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April 17, 2008

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 N62470-07-D-0502
IQC for A/E Services for Multi-Media
Environmental Compliance Engineering Support
Delivery Order (DO) 0002
U.S. Naval Activity Puerto Rico (NAPR)
EPA I.D. No. PR2170027203
Revised Final Phase I RCRA Facility Investigation Work Plan for SWMU 62
Revised Final Phase I RCRA Facility Investigation Work Plan for SWMU 71

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 Phase I RCRA Facility Investigation Work Plan for SWMU 62, Naval Activity Puerto Rico and the Final Phase I RCRA Facility Investigation Work Plan for SWMU 71, Naval Activity Puerto Rico, for your review and approval. These replacement pages make up the Revised Final Phase I RCRA Facility Investigation Work Plans for SWMUs 62 and 71. Directions for inserting the replacement pages into the Final Phase I RCRA Facility Investigation Work Plans for SWMUs 62 and 71 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 Phase I RCRA Facility Investigation Work Plans for SWMUs 62 and 71, Naval Activity Puerto Rico.

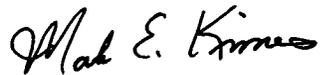
These documents are being submitted in accordance with the EPA comments dated February 26, 2008. The Navy responses to these comments are attached for your review. Additional distribution has been made as indicated below.

Baker has received funding from the Navy to conduct the field work and reporting for the CMS Investigations at SWMUs 56, 61, 69, and 74 and the Phase I RFI investigations at SWMUs 62, 71, and 78. The field work for all seven of these SWMUs is being conducted under one mobilization over a two month period. Mobilization for this work is scheduled to occur on April 27, 2008 beginning with the field work for SWMUs 56, 69, and 74. The field work for SWMUs 61, 62, 71, and 78 is scheduled after completion of field work at SWMUs 56, 69, and 74, which is estimated to be around June 5, 2008. Therefore the Navy is requesting an expedited review of the minor modifications to the enclosed work plans for SWMUs 62 and 71 in order to have approval prior to initiating the field work.

Mr. Adolph Everett, P.E.
U.S. Environmental Protection Agency, Region II
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If you have questions regarding this submittal, please contact Mr. David Criswell at (843) 743-2130.

Sincerely,
MICHAEL BAKER JR., INC.



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 (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 for Admin Record)
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. Willmarie Rivera, PREQB (1CD)
Mr. Julio I. Rodriguez Colon, PR EQB (1 hard copy and 1 CD)
Mr. Felix Lopez, US F&WS (1CD)
Mr. Andrew Dorn, TechLaw, Inc. (1 CD)

NAVY RESPONSES TO EPA COMMENT LETTER DATED FEBRUARY 26, 2008

**RESPONSES TO COMMENTS AND PHASE I RFI WORK PLANS
FOR SWMUS 57, 60, 62, 67, 70, 71, AND 75**

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

GENERAL COMMENT

EPA General Comment

EPA has completed its review of the Responses to Comments and Phase I RFI Work Plan submitted on December 20, 2007 by Baker Environmental on behalf of the Navy. These Responses and Revised Work Plans were submitted to address comments given with EPA's letter of October 18, 2007.

Based upon our reviews, which included reviews by our consultant TechLaw Inc, EPA has determined that several items need to be clarified before EPA can fully approve these work plans.

Firstly, a general concern regarding all seven work plans is that the Navy has not included an updated Quality Assurance Project Plan (QAPP) with the RFI Work Plans. Rather, the Navy indicates that the RFI work plans have been revised to follow the procedures in the September 1995 RFI "Master Management Work Plan", including the Data Collection Quality Assurance Plan (DCQAP), Health and Safety Plan, and other Plans in the EPA approved, September 1995 RCRA Facility Investigation Master Management Plans for the facility. However, it should be noted that the 1995 RFI Master Plans were prepared prior to the Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP), dated March 2005. EPA and TechLaw have not reviewed the 1995 Master RFI Plans for their consistence with procedures required under the 2005 UFP-QAPP.

Previous Navy responses on this issue have indicated that the general elements required under the UFP-QAPP were included in the 1995 Master RFI Management Plans DCQAP. This approach may be acceptable; however, additional detail about the 1995 Master RFI DCQAP should be presented in the Navy's responses. Alternatively, more detailed references to the specific components of the DCQAP need to be provided so that EPA can confirm the QA elements required under the UFP-QAPP are present in the Master RFI DCQAP. Without this additional detail, it is unclear from the Navy's responses whether the data quality produced by following the Master RFI DCQAP will be adequate to support the required risk management or remedial design decisions, in accordance with the UFP-QAPP procedures.

Certain federal facilities that initiated investigations before the adoption of the UFP-QAPP guidance have followed quality assurance plans that were not drafted in accordance with the UFP-QAPP procedures, yet have produced data of sufficient quality to support the risk management decisions.

Therefore, rather than re-evaluate the quality assurance program followed for prior RCRA investigations at NAPR, EPA requests that the Navy either revise their Response to Comments to

discuss in more detail how the 1995 Master RFI DCQAP will assure that data of sufficient quality, i.e., consistent with requirements of the 2005 UFP-QAPP, is achieved under these Phase I RFI work plans; or revise those portions of the 1995 Master RFI DCQAP, as necessary, to make it consistent with requirements of the 2005 UFP-QAPP.

Navy Response to EPA General Comment:

EPA's General Comment dated October 18, 2007 indicates that the QAPP submitted as an appendix to the Draft RFI Work Plans for SWMUs 57, 60, 62, 67, 70, 71 and 75 does not meet the specific requirement provided in QA/R-5. The Navy concurs with this comment. The Navy also concurs with EPA's comment (February 26, 2008) that further explanation may be needed to clarify the adequacy of the referenced DCQAP in the revised RFI Work plans and provides the following revision to our previous response to this comment:

The Draft RFI Work Plans for SWMUs 57, 60, 62, 67, 70, 71, and 75 were originally prepared with the understanding that an as yet undetermined third party would be responsible for implementation of the activities; consequently, the draft Work Plans were written in an open-ended fashion to allow the third party entity the flexibility of identifying DQOs, SOPs, and QAPP requirements for USEPA approval. However, since the Navy plans to implement the Work Plans prior to transfer of the property to a third party, the QAPP "template" that was appended to the draft Work Plans for SWMUs 57, 60, 62, 67, 70, 71, and 75 has been deleted and references to the Data Control Quality Assurance Plan (DCQAP), as discussed below, have been included in its place.

The Navy has implemented previous investigations at NAPR in accordance with the EPA approved Master Project Plans, which include the Project Management Plan (PMP), Data Collection Quality Assurance Plan (DCQAP), Data Management Plan (DMP), and Health and Safety Plan (HASP) for NAPR. These Master Plans, and specifically, the Final Data Collection Quality Assurance Plan (DCQAP) (Baker, September 14, 1995) 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, the Work Plans for SWMUs 57, 60, 62, 67, 70, 71, and 75 have been revised to include references to the Navy's EPA approved Master Project Plans for this facility.

The Final DCQAP portion of the Master Project Plans was prepared following guidance given in:

- Interim Final RCRA Correct Action Plans, USEPA, EPA/530-SW-88-028, June 1988; and
- Interim Final RCRA Facility Investigation Guidance – Volume 1, USEPA, EPA/530/SW-89-031, May 1989.

Table 1 provides a map between the DCQAP sections and the sections required by "EPA Requirements for Quality Assurance Project Plans" (QA/R-5) (EPA 2001). Table 1 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. As stated in part from EPA General Comment: "The UFP-QAPP was developed using the same standard as that used for development of QA/R-5. QAPPs developed in accordance with UFP-QAPP will meet the requirement of QA/R-5." Similarly, it is assumed that a QAPP meeting the requirements of

QA/R-5 (i.e., DCQAP) will also meet the quality goals of the UFP-QAPP.

Of particular interest when considering overall data quality are the development of DQOs, the use of standard operating procedures for data collection and analysis, and the use of appropriate analytical methods.

DQOs

As we indicated in our response to TechLaw General Comment 8 (via EPA letter dated October 18, 2007) on the Draft Phase I RFI Work Plan for SWMU 57 (and similar comments on RFI work plans for other SWMUs), although the seven step DQO process was not rigorously applied, elements essential to the process (with the exception of statistically determining the number of samples) have been considered in the development of the sampling design. The RFI Work Plans are developed with input from our human health and ecological risk assessors to assure that the investigation will provide the data that is needed for risk management decisions. The human health and ecological risk assessors review the sampling (number, frequency, location and collection methods) and analytical programs (analytical methods, parameter lists, detection limits) and compare applicable screening values to method performance limits to maximize the usability of the resultant data.

SOPs

The standard operating procedures for field data acquisition and laboratory analysis may have changed to some degree since publication of the DCQAP. The SOPs are routinely updated to reflect the currently used equipment and accepted procedures. The most current versions of the SOPs referenced in the RFI Work Plans for SMWUs 57, 60, 62, 67, 70, 71, and 75 will be used to assure consistency in data collection and analysis. Any specialized or site-specific procedures are discussed in detail in the text of the Work Plan. The most current Baker SOPs for the typical tasks associated with these work plans, i.e., Borehole and Sample Logging (SOP F101), Soil and Rock Sample Acquisition (SOP F102), Monitoring Well Installation (SOP F103), Decontamination of Heavy Equipment and Associated Sampling Equipment (SOP F501), and Decontamination of Sampling and Monitoring Equipment (SOP F502) were submitted with the Full RFI Work Plan for SWMU 9 (February 29, 2008). The SOP associated with sediment sampling for SWMU 60 and SWMU 70 was also provided on February 29, 2008.

Analytical Methods

Similar to the SOPs, the analytical methods, analyte lists, detection limits, etc. may have changed to some degree since publication of the DCQAP. Consequently, the current RFI Work Plans for SWMUs 57, 60, 62, 67, 70, 71, and 75 contain the following tables specifying the sampling and analytical program requirements so that data of sufficient quality for risk management decisions is collected. As discussed above, these tables have been reviewed by the human health and ecological risk assessors to ensure acceptable data quality.

- **Table 3-1 Summary of Sampling and Analytical Program – Environmental Samples** – this table specifies media that is to be sampled, the number of environmental samples per media, the number of sample related QA samples that are required (i.e., duplicates, matrix spike and matrix spike duplicates) and the associated analytical requirement for

each sample. In some Work Plans, the information from Table 3-3 may also be provided on Table 3-1.

- **Table 3-2 – Method Performance Limits** – This table specifies the required parameter/analyte list for each analytical suite (e.g., volatiles, metals, etc.), the required analytical method and the contract required quantitation limits that are needed to produce data of sufficient quality for risk management based decisions.
- **Table 3-3 – Summary of Sampling and Analytical Program – QA/QC and IDW Samples** – This table may be combined with Table 3-1 in some Work plans. This table specifies the type and number of non-environmental media QA/QC samples (e.g., blanks and rinsates) and IDW samples that are required for collection during the field investigation and the associated analysis

The information provided in these tables has been reviewed against the screening levels and have been determined to generally meet these levels. 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 laboratory LQM may be provided on request (after selection of the analytical laboratory).

These elements: consistency with the substantive elements of QA/R-5; following the planning elements of the DQO process; using current data acquisition SOPs; and, providing current sampling and analytical requirements tables within the current RFI Work Plans for SWMUs 57, 60, 62, 67, 70, 71, and 75, 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.

TECHLAW COMMENTS ON FINAL PHASE I RCRA FACILITY INVESTIGATION WORK PLAN FOR SWMU 60 DATED DECEMBER 20, 2007

(TechLaw comment is provided in italics while the Navy response is in regular print)

SPECIFIC COMMENT

TechLaw Specific Comment 1

1. *TechLaw Specific Comment 4: Table 3-3: Summary of Sampling and Analytical Program QA/QC and IDW Samples: The response to TechLaw's Specific Comment 4 is inadequate. The comment requested that one of the two total metals columns be revised to identify dissolved metals. The response was only to eliminate the duplicate total metals column. Revise Table 3-3 to include a column for dissolved metals.*

Navy Response to TechLaw Comment 1: Disagree with comment, there is no need for dissolved metals analysis on this table since these samples are equipment rinsates and field blanks which are utilizing laboratory grade deionized water. The analysis for dissolved metals analysis is not needed on these samples. No modifications to Table 3-3 are required.

**TECH LAW COMMENTS ON FINAL PHASE I RCRA FACILITY INVESTIGATION WORK
PLAN FOR SWMU 62 DATED DECEMBER 20, 2007**

(TechLaw comment is provided in italics while the Navy response is in regular print)

SPECIFIC COMMENT

TechLaw Comment 1

1. *Navy's Response to TechLaw Specific Comment 1, Section 3.1, Soil Sampling and Analysis Plan, Page 3-2: The Navy's response to this comment is inadequate. The combined responses to General Comment 1 and Specific Comment 1 state that the previously noted features such as piles of charcoal, metal and building materials appear to be overgrown, and that samples are proposed to delineate the 1958/1961 polygons. Section 3.1 of the Work Plan reiterates the sampling that is targeted toward assessing the polygons. While this approach appears to be adequate based on the current data, additional sampling should be allowed if evidence of piled waste materials are observed during the Phase I RFI. Revise the sampling plan to allow for additional sampling based on observed field conditions. Sampling should be required near any visual evidence of current or former stockpiling of waste materials.*

Navy Response to TechLaw Comment 1: Additional text will be added on page 3-2 to explain that proposed sample locations may be relocated or additional samples may be included near waste material piles such as charcoal, metal or building materials if visual observations during the field investigation indicate the need.

**TECH LAW COMMENTS ON FINAL PHASE I RCRA FACILITY INVESTIGATION WORK
PLAN SWMU 67 DATED DECEMBER 20, 2007**

(TechLaw comment is provided in italics while the Navy response is in regular print)

GENERAL COMMENT

TechLaw General Comment 7

7. *The response to TechLaw General Comment 7 is potentially misleading. The response indicates that petroleum hydrocarbons generally do not mobilize metals in soils; however, the more water soluble components of petroleum (such as benzene, toluene, etc.) are well known to significantly change groundwater geochemistry, resulting in lower oxidation/reduction potentials, pH decreases, and conditions that mobilize metal constituents. For example, oxidation of hydrocarbons produces organic acids and phenols along with the reduction of iron oxides (FeIII)*

to produce ferrous ions (FeII). Because sorption of metals (such as lead and arsenic oxides) to iron oxides is a major mechanism decreasing the mobility of metals in soil and groundwater, reduction of the iron oxides defeats this mechanism and releases the metals into solution, as well as increasing the soluble iron (FeII) concentrations in groundwater. The Navy response that "petroleum hydrocarbons are immiscible in water" is misleading as it does not address the fact that they are mixtures of hydrocarbon constituents, some of which can significantly diffuse out of the hydrocarbon matrix and dissolve into groundwater. Revise the Work Plan text and/or the resulting investigation report to discuss this condition.

Navy Response to TechLaw General Comment 7: The Navy agrees with this comment. However, no revision to the Work Plan is necessary in Section 2.2, from where the original TechLaw General Comment No. 7 was made. The scope of the Work Plan includes the collection of dissolved oxygen and oxidation-reduction potential readings in the groundwater at the temporary wells (Section 3.3). The evaluation of these results in the Phase I RFI report, along with the analytical results for the groundwater, will include a determination of whether or not the aquifer is in a reduced state, and whether or not dissolution of hydrocarbon constituents has occurred. If the aquifer is in a reduced state, it is acknowledged that the hydrocarbon constituents of petroleum may act as electron donors, thereby getting oxidized in the process, and causing the reduction of certain metals such as Fe(III) to the more mobile Fe(II). Therefore, in the report, the potential mobilization of certain inorganics will be noted, but all discussions and conclusions of potential inorganic COPCs will be made within the context of existing background concentrations of inorganics at NAPR.

TECHLAW COMMENTS ON FINAL PHASE I RCRA FACILITY INVESTIGATION WORK PLAN SWMU 71 DATED DECEMBER 20, 2007

(TechLaw comments are provided in italics while the Navy responses are in regular print)

GENERAL COMMENT

TechLaw General Comment 3

- 3. The response to TechLaw General Comment 3 is not adequate. The response states that the drums were found in the intersection of the 1976 and 1977 polygons, and that several boring locations are downgradient of this location. However, no borings have been proposed to the west of the building. Due to the limited background information regarding the original topography and the overall extent of the drum area, as well as the lack of information provided about groundwater flow in the text and in the figures, an additional boring should be advanced to the west of the polygon overlap within the area covered by the eastern corner of the parking lot. This boring should be completed along the eastern perimeter of the 1977 polygon feature.*

Navy Response to TechLaw General Comment 3: An additional boring for subsurface soil and groundwater (71SB11) is being added in the narrow strip of land between the building and the parking lot. This boring is along the western perimeter of the 1976 polygon feature (not the eastern perimeter of the 1977 polygon feature), per the clarification provided by EPA via email on March 5, 2008. The text on pages 3-1 and 3-2, Table 3-1, and Figure 3-1 will be revised to reflect the sample collection from the additional boring/monitoring well.

SPECIFIC COMMENTS

TechLaw Specific Comment 2

2. *Navy Response to TechLaw Specific Comment 2: There is still a discrepancy in the description of the proposed surface soil sampling in Section 3.0. The third paragraph of Section 3.0 says that no surface soil samples are proposed for collection near 71SB04, 71SB05 and 71SB06. However, the first bullet below that paragraph states that 10 surface soils will be collected. The Work Plan should be revised to correct this conflicting information.*

Navy Response to TechLaw Specific Comment 2: The text is correct. No surface soil samples are proposed for collection from 71SB04, 71SB05, and 71SB06 because of the disturbed nature of the soil. The first bullet on page 3-1 will be corrected to be consistent with the text to state the following:

- “Seven surface soil samples will be collected from locations within and outside the SWMU boundary shown on Figure 3-1 (71SB01 through 71SB03 and 71SB07 through 71SB10).”

The text in the second paragraph of Section 3.1 will also be corrected to note that surface soil samples will be collected from “seven locations” instead of “all ten” locations as noted in the text . The text and bullets on pages 3-1 and 3-2 will be clarified by calling out the boring numbers wherever the sampling strategy is explained.

Tech Law Specific Comment 3

3. *Navy Response to TechLaw Specific Comment 3: The proposed number of subsurface soil samples is still not consistently discussed in the Work Plan. The second bulleted item in Section 3.0 states that 14 subsurface soils will be collected from the seven proposed boring locations. This is not completely accurate, as the collection of several of the subsurface soil samples are contingent on the physical conditions of the subsurface north and south of the Commissary Building. The Work Plan should be revised to state that "Up to 14 subsurface soils should be collected ... "*

Navy Response to TechLaw Specific Comment 3: The Navy agrees that the number of subsurface soil samples may be limited by the physical conditions. The statement in the fourth paragraph on page 3-1 states that the sampling plan represents the maximum numbers of samples. However, to further reiterate this limitation, the bullet will be revised to note that: “Up to 16 subsurface soil samples will be collected from the proposed eight boring locations within the SWMU boundary (71SB01 through 71SB03, and 71SB04 through 71SB06, 71SB10, and 71SB11).” Note the additional samples and boring in response to TechLaw General Comment 3.

SEMI-ANNUAL GROUNDWATER MONITORING REPORT FOR SWMU 3, BASE LANDFILL DATED JANUARY 18, 2008

GENERAL COMMENT

EPA General Comment

EPA has completed its review of the “Semi-Annual Groundwater Monitoring Report September 2007 Sampling Event” for SWMU 3 – Former Solid Waste Landfill” (the Report), which was

submitted on January 18, 2008 by Baker Environmental on behalf of the Navy.

Based upon our review, which included reviews by our consultant TechLaw Inc, EPA has determined that the recommendation, given in the Conclusions and Recommendations of the Semi-Annual Report, to revise Section 4.0 of the 1999 Sampling and Analysis Plan (SAP) for the Base Landfill to “provide consistency in describing background concentrations” and to enlarge the background data base for the Landfill to “..allow a statistical plan to be followed that is compound specific when background concentrations (upper limit of the means) are exceeded during detection monitoring” are not fully acceptable.

The Semi-Annual Report does not provide any details on how the 1999 SAP will be altered to provide consistency in the background concentrations, nor does it describe the statistical method(s) that are being considered. In the enclosed Technical Review, General Comment 1 addresses these, and other issues concerning proposed revision to the approved SAP. Since the 1999 SAP was incorporated into the 2007 Consent Order by reference, any revisions to the SAP, including Section 4.0, must be submitted to EPA for review and approval, prior to being implemented.

As discussed previously in our letter of December 11, 2007 commenting on the previous semiannual report (on the March 2007 sampling event), if the Navy wishes to utilize a revised SAP for future groundwater sampling at the Base Landfill (SWMU 3) under the 2007 Consent Order, please submit, within 45 days of your receipt of this letter, any proposed revisions the Navy wishes to make to the 1999 SAP.

Navy Response to EPA General Comment: Please see Navy’s responses (dated February 15, 2008) to EPA and TechLaw comments on the report for the March 2007 sampling event regarding the proposed SAP revisions. The revised SAP as described in the Navy’s responses dated February 15, 2008 will be submitted to the EPA on April 3, 2008.

TECHLAW GENERAL COMMENTS

TechLaw General Comment 1

- 1. The Report indicates in the second paragraph of Section 4.0 that "the Navy is proposing to revise Section 4.0 of the SAP in order to provide consistency in describing background concentrations over NAPR and at the Landfill." Section 4.0 of the Report also states that, "the Navy is proposing to enlarge the background data base for the Landfill to include the first eight rounds of monitoring. This increase in data will allow a statistical plan to be followed ... " Section 4.0 of the Sampling and Analysis Plan (SAP) provides a general description of the approach for the statistical analyses of the 'data. This includes a seven page flowchart that summarizes the statistical procedures to be used for evaluating site data. However, it is not clear from the Report where the data from the monitoring 'program currently falls in the flowchart, how the SAP will be altered to present more consistent information regarding the background concentrations over the Base and at the Landfill, and which statistical method(s) are/is being pursued by the Navy. Revise the Report to clarify what information will be amended in the SAP and indicate how this information will be used for future groundwater monitoring sampling events. In addition, revise the Report to describe the place in which the current monitoring results fall in Figure 4-1 of the SAP and identify the statistical approach intended for evaluating the groundwater monitoring data at SWMU 3.*

A revised SAP, including the issues discussed above, should be provided to EPA Region 2 for review. The revised SAP should provide detailed supporting information, including calculation procedures and mathematical rationale, for all proposed statistical analysis methods and the background data expansion. No modifications to the current monitoring program should be implemented until EPA approves the revised SAP.

Navy Response to TechLaw General Comment 1: The Navy notes that the same issues were identified in the TechLaw review of the *Draft Semi-Annual Groundwater Monitoring Report, March 2007 Sampling Event*. Please see the Navy's RTC letter dated February 15, 2008 for the response. The Navy would like to reiterate that a revised SAP addressing these issues will be submitted to the EPA on April 3, 2008.

Tech Law General Comment 2

2. *Section 2.1 of the Report indicates that well R7GW04R did not recover during purging. Since this has been a reoccurring problem, it is suggested that an assessment be performed to determine why the well is not recovering. The assessment should include a review of available well logs to determine if the lack of recovery is due to subsurface materials (i.e., fine grain materials that influence groundwater recovery). If the lack of recovery is not attributed to subsurface materials, it is suggested that the Navy consider redeveloping the well.*

Navy Response to TechLaw General Comment 2: The well construction log (attached) indicates that the well is screened within bedrock where some fine sand/silts and signs of water were noted during drilling. The drilling technique switched from hollow stem augers to air hammer at 22 feet bgs due to the auger refusal. The monitor well was screened within the bedrock spanning 20 feet bgs to 30 feet bgs. The lack of recovery from this location is due to the available groundwater within the fractures and not attributed to subsurface materials. This condition is attributed to the subsurface bedrock conditions. Therefore, no additional work is required for this well.

TECHLAW SPECIFIC COMMENT

TechLaw Specific Comment 1

1. *Section 3.4, Criteria Comparison and Statistical Analyses, Page 3-2: The last full sentence on this page states "Background groundwater quality data includes the upper limit of the mean and the upgradient concentrations as found during the landfill background monitoring events." The meaning of this statement is unclear. Please clarify the definition of the "upper limit of the mean" (does this mean the 95% confidence level?) and explain how the mean values and distribution (upper limits) were obtained.*

Navy Response to TechLaw Specific Comment 1: The Navy notes that the same issues were raised in the TechLaw review of the *Draft Semi-Annual Groundwater Monitoring Report, March 2007 Sampling Event*. Please see the Navy's RTC letter dated February 15, 2008. The definition of the "upper limit of the mean" and an explanation of how the mean values and distribution (upper limits) were obtained, were provided in the *Draft Semi-Annual Groundwater Monitoring Report, March 2003 Sampling Event* and

will be provided in the revised SAP to be submitted on April 3, 2008.

RESPONSES TO COMMENTS AND REVISED CMS WORK PLAN FOR SWMU 73 DATED JANUARY 25, 2008

GENERAL COMMENT

EPA General Comment

EPA has completed its review of the Responses to Comments and Revised CMS Work Plan for SWMU 73 submitted on January 25, 2008 by Baker Environmental on behalf of the Navy. As discussed above regarding the RFI work Plans, EPA notes that the CMS work Plan also does not include an updated Quality Assurance Project Plan (QAPP). Rather, the Navy indicates that the CMS work plan has been revised to follow the procedures in the September 1995 RFI "Master Management Work Plan", including the Data Collection Quality Assurance Plan (DCQAP) and other Plans in the EPA approved, September 1995 RFI Master Management Plans for the facility. However, it should be noted that the 1995 RFI Master Plans were prepared prior to the Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP), dated March 2005. Rather than re-evaluate the entire quality assurance program utilized for prior RCRA investigations at NAPR, EPA requests that the Navy either revise their Response to Comments to discuss in more detail how the 1995 Master DCQAP will assure that data of sufficient quality, i.e., consistent with requirements of the 2005 UFP-QAPP, is achieved under the SWMU 73 CMS Work Plan; or revise those portions of the 1995 Master RFI DCQAP, as necessary, to make it consistent with requirements of the 2005 UFP-QAPP.

Navy Response to EPA General Comment: Please see the Navy Response dated February 29, 2008 to EPA Comment 1 dated January 25, 2008 on the SWMUs 56, 59, 61, 69, and 74 CMS Work Plans. That response discusses how the 1995 Master DCQAP meets the requirements of the UFP-QAPP and provides a mapping showing where the EPA QA/R-5 can be found in the Master DCQAP.

TechLaw Comment 1

1. **Evaluation of the Response to TechLaw General Comment 1:** *The response stated that the use of background chemical levels as a step for eliminating chemicals of potential concern (COPCs) was in accordance with Navy policy. It is still suggested that consideration be given to the fact that background risk may be an important site characteristic. It is possible for a chemical to be below background levels but still pose a potential risk to ecological receptors.*

Navy Response to TechLaw Comment 1: The Navy agrees that a chemical can be below background levels but still pose a potential risk to ecological receptors. However, Navy policy on the use of background chemical levels (CNO, 2004) states that, "Background chemicals should be considered during the screening portion of the Human Health Risk Assessment (HHRA) and during Step 3a of the Tier 2 Baseline Ecological Risk Assessment (BERA)." Navy policy further states that, "if any chemicals are within the range of background, they will not be carried through the baseline risk assessment." Therefore, consideration of background chemical levels in Step 3a of the Navy ecological risk assessment (ERA) process is consistent with Navy policy.

References:

Chief of Naval Operations (CNO). 2004. *Navy Policy on the Use of Background Chemical Levels*. Memorandum from Chief of Naval Operations to Commander, Naval Facilities Engineering Command. Ser N45C/N4U732212. January 30, 2004.

TechLaw Comment 2

2. **Evaluation of the Response to TechLaw General Comment 4:** *The response regarding dissolved vanadium in groundwater is incomplete. Vanadium exceeded the NAPR background screening value at one of the ground water sampling locations (19E-01). It was concluded that this exceedance was actually within background levels because the detected concentration at 19E-01 was below the maximum concentration detected in the background samples. The June 2001 EPA Eco Update (EPA 540/F-01/014) states that comparisons to background can only be used to focus the baseline risk assessment. Therefore, the maximum concentration of vanadium should only be compared to the selected groundwater screening value in order to determine whether or not it is a chemical of potential concern at the site.*

Navy Response to TechLaw Comment 2: As presented in the *Final Corrective Measures Study Work Plan for SWMU 73* (Baker, 2008), the ERA at SWMU 73 will include Step 2 of the Navy ERA process (Screening-Level Exposure Estimate and Risk Calculation), which will present screening-level risk estimates using maximum concentrations. Chemicals with maximum concentrations greater than screening values (i.e., chemicals with hazard quotient [HQ] values greater than 1.0) will be identified as ecological chemicals of potential concern (COPCs). Ecological COPCs identified in Step 2 will be carried into Step 3a of the Navy ERA process where background chemical levels will be considered (see the Navy Response to TechLaw Comment 1 above).

References:

Baker Environmental, Inc. (Baker). 2008. *Final Corrective Measures Study Work Plan for SWMU 73*. January 25, 2008.

TechLaw Comment 3

3. **Evaluation of the Response to TechLaw Specific Comment 4:** *The portion of this response regarding the selection of COPCs for use in food web screening is incomplete. The original comment stated that additional refinement steps cannot be used in a Screening Level Ecological Risk Assessment. The addition of selecting chemicals based on their log K_{ow} value is still a type of refinement. In addition, the 1997 EPA Ecological Risk Assessment Guidance for Superfund states that screening-level exposure estimates assume that the bioavailability of all the contaminants at the site is 100 percent. This guidance also states that for those chemicals that are classified as bioaccumulative, the most conservative bioaccumulation factors (BAFs) obtained from literature can be used in food web screening. Therefore, please use all of the chemicals selected as COPCs and the appropriate BAFs, if available, in the food web screening.*

Navy Response to TechLaw Comment 3: While the Navy agrees that selecting chemicals for evaluation of food web risks in Step 2 of the Navy ERA process based on their log K_{ow} value is a form of refinement, this approach has been used in EPA-approved ERAs conducted at NAPR for SWMUs 1 and 2 (Baker, 2006a) approved in the EPA letter dated June 22, 2006, SWMU 45 (Baker, 2006b) approved in the EPA letter dated January 25, 2006, SWMU 9 (Baker, 2003a) approved in the EPA letter dated June 3, 2003, Tow Way Fuel Farm (SWMU 7/8) (Baker, 2003b) approved in the EPA letter dated June 10, 2003, and SWMU 53 (Baker, 2003c) approved in the EPA letter dated January 23, 2004.

References:

Baker Environmental, Inc (Baker), 2006a. *Final Additional Data Collection Report and Screening-Level Ecological Risk Assessment and Step 3a of the Baseline Ecological Risk Assessment for SWMUs 1 and 2, Naval Activity Puerto Rico, Ceiba, Puerto Rico*. Coraopolis, Pennsylvania. May 18, 2006.

Baker, 2006b. *Final Additional Data Collection Report and Screening-Level Ecological Risk Assessment and Step 3a of the Baseline Ecological Risk Assessment for SWMU 45, Naval Activity Puerto Rico, Ceiba, Puerto Rico*. Coraopolis, Pennsylvania. January 25, 2006.

Baker, 2003a. *Final Corrective Measures Study Investigation Report for SWMU 9, Naval Station Roosevelt Roads, Ceiba, Puerto Rico*. Coraopolis, Pennsylvania. April 25, 2003.

Baker, 2003b. *Final Corrective Measures Study Task I Report for the Tow Way Fuel Farm, Naval Station Roosevelt Roads, Ceiba, Puerto Rico*. Coraopolis, Pennsylvania. May 23, 2003.

Baker, 2003c. *Final Corrective Measures Study Final Report for SWMU 53, Naval Station Roosevelt Roads, Ceiba, Puerto Rico*. Coraopolis, Pennsylvania. November 24, 2003.

TechLaw Comment 4

4. **Evaluation of the Response to TechLaw Specific Comment 5:** *The response stated that the SLERA would be based on NOAEL-HQs (No Observable Adverse Effect Level - Hazard Quotients). However HQs based on LOAELs (Lowest Observable Adverse Effect Levels) and MATCs (Maximum Acceptable Toxicant Concentration) were also calculated as part of this SLERA. Please provide an explanation for the purpose of these additional HQ calculations.*

Navy Response to TechLaw Comment 4: Screening-level risk estimates based on no observed adverse effect levels (NOAELs), lowest observed adverse effect levels (LOAELs), and maximum acceptable toxicant concentrations (MATCs) provide a range of potential risks. As presented in the *Final Corrective Measures Study Work Plan for SWMU 73* (Baker, 2008), the refinements and methods that will be used in Step 3a of the BERA to weigh the evidence of potential risks for each ecological COPC identified in Step 2 will include consideration of food web risk estimates based on LOAELs and MATCs. As the LOAELs and MATCs considered in Step3a include screening-level risk estimates derived using maximum exposure doses, LOAELs and MATCs will be derived in Step 2 and presented within Step 2 summary

tables. However, as stated in the Navy Response to TechLaw Specific Comment 5 dated January 25, 2008, ecological COPCs will be selected in Step 2 of the Navy ERA process based on NOAEL-based HQ values.

References:

Baker Environmental, Inc. (Baker). 2008. *Final Corrective Measures Study Work Plan for SWMU 73*. January 25, 2008.

TABLE 1
MAPPING OF DCQAP ELEMENTS TO EPA QA/R-5 ELEMENTS
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

EPA QA/R-5 Elements		Corresponding DCQAP Elements		Comments
		Section	Element	
Group A - Project Management Elements		---		No Group designation in the DCQAP.
A1	Title and Approval Sheet	---	Title Page	---
A2	Table of Contents	---	Table of Contents	---
A3	Distribution List	---	---	The distribution list is provided on the cover letter to the document.
A4	Project/Task Organization	6	Project Organization	---
A5	Problem Definition/Background	2	Permit Requirements for Data Collection	---
		3	SWMU/AOC Status	---
A6	Project/Task Description	4	Data Collection Strategy and Requirements	---
A7	Quality Objectives and Criteria	4	Data Collection Strategy and Requirements	---
A8	Special Training/Certification	---	---	Special training/certification are not required for sampling and analysis. Health and safety training/certification requirements are given in the master Health and Safety Plan. Other training requirements, if any are specified in the RFI Work Plans.
A9	Documents and Records	16	Quality Assurance Reporting Procedures	---
		---	---	This element is also discussed in the master Data Management Plan (DMP).
Group B - Data Generation and Acquisition Elements		---		No Group designation in the DCQAP.
B1	Sampling Process Design (Experimental Design)	4	Data Collection Strategy and Requirements	This element is also covered by Tables 3-1, 3-2 and 3-3 in the RFI Work Plans.
B2	Sampling Methods	5	Field Investigation and Sampling Procedures	---
B3	Sample Handling and Custody	7	Sample and Document Custody Procedures	---
B4	Analytical Methods	9	Analytical Procedures	---
B5	Quality Control	11	Internal Quality Control Checks	---
B6	Instrument/Equipment Testing, Inspection and Maintenance	12	Performance and System Audits	---
		13	Preventive Maintenance	---
B7	Instrument/Equipment Calibration and Frequency	8	Calibration Procedures and Frequency	---
B8	Inspection/Acceptance of Supplies and Consumables	---	---	This item is not covered in the Master Project Plans or RFI Work Plans.
B9	Non-Direct Measurements	---	---	The need for data from non-measurement sources is discussed in the task description of the RFI Work Plan, if necessary.
B10	Data Management	---	---	This element is also discussed in the Data Management Plan
Group C - Assessments and		---		No Group designation in the DCQAP.
C1	Assessments and Response	12	Performance and System Audits	---
		14	Data Measurement Assessment Procedures	---
		15	Corrective Actions	---
C2	Reports to Management	16	Quality Assurance Reporting Procedures	---
Group D - Data Validation and		---		No Group designation in the DCQAP.
D1	Data Review, Verification and Validation	10	Data Reduction, Validation and Reporting	---
D2	Verification and Validation Methods	10	Data Reduction, Validation and Reporting	---
D3	Reconciliation with User Requirements	---	---	This element is discussed in the Data Management Plan.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: SMWU 3 - Well Replacement
 PROJ. NO.: CTO-099 BORING NO.: R7GW04R
 COORDINATES: EAST: 784925.02 NORTH: 139767.58
 ELEVATION: SURFACE: 110.55 TOP OF PVC CASING: 112.39

Rig:	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Mobile B-61	1-3/8-in	--	4-1/4-in	--	12/18/2000	0.0 - 14.0	M Sunny, mid 80s	10.0
Size (ID)	2-ft	--	5-ft	--	12/19/2000	14.0 - 35.0	M Sunny, mid 80s	
Length	Stainless	--	HSA	--				
Type	140	--	--	--				
Hammer Wt.	30-in	--	--	--				
Fall								

Remarks:

SAMPLE TYPE						WELL INFORMATION			
S = Split Spoon A = Auger T = Shelby Tube W = Wash R = Air Rotary H = Air Hammer D = Denison P = Piston N = No Sample						Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
						Sch 40 PVC Casing	2-in	0	20
						Sch 40 PVC 10-Slot Screen	2-in	20	30
Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)	
1	S-1	0.9	15		0	SILT, some f/c rock frag, trace f sand & clay; brown; dense; damp (FILL)			
2		45%	29		0				
3	S-2	0.5	20		0	Weathered ROCK FRAG, some silt; gray; dense; dry (FILL)			
4		25%	25		0				
5	S-3	0.5	43		0	SILT, some rock frag, trace f sand; dk gray; v dense; dry (FILL)			
6		25%	32		0				
7	S-4	0.8	13		0	Weathered ROCK FRAG, mottled brown; m dense; damp (FILL)			
8		40%	12		0				
9	S-5	0.5	11		0	SILT, some rock frag, little clay; brown; m dense; damp (FILL)			
10		25%	10		0				
			9			Match to Sheet 2		100.55	

DRILLING CO.: Geoworks, Inc.
 DRILLER: Daniel Rolon

BAKER REP.: Mark DeJohn
 BORING NO.: R7GW04R SHEET 1 OF 3

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: SMWU 3 - Well Replacement
 CTO NO.: CTO-099

BORING NO.: R7GW04R

SAMPLE TYPE						DEFINITIONS		
S = Split Spoon A = Auger T = Shelby Tube W = Wash R = Air Rotary C = Core D = Denison P = Piston N = No Sample						SPT = Standard Penetration Test (ASTM D1586) PID = Photo Ionization Detector Measurement MSL = Mean Sea Level ps/bg = point source/background		
Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11	S-6	0.5	11		0	Continued from Sheet 1 SILT & CLAY, trace rock & shell frag; dk gray; v stiff; wet at 10-ft (sulfur odor) (NATIVE)		
12		25%	14		0			
13	S-7	0.8	6		0	little rock frag & sandy zones; dk gray; v stiff; wet		96.55
14		40%	9		0			
14			11			No recovery - rock frag		
14	S-8	0.0	35		--			
15			50/4"			Zone of boulders		18.0
15	A-N	--	--		--			
16						(Auger refusal at 22-ft, switch to air hammer)		92.55
16	A-N	--	--		--			
17								20.0
17	A-N	--	--		--			
18								90.55
18	A-N	--	--		--			
19								22.0
19	A-N	--	--		--			
20								28.0
20	A-N	--	--		--			
21						F SAND, some silt; signs of water		82.55
21	A-N	--	--		--			
22								80.55
22	A-N	--	--		--			
23								
23	H-N	--	--		--			
24								
24	H-N	--	--		--			
25								
25	H-N	--	--		--			
26								
26	H-N	--	--		--			
27								
27	H-N	--	--		--			
28								
28	H-N	--	--		--			
29								
29	H-N	--	--		--			
30								
30	H-N	--	--		--			

DRILLING CO.: Geoworks, Inc.
 DRILLER: Daniel Rolon

BAKER REP.: Mark DeJohn
 BORING NO.: R7GW04R SHEET 2 OF 3

PROJECT: SMWU 3 - Well Replacement

CTO NO.: CTO-099

BORING NO.: R7GW04R

R7GW04R

<u>SAMPLE TYPE</u>						<u>DEFINITIONS</u>		
S = Split Spoon A = Auger T = Shelby Tube W = Wash R = Air Rotary C = Core D = Denison P = Piston N = No Sample						SPT = Standard Penetration Test (ASTM D1586) PID = Photo Ionization Detector Measurement MSL = Mean Sea Level BG/PS = Background/Point Source		
Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
31						Continued from Sheet 2		
32								
33	H-N	--	--		--	F SAND, some silt; signs of water		
34								
35	35.0					35.0	35.0	75.55
36						BOH at 35.0-ft bgs		
37								
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DRILLING CO.: Geoworks, Inc.
DRILLER: Daniel Rolon

BAKER REP.: Mark DeJohn
BORING NO.: R7GW04R SHEET 3 OF 3