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April 14, 2011

U.S. Environmental Protection Agency - Region II  
290 Broadway – 22<sup>nd</sup> 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  
Revised Final Full RCRA Facility Investigation Work Plan for SWMU 62

Dear Mr. Everett:

Michael Baker Jr., Inc. (Baker), on behalf of the Navy, is pleased to provide you with one hard copy of the replacement pages for the Final Full RFI Work Plan for SWMU 62, Naval Activity Puerto Rico for your review and approval. These replacement pages make up the Revised Final Full RFI Work Plan for SWMU 62. Directions for inserting the replacement pages into the Final Full RFI Work Plan for SWMU 62 are provided for your use. Also included with the copy of the replacement pages is one electronic copy provided on CD of the Revised Final Full RFI Work Plan for SWMU 62. This document is being submitted in accordance with EPA comments dated February 9, 2011. The Navy responses to these comments are attached for your review. Additional distribution has been made as indicated below.

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/lp  
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. Bonnie Capito, NAVFAC Atlantic – Code EV42 (1 hard copy)  
Mr. Gloria Toro, PR EQB (1 hard copy and 1 CD)  
Ms. Wilmarie Rivera, PR EQB (1 CD)  
Mr. Felix Lopez, US F&WS (1CD)  
Mr. Brenda Smith, TechLaw, Inc. (1 CD)

**NAVY RESPONSES TO EPA COMMENT LETTER DATED FEBRUARY 9, 2011  
FINAL FULL RCRA FACILITY INVESTIGATION WORK PLAN  
SWMU 62 (FORMER BUNDY DISPOSAL AREA) DATED OCTOBER 14, 2010**

**EPA COMMENTS**

*(EPA comments are provided in italics, while the Navy responses are provided in regular print.)*

**GENERAL COMMENTS**

*Comment 3 Section 2.2.2 (Page 2-2) of the Work Plan mentions that some of the Phase I RFI soils were analyzed for Polychlorinated Biphenyls (PCBs). Neither the discussion in Section 2.2.2 nor subsequent sections of the Work Plan mention PCBs. Clarify why PCBs have been eliminated from the investigation.*

**Navy Response:** Section 2.2.2 (page 2-3) states that no organic compounds detected in surface or subsurface soil exceeded screening criteria, indicating that PCBs were either not detected or detected below screening criteria. As shown in Appendices B and C of the Work Plan, PCBs were not detected in either the Phase II ECP investigation or the Phase I RFI. Therefore, analysis of PCBs was not included in the Full RFI. Section 2.2.2 will be revised to state that because PCBs were not detected in any of the previous investigations, it is not included in the analysis program for the Full RFI.

*Evaluation of Response to EPA General Comment 3: The response partially addresses the comment. Section 2.2.2 of the Work Plan does state the PCBs were either not detected or detected below the screening criteria. It is not clearly stated, however, that PCB analysis will not be included in the Full RFI report. Revise Section 2.2.2 to include this clarification.*

**Navy Response:** Section 2.2.2 has been revised to clearly state that: “VOCs, SVOCs, pesticides, and PCBs will not be included in the analytical program for the Full RFI Investigation.”

*Comment 8 The Work Plan is lacking several elements required by EPA Requirements of Quality Assurance Project Plans (QA/R-5), dated March 2001. For example:*

- *Laboratory specific information (e.g., laboratory specific standard operating procedures [SOPs], reporting limits [RLs], quality control [QC] limits, and analytical calibration criteria) has not been provided.*
- *Specific procedures for data verification and validation have not been provided.*
- *There is no discussion on how data will be verified or validated.*
- *There is no discussion of how precision, accuracy, representativeness, comparability, completeness and sensitivity (PARCCS) measures will be incorporated into a usability report or if an evaluation of significant trends and biases will be included as part of a data quality assessment.*
- *Examples of all forms and checklists to be used have not been provided (e.g., chain-of-custody forms, sample labels, audit checklists, data validation checklists).*
- *There is no discussion of corrective action procedures.*

*Revise the Work Plan to provide the level of detail as discussed in QA/R-5.*

**Navy Response:** The Navy plans to implement this investigation at NAPR in accordance with the EPA approved Master Project Management Plan (PMP), Master Data Collection Quality Assurance Plan (DCQAP), Data Management Plan (DMP), and Master Health and Safety Plan (HASP) for NAPR (Baker, 1995. Final RCRA Facility Investigation Management Plans, Naval Station Roosevelt Roads, Ceiba, Puerto Rico. September 14, 1995. Coraopolis, Pennsylvania.) The EPA approved the work plan on September 25, 1995. These Master Plans define acceptable data requirements and error levels associated with the field and analytical portions of this investigation. Therefore, to maintain consistency with past Navy work under the Consent Agreement, this work plan has been revised using the Navy’s EPA approved Master Plans for this facility.

In response to previous comments by the EPA on Phase I RFI Work Plans for SWMUs 62 and 71 (see the April 17, 2008 letter from Baker on behalf of the Navy to the EPA); the Navy provided an evaluation of the Master Project Plans (Baker, September 14, 1995) in relation to the QA/R-5 requirements (“EPA Requirements for Quality Assurance Project Plans.” EPA/240/B-01/003. [EPA, March 2001]). Table 1 of the April 17, 2008 letter provides a map between the DCQAP sections, the work plan content and the sections required by QA/R-5 and illustrates that although there are format and minor content differences, the DCQAP is generally consistent with and includes all of the main elements required by QA/R-5. For example, data validation is discussed in Section 10 of the DCQAP; PARCCS measures are discussed in Section 4 of the DCQAP; and forms and checklists are provided in the tables and appendices of the DCQAPP. Some additional examples of forms and checklists that may be found in the DCQAP are shown in the following table:

Item	Location in the DCQAP
System Audit Checklist	Table 12-1
Test Boring Record	Appendix B – SOP F101 – Borehole and Sample Logging
Typical Monitoring Well Construction Details and Test Boring and Well Construction Records	Appendix B – SOP F103 – Monitoring Well Installation
Chain of Custody Form	Appendix B – SOP F302 – Chain of Custody
Sample Label	Appendix B – SOP F302 – Chain of Custody
Data Validation Checklists	Appendix D – Data Validation Methodologies

The analytical methods, analyte lists, detection limits, etc. may have changed to some degree since publication of the DCQAP. Consequently, the Full RFI Work Plans contain the following tables specifying the sampling and analytical program requirements so that data of sufficient quality for future risk management decisions is collected:

- Table 3-1 Summary of Sampling and Analytical Program – Environmental Samples
- Table 3-2 Summary of Sampling and Analytical Program – QA/QC Samples
- Table 3-3 Method Performance Limits

The information provided in these tables has been reviewed against screening levels and have been determined to generally meet these levels. Table 3-3 has been revised to include preparation methods. Ecological screening values are presented on Table 4-1. In addition, a table with Human Health Screening Values (Table 4-2) and NAPR Background Screening Values (Table 4-3) have been added for easy comparison to the analytical method detection limits. These quantitation limits have also been reviewed by the analytical laboratory to ensure that they can be

met. In all cases, the quantitation limits are the lowest achievable by the laboratory for the specified analytical method. These tables are then provided to the analytical laboratory subcontractor as part of their scope of work so that the laboratory is clearly aware of the analytical requirements of the project. Additionally, only laboratories capable of providing an acceptable Laboratory Quality Manual (LQM) will be selected for this project. The LQM will be provided to USEPA after selection of the analytical laboratory.

This evaluation (presented in the April 17, 2008 letter), which was approved by EPA on May 13, 2008, indicated that the Phase I RFI Work Plan structure, with reference to the 1995 Master Project Plans and inclusion of project-specific tables summarizing the sampling and analysis program for environmental and QA/QC samples and method performance limits, and other factors as discussed in the April 17, 2008 letter, when taken together provide the information and guidance necessary for the project team to generate good quality data and to use that data for developing risk management based recommendations and decisions. The structure of the Full RFI Work Plans for SWMU 62 is identical to the Phase I RFI structure and therefore meets the QA/R-5 QAPP requirements.

***Evaluation of Response to EPA General Comment 8:** The response partially addresses the comment. However, because the laboratory has not been selected, laboratory specific standard operating procedures (SOPs) and quality control (QC) limits have not been included in the Final Work Plan. Additionally, Table 3-3 states that the quantitation limits (QLs) listed for soil are based on wet weight and that the quantitation limits calculated by the laboratory, calculated on dry weight basis, will be higher. Since screening levels are based on dry weight calculations, it is unclear whether the chosen laboratory's dry weight QL will be able to meet screening levels. It is recommended that the laboratory quantitation limit be at least five to ten times lower than the screening level to account for moisture content in the sample and inherent variability of analytical results at the quantitation limit. Ensure that when a laboratory is selected, laboratory specific SOPs and QC limits are included and that the laboratory will be able to meet screening levels.*

**Navy Response:** The comment is noted. As indicated in our previous response, to help ensure that screening levels are met, required quantitation limits are provided to the laboratory as part of their contractual scope of work. Upon the selection of the subcontracted analytical laboratory for this investigation, laboratory specific SOPs and QC limits will be reviewed to confirm they will be able to meet the applicable screening levels.

*Comment 14* The Work Plan indicates surface soils from 0 to 1ft below ground surface (bgs) and subsurface soils from 1 to 3 ft bgs and 5 to 7 ft bgs will be collected. However, the Work Plan does not discuss how representative sub samples of the intervals will be obtained for analysis. Revise the Work Plan to discuss field and laboratory subsampling procedures.

**Navy Response:** Field and laboratory subsurface sampling procedures are discussed in Section 3.1 of the Work Plan. Specifically, the second paragraph of Section 3.1 states that subsurface soil samples will be collected using a 66DT Geoprobe® drill rig capable of direct push and augering and that soil samples will be collected continuously from the ground surface to refusal using a 4-foot long Macro Core Sampler to advance the borings. The text also states that all pertinent sampling information (e.g., lithology, water occurrence, photoionization detector [PID] measurements and sampling information) will be recorded in a field logbook. The third paragraph states that all subsurface soil samples will be analyzed for Appendix IX metals.

Finally, paragraphs six and seven describe the process for sample shipment to the laboratory, analysis at the laboratory, and subsequent third-party data validation.

**Evaluation of Response to EPA General Comment No. 14:** *The response does not appear to be adequate, as it does not discuss how representative subsamples of the intervals will be obtained for analysis. Although, the response provides information on boring advancement/sample collection (Marco Core Sampler), information that will be collected during the drilling process (lithology, water occurrence, PID readings), sample analysis, shipping, and data validation, it does not provide the exact procedure for collecting representative subsamples. Revise the Final Work Plan to clarify the methods that will be used to obtain representative subsamples from each interval (e.g., mixing of soil from each interval in a stainless steel bowl with a stainless steel spoon, etc.) and discuss applicable decontamination procedures that will be implemented between sample collection.*

**Navy Response:** Section 3.1 of the Work Plan will be expanded to include a discussion of soil sample collection procedures for both surface and subsurface intervals. Specifically, the following will be added to Section 3.1: “Individual sample intervals, whether surface or subsurface, will be thoroughly mixed using disposable pie pans and disposable stainless steel spoons. The use of disposable equipment will eliminate decontamination of equipment and the potential for cross contamination between sample intervals. Equipment rinsate samples will be collected of the disposable equipment used, including pie pans and disposable stainless steel spoons.”

## **SPECIFIC COMMENTS**

*Comment 2 Section 3.3.3, Investigation Derived Waste (IDW) Management, Page 3-4: More detailed IDW sampling procedures should be provided. The Work Plan should indicate how each aliquot of IDW will be collected for soil and water, and how these aliquots will be combined for the composite sample. In addition, the Work Plan should discuss how representative samples are obtained from the composite drum sampling. Revise the Work Plan to provide this information.*

**Navy Response:** Section 3.3.3 will be revised to include the following information:

“A composite soil sample will be compiled from individual discrete (grab) samples of equal volume collected from each of the 55-gallon drums of containerized IDW soil. Each individual discrete soil sample will be placed into a decontaminated stainless-steel bowl (or other appropriate container) and thoroughly homogenized prior to filling the appropriate laboratory provided sample containers. However, the IDW grab sample for VOC analysis will be collected directly from soil exhibiting the highest potential impact based on visual and olfactory observations and screening results obtained during the investigation. The soil samples will be analyzed for toxicity characteristic leaching procedure (TCLP) metals, and reactivity, corrosivity, and ignitibility (RCI) as shown in Table 3-2, using methods presented in Table 3-3.

The IDW composite water samples will be collected similar to the soil composite sample with the exception that the individual discrete (grab) samples of equal volume collected from each of the 55-gallon drums of containerized IDW water will be placed directly into the appropriate laboratory provided sample containers. The water samples will be analyzed for Appendix IX metals and RCI as shown in Table 3-2, using methods presented in Table 3-3.”

**Evaluation of Response to EPA Specific Comment 2:** *The response partially addresses the comment. The response indicates that the composite soil sample collected from each drum of containerized investigation-derived waste (IDW) soil will be analyzed for Toxicity Characteristic Leaching Procedure (TCLP) metals, and reactivity, corrosivity, and ignitability for purposes of determining if the IDW should be disposed as a hazardous waste. However, the response does not indicate how the soils will be disposed if the soils contain hazardous constituents at concentrations greater than risk-based levels, but below the TCLP regulatory level. Revise the Final Work Plan to discuss the disposal options for the IDW soils if risk-based concentrations are exceeded.*

**Navy Response:** The following will be added to Section 3.3.3: “Upon receipt of the IDW composite samples for soil and water media, the data will be evaluated and a Generator Waste Profile Sheet completed for submittal to a chosen disposal facility. The waste profile will categorize the waste as hazardous or non-hazardous and further define if the wastes contain PCBs, pesticides/herbicides, infectious, or any other specialized waste characteristics. If the sample exceeds the RCRA hazardous waste characteristics then it will be considered hazardous and disposed in an approved state-side hazardous waste facility. If the RCRA hazardous waste characteristics are not exceeded in the sample, then the IDW will be disposed as a non-hazardous waste following the selected facility’s permit requirements. The disposal facility will not evaluate the waste based on an exceedance of risk based concentrations.”

*Comment 5 Section 4.0, Reporting, Pages 4-1 through 4-4: This section does not indicate that a data quality assessment (DQA) will be included in the final report. Revise this section to specify that a DQA will be included in the final report. Further, revise the Work Plan to discuss what will be included in the DQA.*

**Navy Response:** All data from the laboratory will be certified by a Puerto Rican Chemist and laboratory data will be validated to ensure data usability. Only usable data will be included in the evaluation and the conclusions and recommendations sections of the report. Data validation reports will be included as an appendix to the Full RFI report and will discuss:

- Overall Evaluation of the Data
- Potential Usability Issues
- Data Completeness
- Technical Holding Times
- Initial and Continuing Calibrations
- Method and QC Blanks
- Laboratory Control Samples
- Matrix Spikes
- Quantitation and Data Qualifications

**Evaluation of Response to EPA Specific Comment 5:** *The response appears adequate. However, Section 4.0 has not been revised to address the response. Revise Section 4.0 to include the response.*

**Navy Response:** The above referenced information has been incorporated into Section 4.6 – Analytical Results of the Work Plan.

*Comment 9 Table 3-1, Summary of Sampling and Analytical Program - Environmental Samples: This table indicates that subsurface field duplicates and matrix spike/matrix spike duplicates will be collected from the 5 to 7 ft bgs interval. However, Section 3.1 of the Work Plan indicates that previous studies show that samples from 5 to 7 ft bgs did not exhibit metals contamination. It is suggested that field QC samples be collected from the 1 to 3 ft bgs interval as the associated results will be more useful in evaluating the site conditions where higher concentrations of metals are expected (e.g., heterogeneity, interferences, etc.).*

**Navy Response:** Table 3-1 will be revised to change the collection of the QC samples (field duplicate and matrix spike/matrix spike duplicate) from the 1 to 3 ft bgs interval.

*Evaluation of Response to EPA Specific Comment 9: The response appears adequate. However, Table 3-1 has not been revised to indicate that duplicate subsurface samples will be collected from 1.0 to 3.0 feet (ft) below ground surface (bgs), rather than 5.0 to 7.0 ft bgs. Revise Table 3-1 to include the change.*

**Navy Response:** Table 3-1 has been modified to show the QA/QC samples collected from 1.0 to 3.0 ft bgs. Specifically, sample 62SB13-01, the duplicate sample 62SB13-01D, and the matrix spike/matrix spike duplicate sample 62SB13-01MS/MSD will be collected from the 1 to 3 ft bgs depth interval rather than from the 5 to 7 ft bgs depth interval.

*Comment 12 Table 3-3, Method Performance Limit: The Work Plan does not specify how analytes with reporting limits that exceed screening levels will be evaluated or qualified. This is particularly important since the RLs in Table 3-3 are based on wet weight results, and they will be elevated when corrected for dry weight. Finally, it is unclear if the laboratory chosen will be able to meet the reporting limits presented in the table. Revise the Work Plan to present the laboratory specific reporting limits, indicate which analytes have screening levels below the reporting limits and clarify how results will be evaluated and/or qualified if screening levels are below the reporting limit.*

**Navy Response:** The Navy is aware that some of the reporting limits exceed the screening levels. The analytical laboratory chosen for analyzing data provide the lowest reporting limits possible. The information provided in Table 3-3 has been reviewed against project-specific screening levels and have been determined to generally meet these levels. The quantitation limits have also been reviewed by the analytical laboratory to ensure that they can be met. In all cases, the quantitation limits are the lowest achievable by the laboratory for the specified analytical method. The project-specific screening values are then provided to the analytical laboratory subcontractor as part of their scope of work so that the laboratory is clearly aware of the analytical requirements of the project.

It is noted that the risk assessments, conducted as part of the CMS, will evaluate non-detected chemicals. Specifically, the ERA will quantify risks for non-detected chemicals. Non-detected chemicals with maximum reporting limits greater than ecological screening values will be identified as ecological COPCs in Step 2 of the SERA and undergo additional evaluation in Step 3a of the BERA. The HHRA will qualitatively evaluate non-detected chemicals as an uncertainty.

**Evaluation of Response to EPA Specific Comment 12:** See the Evaluation of Response to General Comment 8.

**Navy Response:** The comment is noted. As indicated in our previous response, to help ensure that screening levels are met, required quantitation limits are provided to the laboratory as part of their contractual scope of work. Upon the selection of the subcontracted analytical laboratory for this investigation, laboratory specific SOPs and QC limits will be reviewed to confirm they will be able to meet the applicable screening levels.

*Comment 14 Appendix C Summary of Phase I RFI Analytical Results- Thallium and zinc are not included in the list of metals analyzed in surface or subsurface soil samples. Yet, Table 4-1, Ecological Soil Screening Values, gives a soil screening value for both analytes. The screening values for thallium and zinc should be removed from Table 4-1 if neither compound will be included in future analyses. However, a reason needs to be provided for the removal of these two metals. Amend the text accordingly.*

**Navy Response:** Appendix C presents a summary of the detected laboratory results for analyses conducted during the Phase I RFI. Thallium was not detected in any of the surface or subsurface soil samples and therefore, does not appear on the Appendix C table. However, zinc was inadvertently omitted and will be added back to the table to correct the discrepancy. It should be noted that none of the zinc concentrations detected during the Phase I RFI exceeded any of the applicable screening criteria.

*Evaluation of Response to EPA Specific Comment 14: The response partially addresses the comment. The response states that zinc was inadvertently omitted from the laboratory results and has been added back into Appendix C. The soil screening value for Thallium, however, is still included in Table 4-1. It should be removed because thallium was not detected in any surface or subsurface soil samples and therefore does not appear in Appendix C. A screening value for thallium is not needed. Revise Table 4-1 by removing the screening value for thallium.*

**Navy Response:** Thallium will be retained in Table 4-1 since it is an Appendix IX metal, which is the metals suite that will be analyzed for in the Full RFI; see Section 3.1 of the Work Plan. If thallium is detected during the Full RFI, Table 4-1 will provide the screening criteria.

*Comment 15 Appendix C Summary of Phase I RFI Analytical Results- Several of the “Selected Ecological Surface Soil Screening Values” in Appendix C differ from the ecological soil screening values listed in Table 4-1. The lowest-available benchmark for plants, soil invertebrates, avian herbivores, avian ground insectivores, avian carnivores, and mammalian herbivores was selected as the soil screening value for each analyte and are presented in Table 4-1. The screening values in Appendix C for beryllium, cadmium, chromium, copper, lead, silver, and vanadium all exceed the values listed in Table 4-1. The selected ecological surface soil screening values used in Appendix C for soil comparison should be the same as those presented in Table 4-1. In addition, ensure that the lowest soil screening value is used in the future assessment of soil data from SWMU 62. Amend the text accordingly.*

**Navy Response:** The “Selected Ecological Surface Soil Screening Values” in Appendix C represent screening values that were current at the time the Phase I RFI was conducted. The ecological screening values presented in the Full RFI Work Plan are the screening values to be used moving forward. However, it should be noted that all applicable screening values will be

updated as necessary at the time the Full RFI is conducted. No revisions to the document are necessary.

**Evaluation of Response to EPA Specific Comment 15:** *The comment is noted. It is recommended, however, to explain in the Final Work Plan why some of the screening values in Table 4-1 differ from those shown in Appendix C. Add a footnote path to both Table 4-1 and Appendix C based on the Navy response to Specific Comment 15 to clarify this issue.*

**Navy Response:** The Navy offers the following points of clarification relative to this comment. In a comment letter dated August 27, 2009, the Puerto Rico Environmental Quality Board (PREQB) submitted the following comment on the [Draft Full RCRA Facility Investigation Report for SWMU 9 \(Area B, Tank 214 Area\)](#) dated July 14, 2009:

“Use of the Lowest Available EcoSSLs in COC Screening of ERA Steps 2 and 3a. Although the Final RFI Work Plan dated February 28, 2008 had stated that surface soil COCs would be selected using Eco-SSLs, where available, it did not specify that only the EcoSSLs for plants and invertebrates would be applied selectively, rather than using the lowest of all available Eco-SSLs. USEPA’s original intent in developing the Eco-SSLs was for the lowest available of all Eco-SSLs for plants, soil invertebrates, birds, and mammals to be used in COC selection. Since avian and mammalian Eco-SSLs are often lower than plant and soil invertebrate EcoSSLs, please apply the lowest of all available EcoSSLs during COC selection of the new ERA using the cumulative analytical dataset. This will assure that no soil COCs that pose a screening-level risk to wildlife receptors are omitted prematurely during Steps 2 and 3a of the ERA.”

The Navy response to this comment was as follows:

“The Navy partially agrees with this comment. In addition to ecological soil screening levels (Eco-SSLs) for terrestrial plants and invertebrates, the following eco-SSLs also will be considered for use as soil screening values:

- Eco-SSLs for avian herbivores
- Eco-SSLs for avian ground insectivores
- Eco-SSLs for avian carnivores
- Eco-SSLs for mammalian herbivores

The Navy does not believe it’s appropriate to use Eco-SSLs for mammalian ground insectivores or mammalian carnivores. In the case of Eco-SSLs for mammalian ground insectivores, there are no mammalian ground insectivores on Puerto Rico (insectivorous mammals are limited to aerial insectivores [bats]). As discussed in [Guidance for Developing Ecological Soil Screening Levels](#) (USEPA, 2005) aerial insectivores and arboreal insectivores were excluded from Eco-SSL development because they were not considered appropriate (i.e., they do not have a clear or indirect exposure pathway link to soil [indirect exposure pathway involves ingestion by carnivores of prey that have direct contact with soil]). With regard to Eco-SSLs for mammalian carnivores, there are no carnivorous mammals on Puerto Rico. Furthermore, with the exception of bats, the terrestrial mammals represented by potentially complete exposure pathways are limited to nonindigenous, nuisance species (i.e., Norway rat, black rat, and mongoose) that have been implicated in the decline of native reptilian and bird populations. Eco-SSLs for mammalian herbivores are considered

appropriate for consideration as soil screening values based on the presence of fruit-eating and nectivorous bats on Puerto Rico.”

The Navy has applied this approach to soil screening value development for all Phase I and Full RFI investigations at NAPR, thereby explaining why some of the soil screening values included within Appendix C do not match the soil screening values presented in Table 4-1. Section 4.6.1 will be revised to explain why some of the screening values in Table 4-1 differ from those shown in Appendix C as follows:

“It is noted that the approach described above for selecting soil screening values based on Eco-SSLs was adopted for Phase I and Full RFIs at NAPR based on Puerto Rico Environmental Quality Board (PREQB) comments dated August 27, 2009 on the Draft Full RCRA Facility Investigation Report for SWMU 9 (Area B, Tank 214 Area) dated July 14, 2009. Prior to adopting this approach, only Eco-SSLs for terrestrial plants and invertebrates were considered for soil screening value development. As such, soil screening values for several chemicals listed in Table 4-1 differ from the soil screening values used in the Revised Final Phase I RCRA Facility Investigation Report for SWMU 62 (Baker, 2010a; see Appendix C).”

In addition, a footnote will be added to Appendix C and Table 4-1 explaining the differences.

Footnote for Table 4-1:

Ecological surface soil screening values are based on the minimum of plant, invertebrate, avian ground insectivore, avian herbivore, avian carnivore, and mammalian herbivore Eco-SSL concentrations

Footnote for Appendix C:

Ecological surface soil screening values based on the minimum of plant and invertebrate Eco-SSL concentrations only

## **PREQB COMMENTS**

### **II. PAGE-SPECIFIC COMMENTS**

PREQB Comment 4. Page 3-2, Section 3.1, Paragraph 1:

*The text states that the selection of the 1 to 3 and 5 to 7 feet bgs depth intervals for subsurface soils was based on the results from sample 62SB06 which showed metals contamination at 1 to 3 feet bgs but not at the subsequent depth interval of 5 to 7 feet bgs. However, the results in Appendix C show that barium did exceed the ecological screening criteria as well as the background screening values at the 5 to 7 feet bgs depth interval. Please clarify and revise the text accordingly.  
Please add that field observations will include identification of debris observed in soil borings, if possible.*

**Navy Response:** As stated in response to PREQB Page-Specific Comment number 3, subsurface soil samples collected below three feet are not included for comparison to ecological screening

values because soil deeper than three feet is not considered environmentally available to potential ecological receptors. No revisions to the document are required this portion of the comment. However, Section 3.1 (page 3-2, paragraph 1) will be revised to include that field observations will include identification of debris observed in soil borings (as applicable).

***PREOB Evaluation of Response:*** *The text of the work plan states that contamination was not encountered at the depth interval of 5 to 7 feet. Please clarify how it was determined that contamination was not present at this depth. If no criteria were used to determine whether soil at this depth is contaminated, it is unclear how it was determined that soil was not contaminated.*

**Navy Response:** Soil samples collected from the 5 to 7 foot depth interval were compared to Regional Screening Levels (RSLs) for Residential and Industrial Soil (note that Selected Ecological Surface Soil Screening Values are not applicable to this depth interval). The detected barium concentration in the reference sample, 62SB06-03 was 430 mg/kg, which is well below the RSL for Residential Soil of 1,500 mg/kg or the RSL for Industrial Soil of 19,000 mg/kg. Evaluation of the Phase I data in relation of screening levels is discussed in detail in the Revised Final Phase I RFI Report (Baker, 2010a). No revisions to the text are required.

***PREQB Evaluation of Response (via email from Wilmarie Rivera Otero on March 21, 2011):*** *Please add text discussing the potential for contaminants to leach to groundwater. As all groundwater is considered potable in Puerto Rico (refer to Puerto Rico's Water Quality Standard Regulation dated March 2010), a demonstration that impacts below exposure depths will not adversely impact groundwater is needed to support the statement that no contamination is present at the depth interval of 5 to 7 feet.*

**Navy Response:** As agreed during a conference call between PREQB (Wilmarie Rivera Otero), BRAC PMO (Mark Davidson) and Baker (Mark Kimes, Rick Aschenbrenner and Joe Burawa) conducted on April 8, 2011, a discussion of the potential impacts to groundwater from the site will be included in the Full RFI Report for SWMU 62 . The first paragraph of Section 4.6 - Analytical Results of the Work Plan will be revised as follows:

This section of the Full RFI Report will present analytical results of the samples collected from environmental media at the SWMU and interpretation of the data to characterize site contamination. Human health and ecological screening values along with background screening values will be used to identify the presence and extent of potential contaminants of concern. Note that although human health and ecological risk assessments will not be conducted as part of the Full RFI, potential impacts to groundwater will be discussed as part of the evaluation and interpretation of the analytical results (human health and ecological risk assessments may be conducted as part of a future CMS, if necessary).