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November 20, 2007

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 N62470-02-D-3052
Navy CLEAN, District III
Contract Task Order (CTO) 0121
U.S. Naval Activity Puerto Rico (NAPR)
Final Phase I RCRA Facility Investigation Report for SWMU 16
Final Phase I RCRA Facility Investigation Report for SWMU 42
Final Phase I RCRA Facility Investigation Report for AOC A
Naval Activity Puerto Rico
EPA I.D. No. PR2170027203

Dear Mr. Everett:

Baker Environmental, Inc. (Baker), on behalf of the Navy, is pleased to provide you one hard copy of the replacement cover and spine, inside cover, text, tables, figure, appendices for the Draft Phase I RCRA Facility Investigation Report for SWMU 16, Naval Activity Puerto Rico, the Draft Phase I RCRA Facility Investigation Report for SWMU 42, Naval Activity Puerto Rico, and the Draft Phase I RCRA Facility Investigation Report for AOC A, Naval Activity Puerto Rico for your review and approval. These replacement pages make up the Final Phase I RCRA Facility Investigation Report for SWMUs 16 and 42 and AOC A. Directions for inserting the replacement pages into the Draft Phase I RCRA Facility Investigation Report for SWMUs 16 and 42 and AOC A are provided for your use. Also included with the copy of the replacement pages is one electronic version provided on CD of the Final Phase I RCRA Facility Investigation Report for SWMUs 16 and 42 and AOC A, Naval Activity Puerto Rico.

These documents are being submitted in accordance with the EPA comments dated September 24, 2007. This comment letter found the Navy Responses dated August 2, 2007 on the Draft Phase I RCRA Facility Investigation Report for SWMU 16 dated March 26, 2007 acceptable and requested that the RFI Report to be revised in accordance with the Navy responses dated August 2, 2007. The attached version of the SWMU 16 RFI Report has been revised accordingly. This comment letter also requested the Navy to provide revised responses to the EPA comment letter dated June 11, 2007 addressing the comments in the Technical Review dated September 7, 2007 and the results of the September 20, 2007 Conference Call between the Navy, EPA Region II, Baker, and TechLaw on the Draft Phase I RCRA Facility Investigation Report for SWMU 42 dated March 23, 2007, and the Draft Phase I RCRA Facility Investigation Report for AOC A dated April 25, 2007. The Navy responses to the Technical Review dated September 7, 2007, reflecting the results of the September 20, 2007 conference call discussing the June 11, 2007 comments are attached for your review. The attached versions of the SWMU 42 and AOC A RFI Reports have been revised accordingly.

If you have questions regarding this submittal, please contact Mr. Mark E. Davidson at (843) 743-2135. Additional distribution has been made as indicated below.

Sincerely,

BAKER ENVIRONMENTAL, INC.

Mark E. Kimes, P.E.
Activity Manager

MEK/lp
Attachments

cc: Ms. Jean Mann, NAVFAC Atlantic – Code AQ119 (letter only)
Mr. David Criswell, BRAC Program Management Office SE (letter only)
Mr. Jeffrey G. Meyers, Navy BRAC PMO SE (letter only)
Mr. Mark Davidson, Navy BRAC PMO SE (1 hard copy and 1 CD)
Mr. Pedro Ruiz, NAPR (1 hard copy and 1 CD)
Ms. Bonnie Capito, NAVFAC Atlantic – Code EV42 (1 hard copy)
Mr. Tim Gordon, US EPA Region II (1 hard copy and 1 CD)
Mr. Andrew Dorn, TechLaw Inc. (1 CD)
Mr. Carl Soderberg, US EPA Caribbean Office (1 CD)
Mr. Manny Vargas, PR EQB (1 hard copy and 1 CD)
Ms. Josefina Gonzalez, PR EQB (1 hard copy and 1 CD)
Mr. Felix Lopez, U.S. F&WS (1 CD)
Ms. John Swenfurth, CH2M Hill Tampa (1 CD)

NAVY RESPONSES TO EPA COMMENTS DATED SEPTEMBER 24, 2007 ON THE NAVY RESPONSES DATED AUGUST 2, 2007 ON EPA COMMENTS DATED JUNE 11, 2007 DRAFT PHASE I RCRA FACILITY INVESTIGATION REPORTS FOR SWMUs 16 and 42, and AOC A NAVAL ACTIVITY PUERTO RICO

DRAFT PHASE I RCRA FACILITY INVESTIGATION REPORT FOR SWMU 42 (REPORT)

GENERAL COMMENTS

Navy Response to EPA General Comment (regarding acrolein), Page 2 of 20: The Navy's response has partially addressed this comment. More information is required to assess why acrolein is not present. It is suggested that the Navy either validate their data or provide more information about the timeframe for acrolein application. The argument that acrolein was applied in a manner consistent with application does not preclude the need to evaluate this chemical since RCRA requires that all releases of hazardous waste or constituents be addressed.

Navy Response: The statement regarding the potential causes for the presence of acrolein will be removed from Section 6.1 because the information requested in support of the statement is not available. Potential human health risk concerns posed by acrolein have been evaluated and will be presented in the Final Phase I RFI Report. (Please see Navy's response to TechLaw comment regarding the proposal for human health risks for potential exposure to lagoon sediment below).

Navy Response to EPA General Comment (regarding copper), Page 2 of 20: The Navy's response has not adequately addressed this comment. The response has not addressed the comment regarding copper as it only describes the results for vanadium. Ensure that the Report is revised as originally requested in Specific Comment 8.

Navy Response: Potential human health risk concerns posed by copper (in addition to vanadium) have been evaluated and will also be included in Section 5.4 of the Final Phase I RFI Report.

Navy Response to EPA General Comment (regarding arsenic and vanadium in soil), Page 3 of 20: The Navy's response has not adequately addressed this comment. The comment discusses the probability plots for arsenic and vanadium used in evaluating the Upper Limit of Means (ULM) but does not adequately explain what these plots show or why they appear to show several populations. Probability plots are useful in visually determining whether a small data set follows a normal distribution and estimates the mean and standard deviation. However, these plots, although they fall below the accepted background concentration ULM, do not verify that the there is no contamination. For example, *Figure 1 - Arsenic in Surface Soil* appears to show three separate populations and it is difficult to reconcile that all three populations are not reflective of arsenic contamination in surface soil although they do appear to fall below 2.59 mg/kg.

Navy Response: The Navy agrees that the probability plot shown in Figure 1 exhibits what appears to be a mixture of several different populations (as evidenced by multiple inflection points). However, when a break (i.e., inflection point) occurs within the data set, you do not see a segment with a gradual slope followed by a segment with a steeper slope (i.e., the slope of each segment within multiple data points are either similar to the preceding segment or more gradual than the preceding segment). In this case, the inflection points should not be considered background delimiters (NFESC, 2003 and 2004).

The pattern observed in Figure 1 may be attributable to the relatively low sample size of the NAPR background arsenic surface soil data set (n = 9). It is noted that background data sets can be composed of multiple natural subpopulations due to factors such as variations in physical characteristics of the soil (the

NAPR background surface soil data set for inorganics are lumped into a single data set with no consideration given to physical characteristics such as grain size). Therefore, the appearance of the probability plots als may be explained by the presence of multiple natural subpopulations within the NAPR background arsenic surface soil data set. Regardless of the reason for the appearance of several subpopulations within the data set, all data points within each apparent subpopulation fall near or on the predicted quantile line. The absence of data points above the predicted quantile line at the upper concentration range of the data is not indicative of a contaminated subpopulation. In summary, the Navy believes that the probability plot shown in Figure 1 does not show evidence of contamination within the NAPR background surface soil data set for arsenic.

In addition, it is unclear why the data in *Figure 2 - Arsenic in Subsurface Soil* appears to form step patterns. These step patterns may be the result of different sampling rounds and/or reflect differing reporting limits. For example, the data included in the Table 3-1 of the October 2006 Background Report (Background Report) shows that the data was collected in 1999, 2000 and 2004. It is also unclear which data is shown in Figure 2. Is the arsenic subsurface soils data from the clay, fine sand/silt or weathered data? Arsenic subsurface soils also appear to show that there is some arsenic contamination in subsurface soils although below the ULM.

Navy Response: The NAPR background subsurface soil data set depicted on Figure 2 is the clay soil type background data (most prevalent soil type at SWMU 42).

As discussed in the response above, the appearance of a mixture of several different populations in Figure 2 may be attributable to the relatively low sample size of the NAPR background subsurface soil data set for arsenic (n = 19). Again, it is important to note that when a break (i.e., inflection point) occurs within the data set, you do not see a segment with a gradual slope followed by a segment with a steeper slope (i.e., the slope of each segment within multiple data points are either similar to the preceding segment or more gradual than the preceding segment). In this case, the inflection points in Figure 2 giving the step pattern should not be considered background delimiters (NFESC, 2003 and 2004). It is also important to note that all data points within each apparent subpopulation fall near or on the predicted quantile line. Again, this characteristic is not indicative of a contaminated subpopulation. In summary, the Navy believes that the probability plot shown in Figure 1 does not show evidence of contamination within the NAPR background subsurface soil data set for arsenic (clay soil type).

The vanadium background data raises similar questions related to sample collection times, reporting limit differences and the presence of multiple populations reflective of contamination. Please provide an explanation about why the probability plots differ from traditional probability plots; why they appear to show several different data populations; and acknowledge that the data may show arsenic and vanadium contamination, even though the concentrations are below the reported “background” levels. EPA has developed guidance to make valid comparisons between background concentrations and concentrations measured in soil samples at Superfund and RCRA sites. [EPA. 2002. Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites. EPA 540-R-01-003. September 2002]. The background comparisons should be consistent with that guidance.

Navy Response: The Navy respectively disagrees that the background arsenic and vanadium soil data sets show any evidence of contamination. Please see the responses presented above for arsenic in NAPR background surface soil and subsurface soil.

The probability plots were constructed using NCSS statistical software by plotting analytical data (either non-transformed or log-transformed) versus expected quantiles of a given distribution. An alternative approach is to plot analytical data versus cumulative percentages on a special type of graph paper called probability plotting paper. Because NCSS statistical software determines what the expected quantiles of a distribution are, this approach was used in lieu of manually plotting the data on probability plotting paper.

The comparison of analytical data to the background screening values (upper level of the means) was used as a screening tool in the Phase I RFI Report. The number of data points in each medium-specific data set is generally not large enough to allow for statistical comparisions to background data. It is noted that any statistical comparisons conducted on analytical data at NAPR will be conducted in accordance with Navy guidance (Navy guidance documents for environmental background analysis are available at http://web.ead.anl.gov/ecorisk/related/). These guidance documents, which include the use of probability plots in the evaluation of analytical data, support and implement the Navy's background policy by providing detailed instructions for evaluating background chemicals in soil, sediment, and groundwater.

Navy Response to EPA General Comment (regarding a proposal for human health risks for potential exposure to lagoon sediment), Page 4 of 20: The Navy's response has partially addressed this comment. The response appears to address the comment for arsenic, vanadium and copper. However, more information is needed on acrolein. Please refer to the first comment discussing the Navy's response regarding acrolein. Furthermore, unless prior agreements have been made and/or the property is already restricted from residential development, please provide justification for the absence of an evaluation of future risk which would include an unrestricted land use scenario (i.e., consider performing the baseline human health risk assessment [HHRA] assuming that institutional or land use controls [IC/LUCs] are not in place and effective in precluding exposure) or quantitatively evaluate risk and hazard under residential land use conditions.

Navy Response: Regarding future site uses, it is expected that the Water Purification Plant will continue to provide water after property transfer to the Puerto Rico Aquaduct and Sewer Authority (PRASA) and therefore, the two water purification plant lagoons will remain in operation. Continued operation of the plant is also expected to include continued periodic removal of the sediment with off-site landfilling, which is currently on a 5-year cycle. Fencing is also present, which prevents trespassing into the lagoon area. It is expected that if the plant is shut down, the lagoons will be dredged. Future land use will be controlled to prevent residential use of the property. It is also noted that the sludge lagoons are lined, thereby mitigating the vertical migration of contamination from the sludge. Text revisions will be provided in Section 5.4 and 6.1 to reflect the potential human health risks in the event of changes in land use at this site.

Navy Response to EPA General Comment (regarding unacceptable human health risks from potential exposure to lagoon sediment), Page 5 of 20: The Navy's response has not adequately addressed this comment. It is difficult to agree with the Navy's conclusion that the NAPR background groundwater set is representative of background conditions. The probability plot in Figure 5 appears to show several different populations of data reflected on the plot, but there is no discussion of potential contamination in groundwater although the concentrations are below the accepted background levels. Please refer to the General Comment response above regarding arsenic and vanadium in soil.

Navy Response: The Navy respectfully disagrees with this comment. Please see the responses presented above for arsenic in NAPR background surface soil and subsurface soil.

Navy Response to EPA General Comment (regarding a recommendation for Corrective Action Complete), Page 5 of 20: The Navy's response has partially addressed this comment. There does not appear to be a risk for arsenic, vanadium and copper at this time, however, more information is needed on acrolein. Please refer to the first general comment regarding the Navy's response concerning acrolein.

Navy Response: As concluded by the risk evaluation, unacceptable risks are not present even including acrolein under the current conditions. Future risks will be eliminated because the removal and proper disposal of lagoon sediment will be a requirement for the property if the plant ceases operation. Revised text in Section 6.1 provides conclusions to reflect the results of the preliminary human health risk

assessment and revised text in Section 6.2 includes the recommendation regarding the removal of lagoon sediment in the event that the plant ceases operation.

Navy Response to EPA General Comment (regarding background levels of vanadium in groundwater, Page 5 of 20: The Navy's response has not addressed this comment. It is difficult to agree with the Navy's conclusion that that the NAPR background groundwater set is representative of background conditions. The probability plot in Figure 5 appears to show several different populations of data reflected on the plot. Please refer to the General Comment response above regarding arsenic and vanadium in soil

Navy Response: The Navy respectfully disagrees with this comment. Please see the responses presented above for arsenic in NAPR background surface soil and subsurface soil.

SPECIFIC COMMENTS

1. **Section 4.1 Soil Boring Advancement and Temporary Well Installation:** The Navy's response has partially addressed Specific Comment 1. The sampling locations in Figure 4-1 of the Report vary from the proposed locations shown in Figure 3-5 of the approved Work Plan. If the soil borings are located as specified in the Work Plan, as stated in Navy's response, revise Figure 4-1 to show the actual sampling locations.

Navy Response: The soil boring locations shown on Figure 4-1 are at the planned locations. The legend will be corrected to delete the two occurrences of the word "Proposed" describing the sampling locations. Sediment sample locations were slightly adjusted in the field for personnel safety. Revised Figure 4-1 will be provided in the Final Phase I RFI Report for SWMU 42.

NAVY RESPONSES TO COMMENTS FROM
TECHNICAL REVIEW OF THE RESPONES
TO EPA AND TECHLAW COMMENTS
NAVAL ACTIVITY PUERTO RICO
DRAFT PHASE I RCRA FACILITY INVESTIGATION REPORT FOR
SWMU 16, 42, and AOC A
DATED JULY 27, 2007

DRAFT PHASE I RCRA FACILITY INVESTIGATION REPORT FOR AOC A (REPORT)

SPECIFIC COMMENTS

4. **Section 4.2.2 Concrete Chip Samples:** The Navy's response has partially addressed Specific Comment 4. According to Section 3.6, Concrete Chip Sampling and Analysis Program of the Work Plan "if during the ½ inch deep sample collection procedure the field team has an indication that contamination may be below the top ½ inch, an additional sample will be collected from ½ inch to 1 ½ inches or deeper pending site conditions." Revise the RFI Report to provide the rationale for not collecting additional deeper concrete chip samples.

   Navy Response: No visible signs of contamination were noted at the ½-inch depth, therefore concrete chip samples were not collected from a deeper interval. This is in accordance with USEPA letter (March 8, 2002) that pertains to appropriate sampling of PCB-contaminated surfaces in the Interior of Building 38, which has been used to guide the sampling protocol at AOC A. In this letter, comments from the Pesticides and Toxic Substances Branch state as follows: "PCB bulk samples should be taken from the top ½-inch of concrete. If deeper penetration of PCBs is anticipated, additional samples of material ½-inch to 1½-inch or deeper can be taken.."

   Rationale will be provided in the text of the revised draft report to explain why samples were not collected from a deeper interval.

7. **Section 4.3.5 Equipment Rinsates:** The Navy's response has partially addressed Specific Comment 7. The Logbook in Appendix A.1 does not indicate whether the disposable stainless steel spoons were re-used for each sampling location. Furthermore, the response does not clarify why the equipment rinsate sample was collected a day before the concrete sampling, when the chisel would appear to be a non-disposable piece of equipment. Ensure that the report is revised as requested in Specific Comment 7.

   Navy Response: Equipment rinsate samples of the disposable equipment were not collected on the same day as the concrete chip samples because of delays in the field.

8. **Section 5.5.2 STL Savannah SDG 22098-2:** The Navy's response has not addressed Specific Comment 8. The response has not explained why the sampling results for chip samples AOCACC02, AOCACC06, and AOCACC05 should be strictly qualified based on an equipment rinsate sample collected a day before the sampling date. As stated in Specific Comment 7, equipment blanks are collected to verify that non-disposable equipment have been adequately decontaminated. It does not appear appropriate to use an equipment rinsate sample collected a day before the environmental sample collection date to quantify data. Ensure that the Report is revised as requested in Specific Comment 8.

   Navy Response: As noted in Navy's response to Specific Comment 7, the equipment rinsate sample was not collected from ***non-disposable*** equipment following decontamination to verify

that the equipment had been adequately decontaminated prior to its reuse. It was collected to represent any transferable chemicals (residual from the manufacturer or the packaging) from a batch of ***disposable*** sample equipment. Therefore, it was not considered to be of concern that the rinsate sample was collected a day prior to the use of the sampling equipment. Note that the rinsate sample could not be collected the same day because of delays in the field, also as noted earlier.

10. **Tables:** The Navy's response has partially addressed Specific Comment 10. Ensure that the Report is revised as requested in Specific Comment 10.

    Navy Response: Table 5-2 will be revised and text will be checked for appropriate revisions as described in Navy's original response.