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

JUL 28 2011

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Mark E. Davidson
US 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) SWMU 60 (Former Landfill at the Marina) – Revised Final Phase I RFI Report, dated July 22, 2011

2) SWMU 77 (former Small Arms/Rifle Ranges on Punta Medio Mundo) – Revised Final Phase I RFI Report, dated April 28, 2011

Dear Mr. Davidson:

This letter is addressed to you as the Navy's designated project coordinator pursuant to the January 29, 2007 RCRA Administrative Order on Consent ("the Consent Order") between the United States Environmental Protection Agency (EPA) and the U.S. Navy (the Navy).

SWMU 60 (Former Landfill at the Marina) – Revised Final Phase I RFI Report

EPA has completed its review of the above document and the Navy's Responses to EPA's August 6, 2009 comments, both of which were submitted on behalf of the Navy by Mr. Mark Kimes' (of Michael Baker, Inc., your consultant) letter of July 22, 2011. EPA concurs with the recommendations given in Section 7.2 of the Report, that a Full RFI is required for surface and subsurface soils, open water sediments, and groundwater. In addition, the Puerto Rico Environmental Quality Board (PREQB) has reviewed the Navy's preliminary Responses to PREQB's previous comments and concurred in Ms. Gloria Toro Agrait's Email of July 19, 2011.

Therefore, EPA will approve the Revised Final Phase I RFI Report, dated July 2011. Within 90 calendar days of your receipt of this letter, please submit a draft Full RFI Work Plan, which, in addition to including the areas around soil boring locations 60SB01 through 60SB05 and open water sediment locations 60SD01 AND 60SD02, should include an investigation proposal for each of the suspected landfill areas at SWMU 60, as indicated in the Navy's responses to EPA's comments. It is EPA's understanding that those suspected landfill areas correspond to the "1968 polygon features" shown on Figure 4-1 of the Final Phase I RFI Report, dated July 2011.

SWMU 77 (former Small Arms/Rifle Ranges on Punta Medio Mundo) – Revised Final Phase I RFI Report

EPA has completed its review of the above document and the Navy's Responses to EPA's March 24, 2011 comments, both of which were submitted on behalf of the Navy by Ms. Linda Klink's (of Tetra Tech NUS, your consultant) letter of April 28, 2011.

EPA will approve the Revised Final Phase I RFI Report, dated April 2011. EPA concurs with the recommendations given in that Report, that a Full RFI is required at the following subareas of SWMU 77: Rifle Range subarea; possible OB/OD sites subarea; potential Munitions Burial Trench subarea; Detonation Area near Concrete Pad subarea; (current) Pistol Range subarea; and the Former Pistol Range subarea. Therefore, within 90 calendar days of your receipt of this letter, please submit a draft Work Plan for a Full RFI, as discussed above.

In addition, the Puerto Rico Environmental Quality Board (PREQB) has reviewed the Navy's Responses to PREQB's previous comments and the Revised Final Phase I RFI Report, and has several comments. PREQB's comments are discussed in their letter dated June 27, 2011 to myself. A copy is attached as Enclosure # 1. Therefore, within 90 calendar days of your receipt of this letter, please also submit responses and any necessary revisions to the Phase I Report to address PREQB's comments, along with the draft Full RFI Work Plan.

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

Sincerely yours,

Timothy R. Gordon
Project Coordinator
Corrective Action & Special Projects Section
RCRA Programs Branch

Enclosure (1)

cc: Ms. Wilmarie Rivera, P.R. Environmental Quality Board, w/o encl. #1
Ms. Gloria Toro, P.R.Environmental Quality Board, w/o encl. #1
Mr. Mark Kimes, Baker Environmental, w/encl.
Ms. Linda Klink, Tetra Tech NUS, w/encl. #1
Ms. Cathy Dare, TechLaw Inc. w/o encl.
Mr. Felix Lopez, USF&WS, w/o encl.

Encl. #1

COMMONWEALTH OF PUERTO RICO
Office of the Governor
Environmental Quality Board

PUERTO RICO VERDE

ENVIRONMENTAL EMERGENCIES RESPONSE AREA

June 27, 2011

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

RE: REVIEW RESPONSES TO COMMENTS
PHASE I RCRA FACILITY INVESTIGATION REPORT
SWMU 77 – SMALL ARMS RANGE
NAVAL ACTIVITY PUERTO RICO (NAPR)
CEIBA, PR PR2170027203

Dear Mr. Gordon:

The Hazardous Wastes Permits Division (HWPD) and the Federal Facility Coordinator has finished the review of the above-mentioned document.

Suggested revisions to proposed responses are provided in the attachment. Enclosed please find PREQB's comments issued as part of the technical review. If you have any additional comment or question please feel free to contact Gloria M. Toro Agrait at (787) 767-8181 extension 3586 or myself at extension 6129.

Cordially,

Wilmarie Rivera
Federal Facilities Coordinator
Environmental Emergencies Response Area

cc: Gloria M. Toro Agrait, EQB Hazardous Waste Permits Division

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Technical Review of the Navy's Responses to PREQB's Comments on the Draft Phase 1 RCRA Facility Investigation Report for SWMU 77– Small Arms Range, Naval Activity Puerto Rico, Ceiba, Puerto Rico, dated October 2010

The Navy's responses to PREQB comments on the Draft Phase I RCRA Facility Investigation Report for SWMU 77 are accepted, except as noted below.

PAGE-SPECIFIC COMMENTS

1. PREQB Comment 5, Page 4-2, Section 4.1.3: Please discuss Navy use prior to 2007. Although specific records do not exist for Navy use prior to 2007, please discuss what is known about Navy use of this range from the 1940s to 2007 and related MC training, storage and usage.

   Response: Appendix K-1 presents aerial photographs and an analysis of the aerial photography spanning 1936- 1999. Text within this appendix provides a description of activity and features observed on each date of photography analyzed. During the analysis, small-arms ranges were observed on the northeast side of the base as early as 1958, and on all photographs through 1995. The following text has been added at the end of the first paragraph of Section 4.1.3:

   "Appendix K also provides aerial photographs of the area and an analysis of the aerial photography which spans from 1936 to 1999. Text within this appendix provides a description of the activity and features observed on each date of photography analyzed. SWMU 77 was historically used for small arms operations; however, [no?] potential munitions disposal or detonation operations are suspected based on these historical aerial photographs."

   PREQB Evaluation of Response: Please note suggested addition of "no" to final sentence.

2. PREQB Comment 9, Page 4-11, Section 4.4.3: Please include a discussion of the XRF data usability, since it is being included in the risk screening. This comment applies to Section 8.4.3 also.

   Response: XRF screening results were not used in the human health risk screening calculations, human health risk ratios were only calculated for nitroglycerin and arsenic at certain subareas, on an as needed basis, as described in each individual section. The ecological screening-level hazard assessment consisted only of a comparison of positive detections to PALs, risk ratios were not calculated during the ecological risk screening. A qualitative evaluation of the XRF field screening data was conducted during the Field XRF/Laboratory Lead Data Correlation and is presented in each individual section and in Appendix I. Therefore, additional XRF data usability discussions were not added to text.

PREQB Evaluation of Response: Based on statements made in the text of the report, "correlated, calculated laboratory concentrations" calculated from XRF data were screened against the Project Action Limit (PAL; one example is in Section 4.4.2 at the bottom of page 10). Please discuss whether any areas were eliminated from further consideration based on a comparison of the correlated, calculated laboratory concentrations derived from XRF data, and discuss whether the XRF data meet data quality objectives for identifying clean areas of a site.

3. PREQB Comment 14, Page 4-16, Section 4.6: Please add a discussion that describes Figure 4-8, including the rationale for selecting the exposure scenarios and receptors presented and the basis for the assumed complete and incomplete exposure pathways.

Response: A paragraph has been added to Section 4.6 discussing the current and , future receptors and the basis for the complete and incomplete exposure pathways on the Conceptual Site Model Figures.

"Figure 4-8 presents the updated CSM for the MC exposure pathways. From use of the Rifle Range there is potential contamination of the soil. The current or future receptors for the Rifle Range subarea are recreational users, commercial/industrial workers, outdoor workers, construction workers, trespassers, residents, and biota/critical ecological habitat. The human receptors at the rifle range may be exposed to potential contamination from surface soil, subsurface soil (from direct contamination or infiltration from surface soil) and groundwater (leaching of soil contamination). Stormwater is not present at the Rifle Range so the stormwater erosion runoff pathway is not complete. All of the human receptors would be exposed to surface soil and; therefore, complete exposure routes exist for exposure to surface soil from ingestion, direct contact, and inhalation of dust. For subsurface soil, outdoor workers, construction workers, and residents could potentially be exposed to subsurface soil while at the Rifle Range and; therefore, potentially complete pathways exist for exposure to subsurface soil from ingestion, direct contact, and inhalation of dust. Commercial/industrial workers, outdoor workers, construction workers, and residents could potentially be exposed to groundwater at the Rifle Range. Therefore, a potentially complete pathway exists for these receptors from exposure to groundwater through ingestion, dermal contact, and inhalation."

PREQB Evaluation of Response: Please verify that no stormwater is present at the site. It is unlikely that stormwater would not be present during rain events. Please clarify and indicate whether any erosion or depositional features were identified at the site. This evaluation also applies to PREQB Comment 18, Page 5-14, Section 5.8.

4. PREQB Comment 20, Page 7-10, Section 7.9: Please discuss the potential for migration of nitroglycerin and other COPCs to subsurface soil and groundwater.

Response: The following text has been added discussing the potential migration of nitroglycerin and arsenic the COPCs for the Detonation subarea.

"Arsenic and NG were the COPCs for the Detonation Subarea. Arsenic found in soil is either naturally occurring or from anthropogenic releases in the form of insoluble complexes with iron, aluminum, and magnesium oxides found in surface soil, and in these forms, arsenic is relatively immobile. However, under reducing conditions, arsenic can be released from the solid phase, resulting in soluble mobile forms of arsenic, which may potentially leach into groundwater (A TSDR, August 2007). . NG contains a hydrocarbon chain, which renders it susceptible to aerobic biodegradation; it is sufficiently biodegradable that mobility is seldom an issue and so usually will. be attenuated before reaching groundwater. When NG is bound with nitrocellulose it is not susceptible to degradation in soil until the nitrocellulose is weathered away. In such circumstances, a low-level of NG will remain in the soil but will have no impact on groundwater (US Army Corps, 2006)."

PREQB Evaluation of Response: Please add some conclusions about whether leaching to the subsurface and groundwater is possible or likely at this site based on the information provided in this response. This evaluation applies to PREQB Comment 21, Page 8-2, Section 8.1.4 also.

Appendix I, XRF/XBL Correlation Statistical Analysis

1. PREQB Comment 1: Please present the statistical analysis that was conducted that shows the highest XRF sample concentration was an outlier.

   Response: The supporting graphical evaluations (boxplot and a histogram) along with Tukey's Outlier Test that were used to determine that the highest XRF sample concentration was an outlier were added to Appendix I, including supplementary text and a figure. The graphical evaluation of the XRF concentrations and the Tukey outlier test, was the basis for concluding that the maximum XRF.

   PREQB Evaluation of Response: If there are two populations, as suggested in the response to Comment 4 on Appendix I, please clarify why these two populations were treated as a single population for the outlier test of the largest XRF concentration.

2. PREQB Comment 4: Please provide the justification for selecting 400 mg/kg as the concentration at which the dataset is split into two groups – one representing data below 400 mg/kg and one representing data above 400 mg/kg. Note that the equations used to predict laboratory concentrations from XRF data do not converge at 400 mg/kg, resulting in vastly different predicted lab concentrations for XRF near 400 mg/kg. The equations from Figures 2 and 3 in Appendix I would predict lab concentrations of 672 mg/kg and 1988 mg/kg for XRF concentrations of 399.9 mg/kg and 400.1 mg/kg respectively. Please address this issue as part of the justification and

discuss the predicted laboratory results for XRF data immediately below and above 400 mg/kg.

Response: Based on the scatterplot of the data it appears that the lower concentrations follow a different slope than the higher concentrations. This indicates that the two subgroups may come from different populations and; therefore, different regression models would be required to estimate the fixed base lab concentrations. 400 mg/kg was chosen as the concentration at which the dataset is split into two groups based on the visual examination of the data. Concentrations should only be predicted for the observed concentration range. Based on the way the data was split, there is no overlap of observed concentrations. The utility of using XRF screening for delineation and characterization of lead contamination vs. fixed-based laboratory analysis will be discussed further during the Full RFI project planning.

PREQB Evaluation of Response: The response indicates that two regression models were used because the two sub-groups (<400 mg/kg and >400 mg/kg) potentially belonged to two separate populations. Please clarify if these populations merely statistical in nature or is there a physical difference (e.g. the higher concentration population is clustered around specific part of the site from the lower concentrations or a different depth). Also, based on an analysis of the data in the newly included Appendix I, Table 1, a regression equation of LAB = 0.6884 x XRF^1.144 appears to fit the entire data set (minus the outlier) better than either of the separate linear models. Please address. As stated in our evaluation of the Navy's response to PREQB Comment 9, please clarify whether the correlated, calculated laboratory data was used to make decisions concerning whether areas were clean or contaminated. If so, agreement needs to be made on the appropriate correlation used to derive data used to make such decisions.

3. New PREQB Comment on Appendix I: Sample 77FP-SS004-G00.5 appears as both the first and last entry to the new Table 1 in Appendix I. Please clarify.

COMMONWEALTH OF PUERTO RICO
Office of the Governor
Environmental Quality Board

PUERTO RICO VERDE

ENVIRONMENTAL EMERGENCIES RESPONSE AREA

August 5, 2011

Timothy Gordon
US Environmental Protection Agency – Region II
290 Broadway – 22nd Floor
New York, New York 10007-1866

Re: Review Response to Comments and
Final Phase I RCRA Facility Investigation Report
SWMU 60 – Former Landfill at the Marina
Naval Activity Puerto Rico, Ceiba
EPA ID No. PR2170027203

Dear Mr. Gordon:

The Federal Facility Coordinator (FFC) and the Hazardous Wastes Permits Division (HWPD) has finished the review of the Response to Comments and the Final Phase I RCRA Facility Investigation Report for SWMU 60 at the US Naval Activity Puerto Rico.

The HWPD recommends approval of the document as final with the following clarifications:

1) Response to comment 4 and 5 are accepted since this site will be moving to a Full RCRA Facility Investigation and the requested conceptual site models will be presented in the Full RFI Work Plan.

2) No further response from the Navy on comment 7b is required but the following detail should be noted for future programs. It is acceptable to freeze samples in the field prior to sending to the lab. However, in order to confirm that the method was properly followed, the temperature of the freezer must be monitored to ensure that the method temperature requirements of <-7° C were met. In additions it is unknown if the samples thawed during the trip to the laboratory.

3) The Navy presented a discussion on the use of MDL versus the RL to EPA. Since PREQB deferred to EPA position on this issue, no further comments will be provided.

4) Response to comment 17 is accepted since the ERA will include a quantitative evaluation of bats including the derivation of risk estimates.

5) On the response to comment 16 there is still a correction from TRC to PREQB on the fourth entry of the response string.

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If you have any additional comments or questions please feel free to contact Gloria M. Toro Agrait at (767) 787-8181 extension 3586 or myself at extension 6129.

Cordially,

Wilmarie Rivera
Federal Facilities Coordinator
Environmental Emergencies Response Area

cc. Gloria M. Toro Agrait, Environmental Permits Office