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March 1, 2011

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 N62470-10-D-3000
IQC for A/E Services for Multi-Media
Environmental Compliance Engineering Support
Delivery Order (DO) JM01
U.S. Naval Activity Puerto Rico (NAPR)
EPA I.D. No. PR2170027203
Final Phase I RCRA Facility Investigation Report for SWMU 75

Dear Mr. Everett:

Michael Baker Jr., Inc. (Baker), on behalf of the Navy, is pleased to provide you with one hard copy and one electronic copy provided on CD of the replacement pages for the Draft Phase I RCRA Facility Investigation Report for SWMU 75. These replacement pages make up the Final Phase I RCRA Facility Investigation Report for SWMU 75. Directions for inserting these pages into the Draft Report are provided for your use.

This report is being submitted in accordance with EPA comments dated December 8, 2010. The Navy's responses to these comments are included for your review. Additional distribution has been made as indicated below. The Navy is requesting an extension to September 1, 2011 for the submittal of the Full RFI Work Plan as requested in the EPA letter dated December 8, 2010. If you have questions regarding this submittal, please contact Mr. Mark Davidson at (843) 743-2124.

Sincerely,
MICHAEL BAKER JR., INC.

A handwritten signature in black ink that reads "Mark E. Kimes".

Mark E. Kimes, P.E.
Activity Coordinator

MEK/vk
Attachments

cc: Ms. Debra Evans-Ripley, BRAC PMO SE (letter only)
Mr. David Criswell, BRAC PMO SE (letter only)
Mr. Mark E. Davidson, BRAC PMO SE (1 hard copy and 1 CD)
Mr. Pedro Ruiz, NAPR (1 CD)
Mr. Tim Gordon, US EPA Region II (1 hard copy and 1 CD)
Mr. Carl Soderberg, US EPA Caribbean Office (1 hard copy and 1 CD)
Ms. Gloria Toro, PREQB (1 hard copy and 1 CD)
Ms. Bonnie Capito, NAVFAC Atlantic – Code EV42 (1 hard copy for Administrative Record)
Ms. Wilmarie Rivera, PREQB (1 CD)
Mr. Felix Lopez, US F&WS (1CD)
Ms. Brenda Smith, TechLaw, Inc. (1 CD)

**NAVY RESPONSES TO EPA COMMENTS DATED DECEMBER 8, 2010
ON THE
DRAFT PHASE I RCRA FACILITY INVESTIGATION REPORT
SWMU 75 – BUILDING 803
DATED AUGUST 26, 2010**

EPA COMMENTS

GENERAL COMMENTS

EPA General Comment 1: *Since an underground concrete trench has been discovered leading directly from the interior of Building 803 to the waters of Ensenada Honda, the proposed Full RFI work plan must include a proposal to investigate possible contamination within that underground trench and any impacts from discharges from the underground trench to the adjacent sediments of Ensenada Honda.*

Navy Response to EPA General Comment 1: The concrete conduit is an integral component of the emergency fire deluge system as it supplies water from Ensenada Honda to the pump house (SWMU75); it was not recently discovered. Investigation of the concrete conduit was considered and dismissed during development of the Phase I RFI Work Plan. The Navy response to TechLaw General Comment 2 (Navy Response to Comment letter dated December 20, 2007) and Section 3 of the EPA approved Final Phase I RCRA Facility Investigation Work Plan for SWMU 75 – Building 803 provide the justification that investigation of possible contamination within the concrete conduit is not necessary (see below).

TechLaw General Comment 2: *Section 2.1 (Current Site Conditions/Usage) states that Building 803 contains access/manway doors in the floor that lead directly to Ensenda Honda. During the Phase I/II ECP investigation, investigators noted numerous stains on the floor and evidence of previous releases of waste oil and diesel fuel. In addition, as seen in Appendix A (Photographs of SWMU 75, Building 803), several cracks and holes can be seen in the concrete floor of the building. As such, it is unclear why Section 3.0 (Scope of Investigation) states that, “. . . [I]t is unlikely that significant contamination could have migrated to the exterior environment to Ensenada Honda or vertically migrated to the groundwater within the site.” Revise the Work Plan to include sampling at the outfall to Ensenda Honda, along the access/manway that leads directly to Ensenda Honda, and the area immediately surrounding the access/manway to Ensenda Honda, or clarify why sampling is not necessary.*

Navy Response to TechLaw General Comment 2: It is acknowledged that various cracks can be seen in the building floor; however, it is unlikely that these cracks penetrate through the entire thickness of the concrete. The only hole visible in any of the photographs is the one near the motor in Photograph A-3. However, there is no evidence that the hole was used for discharging any waste oil or diesel fuel. The nearest location of a potential spill was tested using the wipe sample at location 21E-01, where no SVOCs were detected, except for a low concentration of bis (2-Ethylhexyl)phthalate. The observations and photographs from the ECP do not suggest that the access/manway was used as a discharge location for wastes. Most likely, it was used for personnel to enter and clear the intake to the saltwater pumps. Therefore, it is not considered necessary to sample the access/manway or its surrounding area within the building, which has already been sampled using the wipe samples. Moreover, there is no outfall (rather, it is an intake) at the Ensenada Honda. The rationale for not sampling around the manway/access and its surrounding, within the salt-water intake inside the building, and at the “outfall” at Ensenda Honda will be included in Section 3.0.

SECTION 3.0 - SCOPE OF INVESTIGATION

Surface and subsurface soil samples will be collected from SWMU 75 as part of the Phase I RFI. As noted in the analysis presented in Appendix B and discussed in Section 2.2, during the ECP investigation, little contamination was discovered within the interior of the building at the locations where releases were significant enough to be visible on the concrete floor and surfaces. Therefore, it is unlikely that significant contamination could have migrated to the exterior environment to Ensenada Honda or vertically migrated to the groundwater within the site. Therefore, analysis of groundwater, surface water, and sediments will not be undertaken at this time.

EPA General Comment 2: *Since no groundwater analytical data was obtained as part of the Phase I RFI, and since release to the soil have been indicated by the Phase I results, the proposed Full RFI work plan must include a proposal to investigate possible impacts to the groundwater. Also, since wells 803-MW1, 803-MW2, and 803-MW3, which were reportedly installed during 1994 UST investigations could not be located or gauged, the Full RFI work plan must include, in addition to sampling and gauging of existing wells 803-MW4 and 803-MW5, a proposal to install and sample at least two additional groundwater wells so as to be able to define the groundwater flow direction and gradients in the area of SWMU 75, and determine whether or not releases from SWMU 75 have impacted that groundwater.*

Navy Response to EPA General Comment 2: Well 803-MW3 was located during a January 2011 site visit; Sections 4.2 and 5.2.2 have been updated to note the location of this third well. It is anticipated that the remaining two wells will be located with additional efforts (i.e., metal detector). An attempt to locate the remaining two wells will be made prior to development of the Full RFI work plan. Section 7.2 has been revised to outline the sampling of five existing wells detailing the either the two remaining wells will be located or two new wells will be installed. Sections 4, 6, and 7 figures have been revised to show the locations of the five monitoring wells.

EPA General Comment 3: *Since Section 4.1 of the Phase I RFI report indicates that: soil boring 75SB03 (on the east side of Building 896) is “not representative of SWMU 75”, and that at soil boring 75SB05, only one subsurface soil simple was collected (instead of two as proposed in the Phase I RFI work plan, and since Figure 7-1 (Proposed Sample Locations for Full RFI) of the Phase I RFI report shows no additional soil samples to be proposed for the Full RFI at locations east/southeast of 75SB05 or west/southwest of 75SB04 and 75SB05, i.e., in the direction of Ensenada Honda; EPA requests that, in addition to the soil sampling locations shown on Figure 7-1, the Full RFI work plan should include additional surface and subsurface soil sampling points located both east and southeast of 75SE05, as well as west/southwest of 75SB04 and 75SB05, i.e., in the direction of Ensenada Honda.*

Navy Response to EPA General Comment 3: SWMU 74 is located adjacent to the eastern portion of SWMU 75 and boring location 75SB03 lies within the Fueling Piers Area of SWMU 74. Further characterization of surface soil in the vicinity of sample location 75SB03 will be performed during the Corrective Measures Study (CMS) at the Fueling Piers Area of SWMU 74 [Addendum A of the Final Corrective Measures Study Work Plan for SWMU 74, Baker, 2010].

Section 7.2 has been revised to include the collection of surface and subsurface soil samples in the vicinity of sample location 75SB05 in the Full RFI Work Plan.

PREQB GENERAL COMMENTS

PREQB General Comment 1: *Please clarify why PREQB’s Water Quality Standards Regulation is not included as applicable screening criteria. PREQB has requested that its Water Quality Standards be included as screening criteria for all work plans and reports for investigations at Naval Activity Puerto Rico (NAPR), yet this applicable, relevant and appropriate (ARAR) regulation is not included for groundwater in this work plan (refer to Section 6.1.1). Please clarify.*

Navy Response to EPA General Comment 1: The Puerto Rico Water Quality Standards (PRWQS) has been added to Section 6.1.1 and referenced in Section 8.0.

PAGE-SPECIFIC COMMENTS

PREQB Comment 1: Page 2-2, Section 3.2.1, Paragraph 2:

a. *The text indicates that monitoring wells were installed within all five soil borings drilled as part of the 1994 Site Characterization efforts. The supporting figures indicate the presence of two monitoring wells that are noted to have been installed in 1994. Please indicate the fate of the remaining three wells, if known (were they subsequently destroyed, are their locations unknown, were they abandoned at some later time?). Also, please provide an indication as to whether the direction of ground water flow across the area was determined using water level data obtained during the 1994 site investigation activities.*

Navy Response to PREQB Comment 1a: The remaining three wells installed in 1994 were not identified during the SWMU 75 Phase I RFI and the fate of these wells is unknown. See Navy Response to EPA General Comment 2 regarding the identification of one of the three remaining wells during a January 2011 site visit. According to the 1994 Site Characterization Report the general groundwater flow direction is southwest toward Ensenada Honda. Section 5.2.2 has been revised to include the groundwater flow direction reported in the 1994 Site Characterization Report.

b. *Please correct the spelling of “ethylbenzene” in the second sentence.*

Navy Response to PREQB Comment 1b: The text has been revised accordingly.

PREQB Comment 2: Page 4-1, Section 4.1: *Please clarify in the first paragraph whether releases were detected in sample 75SB03, and whether the proposed investigation at SWMU 74 will include further characterization of surface soil at this location.*

Navy Response to PREQB Comment 2: Section 4.1 has been revised to state that surface soil sample 75SB03-00 exceeded the Regional Residential Screening Level (SL) for several SVOCs and the selected ecological screening and Base background for lead. A reference to Section 6.1, where details of the analytical results are provided, was also added. Analytical results for sample 75SB03 are provided in Section 6.2. The last two sentences of the first paragraph of Section 4.1 state the proposed investigation at SWMU 74 will include further characterization of surface soil in the vicinity of sample location 75SB03 [Proposed Phase II Corrective Measures Study (CMS) activities at the Fueling Piers Area of SWMU 74 will include further characterization of surface soil (Baker, 2010)]. Boring location 75SB03 lies within the Fueling Piers Area of SWMU 74. Section 7.1 - Conclusions also state that sample location 75SB03 will be further characterized during the SWMU 74 proposed investigations.

PREQB Comment 3: Page 4-2, Section 4.1: *Please clarify if the subsurface soil samples were collected from predetermined soil depths, as indicated in the text, where subsurface samples were collected from 1-3 feet below ground surface (bgs) and at 7 to 9 feet bgs or refusal. If so, please clarify why the work plan was not followed in determining the depth of the shallow subsurface soil samples. The work plan states: “One surface soil sample (0 to 1 foot below ground surface [bgs]) and two subsurface soil samples [based on flame ionization detector(FID)/ photo ionization detector (PID), olfactory and visual screening and just above the water table] will be collected from each boring location [Section 3.1 (emphasis added)]. Selecting arbitrary depths for subsurface soil samples results in a data gap in characterizing soil between 3 feet bgs and 7 feet bgs. Please clarify why this deviation occurred and discuss the potential impact on the investigation.*

Navy Response to PREQB Comment 3: The subsurface soil samples were not collected at predetermined depths. The subsurface soil samples were collected according to the EPA and PREQB approved work plan. Since impacts to subsurface soil were not evident based on visual, olfactory, or photoionization detector (PID) screening, subsurface soil samples were collected from the 1 to 3 feet bgs interval (i.e., immediately below the surface soil interval as this is the most likely interval to be impacted since it is closest to a potential release at the ground surface) and the 7 to 9 feet bgs interval (just above the water table). As only two subsurface soil samples were proposed to be collected and evidence of impacts were not observed, the potential for data gaps will always exist. The last paragraph of Section 4.1 has been revised to include the following:

Since impacts to subsurface soil were not evident based on visual, olfactory, or photoionization detector (PID) screening, subsurface soil samples were collected from the 1 to 3 feet bgs interval (immediately below the surface soil interval) and the 7 to 9 feet bgs interval (just above the water table). Note that only one subsurface soil sample was collected at location 75SB05 due to refusal at 4 feet bgs.

PREQB Comment 4: *Page 5-1, Section 5.2.1: Please revise the first sentence of the second paragraph to indicate that the five borings were advanced at SWMU 75 (not 57).*

Navy Response to PREQB Comment 4: The text has been revised accordingly.

PREQB Comment 5: *Page 6-3, Section 6.1.3: The report states that the background screening values for the fine sand/silt subsurface soil type are compared to detected soil concentrations. Please clarify whether the fine sand/silt surface soil type background screening values were also compared to detected surface soil inorganic concentrations. It appears this comparison was conducted based on a review of the different background values presented in Tables 6-1 and 6-2. Please confirm.*

Navy Response to PREQB Comment 5: The fine sand/silt surface soil type background screening values were not compared to detected surface soil inorganic concentrations. Surface soil has a separate background dataset to compare detected inorganic concentrations to (Table 2-4 of the Background Report for NAPR) Baker Environmental, Inc. (Baker). 2010. Revised Final II Summary Report for Environmental Background Concentrations of Inorganic Compounds, Naval Activity Puerto Rico, Ceiba, Puerto Rico. July 30, 2010. Therefore, it is correct that there are different background values used for inorganic comparisons in surface soil (Table 6-1) and subsurface soil (Table 6-2). The footnote on Table 6-2 in the references part of the table has been edited to reflect that the numbers used are fine sand/silt subsurface soil.

PREQB Comment 6: *Page 6-3, Section 6.2, Bullet 1: Please revise the bullet to clarify that all listed PAHs exceed only the Regional Residential Screening Level with the exception of benzo(a)pyrene which exceeds both the Residential and Industrial Screening Levels.*

Navy Response to PREQB Comment 6: The text has been revised as follows:

Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene, were reported at concentrations exceeding the USEPA Regional Residential SLs for sample 75SB01-00; benzo(a)pyrene also exceeded the USEPA Industrial SL. Sample 75SB01-00 is located along the eastern side of Building 803, also adjacent to Building 896 (an open structure which covers SWMU 74 fuel pipelines and valves).

PREQB Comment 7: Page 6-4, Section 6.2:

- a. *In addition to the information regarding the other metals that is already provided, please indicate that cadmium was detected above the ecological screening values in one soil sample and that copper was detected above the ecological screening values at one location.*

Navy Response to PREQB Comment 7a: Section 6.2 has been revised to include the following sentence:

Cadmium at 75SB01 and copper at 75SB04 exceeded the associated ecological screening value but were below the Base background screening levels.

- b. *Please clarify what is meant by “...the reported concentrations of inorganic constituents are not significantly greater than Base background screening values...” Please provide the criteria used to determine whether exceedances are significant or not.*

Navy Response to PREQB Comment 7b: The word significant has been removed from the text as no inorganic constituents exceed background other than those discussed in the previous paragraph.

- c. *Considering that semi-volatile organic compounds (SVOCs) are chemicals of potential concern for SWMU 75, please identify the basis for the final sentence in paragraph 2 which indicates that it has been interpreted that the SVOC and inorganic exceedances in the surface soils are attributed to SWMU 75 releases. Is there data that can be cited from other studies that indicate what constituents can be attributed to the fill that is present in this area?*

Navy Response to PREQB Comment 7c: The final sentence in paragraph 2 states that the SVOC and inorganic exceedances in the surface soils are *NOT* attributed to SWMU 75 releases. These constituents are not indicative of materials suspected to have been used during operation of the pump house. This justification has been added as the last sentence of Section 6.2.

- d. *Please change “SMWU” to “SWMU” in the second to last sentence of paragraph 2.*

Navy Response to PREQB Comment 7d: The text has been revised accordingly.

PREQB Comment 8: Page 6-5, Section 6.3, last paragraph:

- a. *There appears to be a typographical error in the third to last sentence of the last paragraph of this section: “...Although reported concentrations for SVOCs exceeded the associated Regional industrial SLs in the subsurface soil, the Regional Industrial SLs were not exceeded for any sample...” It appears the italicized text should be “Residential.”*

Navy Response to PREQB Comment 8a: The text has been revised accordingly.

- b. *As commented on previously, please clarify the basis for the last sentence of this paragraph, which states “...It is interpreted that these SVOC exceedances of established screening criteria are not attributed to SWMU 75 releases.” It appears that SVOC exceedances are being attributed to fill material. If so, please discuss the lines of evidence to support this assumption.*

Navy Response to PREQB Comment 8b: See Navy Response to PREQB Page-Specific Comment 7c.

- c. *Please change the reference to Table 6-1 in the second sentence of paragraph 4.*

Navy Response to PREQB Comment 8c: Section 6.3 discusses subsurface soil results. The reference has been revised to Table 6-2.

PREQB Comment 9: *Page 7-2, Section 7.2: In order to support the assumption that SVOC impacts are associated with fill material and not related to SWMU 75 releases, please consider collecting surface and subsurface fill samples in unimpacted areas for SVOC analysis to establish a anthropogenic background dataset for comparison to site data.*

Navy Response to PREQB Comment 9: Sampling and analysis of fill material in an area remote of a SWMU will be considered during development of the Full RFI work plan. Revisions to the text are not required.

PREQB Comment 10: Table 4-3:

a. *Only the preparation method for SVOCs in aqueous samples was provided under the Method Number column. Please provide the preparation method used for SVOCs in soil samples.*

Navy Response to PREQB Comment 10a: Table 4-3 has been revised to include the SVOC preparation method for soil samples.

b. *The method number provided for tin analysis in this table is 6020A. However, as per the validation reports in Appendix D, the analysis of tin was performed using method 6010B. Please clarify and revise accordingly.*

Navy Response to PREQB Comment 10b: The laboratory selected (CompuChem) for this project used Method 6010B for the analyte tin. Table 4-3 has been edited to show that Method 6010B was used for the analyte tin.

PREQB Comment 11: *Figure 2-3: Please clarify whether SWMU 75 only includes Building 803 and associated trench system or also includes Buildings 978, 976 and 896. This figure shows the boundary for SWMU 75 as including all of Building 978 and a portion of Buildings 976 and 896. If these buildings are included within the SWMU 75 boundary, please add text to the document clarifying whether investigations have been conducted or are planned for these buildings. If these building are not included as part of SWMU 75, please clarify why this figure and Figure 4-1 show that SWMU 75 includes these buildings.*

Navy Response to PREQB Comment 11: SWMU 75 includes only Building 803 and the concrete conduit. SWMU boundaries are generally arbitrary to include the area of focus and a buffer area. As described in the second paragraph of Section 2.2 Building 976 is an open-aired structure (canopy) that contains hose racks; Building 896 is an open-aired structure that covers SWMU 74 fuel pipelines and valves (Sections 4.1 and 4.3); and Building 978 is an electrical substation for Pier No. 3 (the berthing pier) located immediately adjacent to Building 803. Sections 4.3 and 5.1 have been revised to clarify the description of the electrical substation designated Building 978. Revisions to the figures are not required.

APPENDIX B, CHAIN OF CUSTODY FORMS

1. *According to the chains-of-custody, soil samples for GRO analysis were collected in 4-oz. jars with no preservative. According to the analytical method (SW-846 5035/8015B) and Chapter 4 of SW-846, these samples should be collected in preservative similar to VOC soil samples since GRO is a volatile parameter. Without the preservation, sample results are not reliable and should not be used for decision-making purposes. Please explain why these samples were not preserved and revise all*

tables and validation reports to qualify these data as rejected due to the lack of preservation, as per EPA Region 2 VOC validation guidelines.

Navy Response to PREQB Appendix B: CompuChem was the laboratory utilized for this project and they provided Michael Baker Corporation personnel 2oz and 4 oz jars for collection of samples for GRO determination. The sampling containers were provided so that CompuChem could employ SW 846 Method 5035, Section 6.2.3.

CompuChem made the decision to provide the jars for collection because the Project Action Limits were expressed as 250mg/Kg. Since 200mg/Kg is considered “High Concentration” CompuChem intended to use method 5035 for collection and analysis of samples, however the lab determined that the volatile compound concentrations in these samples were not high concentration, therefore they decided to prepare and analyze the samples using low concentration techniques.

All samples were continually maintained at 4°C ±2°C, without opening or transferring any sample until the actual time of analysis, in order to prevent/minimize volatile loss in the laboratory during sample storage prior to analysis. The sample collection jars have a Teflon seal in the cap for the prevention of loss of volatile compounds.

CompuChem used SW 846 Method 5030B, Section 6.2.1 to prepare the sample for analysis. The samples were analyzed immediately following the preparation.

CompuChem interprets the method to allow preparation options for the analysis of volatile compounds (GRO).

CompuChem determined that since SW 846 Method 5035, Section 6.2.3 was used for sampling, they could choose to use SW 846 Method 5030 for sample preparation, if, in their judgement, the samples did **not** contain high concentrations of volatile compounds. CompuChem’s determination to use method 5030 is based on the interest to provide useable data at lower concentrations.

Application of the criteria for 5030B, as stated in section 6.2 indicates that samples have a 14 day holding time from sampling to analysis. All samples analyzed by CompuChem for this project met the 14 day holding time indicated in the method.

All of the GRO results for this site were reported as non-detect. As stated in the data validation report for CompuChem SDG 1003252 “Soil samples were collected in unpreserved 4-oz jars and analyzed on days 10 and 11; therefore results were qualified as estimated and considered biased low.”

Consequently, the sample collection and preservation for GRO is appropriate and acceptable according to the referenced method. Note however, that 60 ml vial with appropriate preservative will be used for future GRO analyses of soils if this laboratory is selected for future work.

APPENDIX C, LABORATORY ANALYTICAL RESULTS

- 1. Please explain why the reported quantitation limits for the SVOCs are significantly higher than those presented in Table 4-3 of the report. Please include a discussion on the effect of the higher quantitation limits on the achievement of the risk-based standards.*

Navy Response to PREQB Appendix C: The following response was provided by the data validator (DataQual Environmental Services): We went through the SWMU 75 SVOC results for WO#1003252. The sample (75SB01-00) Form I has regular full scan SVOC analytical results and two SIM PAH analyses results in the data package. There is a neat analysis for the SIM PAH and one at a 6x dilution.

In the neat SIM PAH analysis—almost all of the PAH compounds were out of the calibration range and flagged with an “E” flag. The lab performed the dilution to try to get the PAH compounds within the top half of the calibration range. The 6x diluted SIM PAH analysis with higher SIM RLS is the better of the two. The analyses of a few of the SWMU75 samples caused instrument issues due to sample matrix.

We noticed in the case narrative for SWMU75 (WO#1003252), that the lab did not run a SIM analysis on the duplicate, 75SB01-01D because of the problems experienced with the full scan analysis & extraneous TICs (plus the matrix interference when they analyzed the parent sample by SIM 8270C (75SB01-01)).

Most of the percent moistures were fairly low so they did not affect the RLs too much, but did raise the RL when the final calculations were done.

Although the reported SVOC quantization limits are higher than those listed on Table 4-3, none are greater than the lowest associated risk-based standard (i.e., typically the USEPA Regional Residential Screening Levels [SLs] but for some constituents the selected ecological soil screening value; see Tables 6-1 and 6-2). Consequently, the higher SVOC quantitation limits did not adversely impact achievement of the risk-based standards. Section 6.4.2 has been updated to discuss this issue.