelt Roads, EPA I.D. Number PRD2170027203,

1) Solid Waste Landfill (SWMU #3) Semiannual Groundwater Monitoring

2) Summary Reports for Monitored Natural Attenuation (MNA) Sites

3) RFI Work Plan for SWMUs 16, 27, 28, 29, 42 and AOC C

Dear Mr. Davidson:

The United States Environmental Protection Agency (EPA) Region 2 has the following comments on the above:

Solid Waste Landfill (SWMU #3) Semiannual Groundwater Monitoring

EPA has completed its review of the responses to EPA's comments of August 3, 2006, submitted on behalf of the Navy by Mr. Mark Kimes' (of Baker Environmental) letter of September 11, 2006. EPA requested our consultant, Booz Allen Hamilton, to review those Responses. Based on that review EPA has determined that:

a) the Revised "Assessment Monitoring Decision Diagram" (Figure 4-1) submitted on behalf of the Navy by Mr. Kimes' September 11, 2006 letter is not fully acceptable, as discussed in the enclosed Technical Review; and

b) Under the proposed RCRA Consent Order, continued groundwater monitoring and post-closure groundwater monitoring of the Solid Waste Landfill (SWMU 3) is required to follow the September 1999 Groundwater Sampling and Analysis Plan, Solid Waste Landfill Facility, U.S. Naval Station Roosevelt Roads" (the SAP).

Therefore, if the Navy intends to replace or revise Figure 4-1 of the 1999 SAP to include the proposed "Assessment Monitoring Decision Diagram" procedures, it must submit a request to modify the SAP, including any revisions to the "Assessment Monitoring Decision Diagram" which are necessary to address comments in the enclosed Technical Review. If you wish to modify the 1999 SAP, please submit that proposal within 60 days of your receipt of this letter. Until such a proposal is submitted and approved by EPA, groundwater monitoring and post-closure groundwater monitoring of the Solid Waste Landfill (SWMU 3) shall follow procedures in the 1999 SAP.

Summary Reports for Monitored Natural Attenuation (MNA) Sites

EPA has completed its review of the February 2006 Final Year 5 First Quarter Groundwater Monitoring for Monitored Natural Attenuation (MNA) Sites 124, 520, 731, 734, 1738, and 2842B; the May 2006 Final Year 5 Second Quarter Groundwater Monitoring for MNA Sites 1738 and 2842B; and the August 2006 Year 5 Annual Soil Monitoring and Third Quarter Groundwater Monitoring for MNA Sites 731, 734, 1738 and 2842B, at Naval Activity Puerto Rico (NAPR) in Ceiba, Puerto Rico.

EPA requested our consultant, Booz Allen Hamilton, to review those Reports to determine if they meet the technical standards established in relevant EPA guidance, including the *Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites*, Directive 9200.4-17P (MNA Guidance); the RCRA Ground-Water Monitoring Draft Technical Guidance (EPA/530-R-93-001); and the U.S. EPA Region 2 *Groundwater Sampling Procedure - Low Stress (Low Flow) Purging and Sampling* (March 16, 1998). These reports were also reviewed for compliance with EPA's prior comments on Year 3 and Year 4 Summary Reports included with EPA's letter of July 1, 2005 to Lt. Commander R.G. Terrell of NAPR; and the results of discussions during the meeting between EPA and Navy representatives, held on December 7, 2005 at EPA's New York office.

Based on that review EPA has determined that the subject quarterly and annual groundwater and soil monitoring reports for the MNA sites are not fully in accordance with the above cited guidance documents and/or EPA's prior comments. Our comments on the Year 5 reports are given in the enclosed Technical Review.

Under the requirements of the proposed RCRA Administrative Consent Order (the Order) being finalized between EPA and the Navy, the Navy is required to submit an updated work plan for the MNA sites, which constitute Area of Concern (AOC) F, within 60 days of the effective date of the Order. Therefore, rather than responding to the comments given in the enclosed Technical Review at this time, the updated work plan for the MNA sites, when submitted, shall address the comments in the enclosed Technical Review, as well as the EPA's previous comments on Year 3 and Year 4 MNA Reports included with EPA's letter of July 1, 2005, and the results of discussions, regarding additional MNA site characterization and additional detail and analyses as necessary under the above cited MNA guidance, at the meeting held on December 7, 2005, between EPA and Navy technical representatives, at EPA's New York office.

RFI Work Plan for SWMUs 16, 27, 28, 29, 42 and AOC C

EPA has completed its review of the September 15, 2006 Responses to Comments and the October 11, 2006 revisions to the RFI Work plan. EPA has determined that the September 15, 2006 RFI Work Plan for SWMUs 16, 27, 28, 29, 42 and AOC C, as revised October 11, 2006, is acceptable. Please commence implementation of that RFI pursuant to the schedule given in Figure 5-1 of the work plan.

If you have any questions, please telephone me at (212) 637- 4167.

Sincerely yours,

Timothy R. Gordon
Remedial Project Manager
Caribbean Section
RCRA Programs Branch

Enclosures (2)

cc: Ms. Yarissa Martinez, P.R. Environmental Quality Board, w/encls.
Mr. Israel Torres Rivera, P.R. Environmental Quality Board, w/encls.
Mr. David Criswell, , U.S. Navy, BRAC PMO SE, w/encls.
Mr. Pedro Ruiz, NAPR, w/encls.
Mr. Mark Kimes, Baker Environmental, w/encls.
Ms. Jennifer Nystrom, Booz Allen & Hamilton, w/o encls.

ENCL. 1

TECHNICAL REVIEW

NAVY RESPONSE TO EPA COMMENTS DATED AUGUST 3, 2006, ON THE FEBRUARY 15, 2006, DRAFT SEMIANNUAL GROUNDWATER MONITORING REPORT SEPTEMBER 2005 SAMPLING EVENT BASE LANDFILL

SEPTEMBER 11, 2006

NAVAL ACTIVITY PUERTO RICO
CEIBA, PUERTO RICO

October 5, 2006
REPA3-2203-097

I. RESPONSES TO EPA REGION 2 COMMENT

The response is partially adequate. The response indicates that Figure 4-1 of the September 1999 Groundwater Sampling and Analysis Plan (SAP) for the Solid Waste Landfill is too extensive for a simple site such as the landfill. While the proposed flow chart (Revised Figure 4-1) is designed only to determine whether the site should be placed in assessment monitoring, a number of components of the decision process outlined in Revised Figure 4-1 appear inappropriate and/or incomplete. These concerns are identified and discussed in the following review of the comment responses.

II. RESPONSES TO BOOZ ALLEN TECHNICAL REVIEW COMMENTS

Introduction

No response necessary.

Specific Comments

1. The response is partially adequate. The response indicates that the portion of the overall monitoring at the SWMU 3 Landfill depicted in the Revised Figure 4-1 is actually the detection monitoring phase of the program. The revised Figure 4-1 has been modified accordingly. This change in the figure appears appropriate.

   However, the response and Revised Figure 4-1 indicate that regulatory criteria will be used at this point in the monitoring program to help determine if the landfill should enter assessment monitoring. Such a comparison is inappropriate for a detection monitoring program. The purpose of a detection monitoring program is solely to determine if a unit is releasing contaminants to the groundwater and not to determine if the release poses some potential risk to receptors. Should detection monitoring indicate that a release has

occurred, an assessment monitoring program, with its more rigorous monitoring requirements, is required. Only during an assessment program is it appropriate to compare groundwater quality data against regulatory criteria. To compare such data against regulatory criteria during the detection phase may circumvent the more rigorous monitoring requirements of an assessment monitoring program, which are designed to ensure that all hazardous constituents released to groundwater are identified and fully assessed. The comparison of groundwater quality data to regulatory criteria should be removed from the detection monitoring program.

2. The response is not adequate. The response indicates that statistical comparisons are not necessary when concentrations at the landfill are lower than regulatory criteria, Base Background levels, or landfill background levels. However, as indicated in Specific Comment No. 1, the comparison of groundwater quality data to regulatory criteria is inappropriate during detection monitoring. Moreover, it is not clear how landfill background levels will be compared to detection monitoring data. Presumably, the background data set consists of a number of water quality measurements representing a statistical population. That population must be represented in some manner to facilitate comparisons with downgradient data. However, details for accomplishing this comparison have not been provided. Detailed procedures are necessary for comparing background to downgradient monitoring data during the initial phase of the evaluation of detection monitoring data, as depicted by the first box in Revised Figure 4.1.

3. The response is partially adequate. The response and Revised Figure 4.1 indicate that nonparametric statistical methods will be used for data sets with greater than 15 percent nondetects as specified in Section 4.1.1.1.1 of the 1999 SAP. However, the Revised Figure 4.1 does not include any of the tests for normality and equality of variances among the wells specified in Section 4.1.1.1.1 of the 1999 SAP that would be necessary to determine the suitability of the parametric analysis of variance (ANOVA) method. These tests can indicate that the parametric ANOVA method is inappropriate regardless of the number of nondetects in the data set. In such cases, the Kruskal-Wallis nonparametric ANOVA method would be required. This additional testing to determine the applicability of the parametric ANOVA method should be added to the flow chart depicted in Revised Figure 4.1.

4. The response is partially adequate. While Figure 4-1 has been revised to include statistical analysis of samples with more than 50 percent nondetects, the response indicates that it is acceptable to use downgradient data to establish background initially and the use of some or all detection monitoring data in background data sets can be justified, if necessary, in the future. While the future use of downgradient detection monitoring data to establish background appears to be hypothetical at this point, the use of such data will require careful review and analysis and may prove to be inappropriate.

ENCL. 2

Technical Review of the

Final Year 5 First Quarter Groundwater Monitoring for Monitored Natural Attenuation
Sites 124, 520, 731, 734, 1738, and 2842B
February 2006

Final Year 5 Second Quarter Groundwater Monitoring for Monitored Natural Attenuation
Sites 1738 and 2842B
May 2006

Year 5 Annual Soil Monitoring and Third Quarter Groundwater Monitoring for
Monitored Natural Attenuation Sites 731, 734, 1738, and 2842B
August 2006

NAVAL ACTIVITY PUERTO RICO
CEIBA, PUERTO RICO

REPA3-2203-094
September 7, 2006

Booz Allen reviewed the subject quarterly and annual groundwater and soil monitoring reports for the monitored natural attenuation (MNA) sites to determine if they meet the technical standards established in relevant EPA guidance, including the *Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites* (Directive 9200.4-17P; MNA Guidance), the RCRA Ground-Water Monitoring Draft Technical Guidance (EPA/530-R-93-001), and the U.S. EPA Region 2 *Groundwater Sampling Procedure - Low Stress (Low Flow) Purging and Sampling* (March 16, 1998). These reports were also reviewed for compliance with the comments included in the EPA letter of July 1, 2005; the November 29, 2005, e-mail from EPA to the U.S. Navy; and the agreements made at the meeting between EPA and the Navy that was held at EPA's New York office on December 7, 2005.

Our Technical Review indicates that the subject reports are not in accordance with EPA guidance. However, the reports were prepared in accordance with the agreements made in the December 7, 2005, meeting. At this meeting, it was discussed that sometime in 2006, the MNA program would be implemented under a new RCRA Administrative Consent Order and that the Navy would be required to submit an updated work plan within 60 days of the effective date of the new order. It was agreed that the Year 5 MNA program would proceed as planned until the new Administrative Consent Order was finalized and that the updated work plan would consider and address previous EPA comments (dated July 1 and November 29, 2005) relating to additional site characterization and additional detail and analyses as required by the MNA guidance. Based on this agreement, the reports are acceptable as submitted. The following general comment relates to the updated work plan.

GENERAL COMMENTS

1. As mentioned above and clearly stated in the quarterly and annual reports, the updated work plan will consider and address modifications to the existing program to address previous EPA comments. One of the concerns expressed by EPA in the comments and subsequent meeting was inadequate monitoring well coverage at downgradient locations at MNA site 520, 1738, and 2842B. The 2005 reports state that additional wells will be considered at these sites in the updated work plan, which is acceptable and consistent with previous agreements. To assess the adequacy of the existing monitoring well networks at these sites and all others, the work plan should present water table contour maps generated from recently collected data to document groundwater flow directions and seasonal variations in flow direction. This information, coupled with concentration data, should be used to clearly document the adequacy of the existing well network or provide rationale for additional wells.