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

MAR 11 2011

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Mark E. Davidson
US Navy
BRAC PMO SE
4130 Faber Place Drive – Suite 202
North Charleston, SC 29405

Re: Naval Activity Puerto Rico (NAPR), formerly Naval Station Roosevelt Roads, EPA I.D. Number PRD2170027203

1) SWMU 56 (Hanger 200 Aircraft Apron) – Draft Corrective Measures Study Reported, dated October 29, 2010

2) SWMU 57 (POL Drum Storage Area) – Final Phase I RFI Report, dated November 24, 2010

3) SWMU 79 (Navy Operations on Cabras Island) - Final Phase I RFI Work Plan, dated December 15, 2010

4) SWMU 80 (Drainage Ditch Near Building 207) – Final Phase I RFI Work Plan, dated November 24, 2010

Dear Mr. Davidson:

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

SWMU 56 – Revised Draft Corrective Measures Study (CMS) Report

EPA has completed its review of the above document, submitted on behalf of the Navy by Baker Environmental's (Mr. Mark Kimes) letter of October 29, 2010. As part of that review, EPA requested our consultant, TechLaw Inc. to review this document. TechLaw's comments are given in the enclosed Technical Review (Enclosure #1). Within 75 days of your receipt of this letter, please submit written responses addressing the comments in the enclosed Technical Review, and any necessary revisions to the CMS Report.

In addition, the Puerto Rico Environmental Quality Board (PREQB) in its letter of December 21, 2010 to myself had extensive comments on the CMS Report. PREQB's comment letter is included as Enclosure #2. Within 75 days of your receipt of this letter, please also submit written responses addressing PREQB's comments, along with any necessary revisions to the CMS Report.

SWMU 57 (POL Drum Storage Area) – Final Phase I RFI Report

EPA has completed its review of the above document, submitted on behalf of the Navy by Baker Environmental's (Mr. Mark Kimes) letter of November 24, 2010. As part of that review, EPA requested our consultant, TechLaw Inc. to review this document. Although TechLaw's enclosed Technical Review, as revised by EPA on March 10, 2011 (Enclosure #3), has several comments on the Final Phase I RFI Report, EPA will conditionally approve the November 24, 2010 Report, subject to the Navy submitting, within 75 days of your receipt of this letter, responses to the enclosed comments and a draft Full RFI Work Plan to fully characterize the releases to surface and subsurface soils and groundwater, as recommended in Section 7.0 (Conclusions and Recommendations) of the Phase I Report.

The Puerto Rico Environmental Quality Board (PREQB) in its letter of December 15, 2010 to myself stated that the Responses to its prior comments were acceptable, and that it had no comments on the November 24, 2010 Final Phase I RFI Report, and found it acceptable.

SWMU 79 (Navy Operations on Cabras Island) - Final Phase I RFI Work Plan

EPA has completed its review of the above document, submitted on behalf of the Navy by Baker Environmental's (Mr. Mark Kimes) letter of December 15, 2010. As part of that review, EPA requested our consultant, TechLaw Inc. to review this document. Although TechLaw's enclosed Technical Review, as revised by EPA on March 10, 2011 (Enclosure #4), has several comments on the Final Phase I RFI Work Plan, EPA will conditionally approve the December 15, 2010 Work Plan, subject to the Navy submitting within 60 days of your receipt of this letter, a written Response addressing those comments, along with an Addendum to the Work Plan reflecting any necessary changes. Also, where requested in the comments, please incorporate the information requested into the draft Phase I RFI report, when developed following implementation of the Phase I RFI Work Plan.

The Puerto Rico Environmental Quality Board (PREQB) has also submitted comments with its letter of January 19, 2011 to myself. A copy of PREQB's letter is attached (Enclosure #5). Please submit a written Response addressing PREQB's comments within 60 days of your receipt of this letter, along with an Addendum to the Work Plan reflecting any necessary changes.

Please either commence implementation of the December 15, 2010 Final Phase I RFI Work Plan, as modified by the requested Addendum to the Work Plan, by May 16, 2011, pursuant to the schedule given in Figure 5-1 of the Work Plan, or submit a revised schedule for its implementation within 60 days of your receipt of this letter.

SWMU 80 (Drainage Ditch Near Building 207) -- Final Phase I RFI Work Plan

EPA has completed its review of the above document, submitted on behalf of the Navy by Baker Environmental's (Mr. Mark Kimes) letter of November 24, 2010. As part of that review, EPA requested our consultant, TechLaw Inc. to review this document. Although TechLaw's enclosed Technical Review, as revised by EPA on March 10, 2011 (Enclosure #6), has several comments on the Final Phase I RFI Work Plan, EPA will conditionally approve the November 24, 2010 Work Plan, subject to the Navy submitting, within 60 days of your receipt of this letter, a written Response addressing those comments, and an Addendum to the Phase I RFI Work Plan incorporating any necessary changes to the Work Plan.

In addition, the Puerto Rico Environmental Quality Board (PREQB) in its letter of January 13, 2011 to myself had several comments on the Phase I RFI Report. PREQB's comment letter is included as Enclosure #7. Within 60 days of your receipt of this letter, please also submit written responses addressing PREQB's comments, and an Addendum to the Phase I RFI Work Plan incorporating any necessary changes to the Work Plan.

Subject to the Addendum acceptably addressing EPA and PREQB's comments, please either commence implementation of the November 24, 2010 Final Phase I RFI Work Plan by July 18, 2011, pursuant to the schedule given in Figure 5-1 of the Work Plan, or submit within 60 days of your receipt of this letter, a revised schedule for its implementation.

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

Sincerely yours,

Timothy R. Gordon

Timothy R. Gordon
Project Coordinator
Resource Conservation and Special Projects Section
RCRA Programs Branch

Enclosures (7)

cc: Ms. Wilmarie Rivera, P.R. Environmental Quality Board, w/encls. #1, 3, 4, & 6 only
Ms. Gloria Toro, P.R.Environmental Quality Board, w/encls. #1, 3, 4, & 6 only
Mr. Mark Kimes, Baker Environmental, w/encls.
Ms. Cathy Dare, TechLaw Inc., w/o encls.
Mr. Felix Lopez, USF&WS, w/o encls.

Enclosure #1

EVALUATION OF THE OCTOBER 29, 2010 NAVY RESPONSE TO EPA'S JANUARY 15, 2009 COMMENTS ON THE DRAFT CORRECTIVE MEASURES STUDY REPORT FOR SWMU 56 DATED SEPTEMBER 26, 2008

NAVAL ACTIVITY PUERTO RICO
CEIBA, PUERTO RICO
EPA ID No. PR2170027203

Submitted to:

U.S. Environmental Protection Agency
Region 2
290 Broadway
New York, NY 10007-1866

Submitted by:

TechLaw, Inc.
205 West Wacker Drive
Suite 1622
Chicago, Illinois 60606

EPA Task Order No.	**002**
Contract No.	**EP-W-07-018**
TechLaw TOM	**Cathy Dare**
Telephone No.	**315-334-3140**
EPA TOPO	**Timothy Gordon**
Telephone No.	**212-637-4167**

March 1, 2011

EVALUATION OF THE OCTOBER 29, 2010 NAVY RESPONSE TO EPA'S JANUARY 15, 2009 COMMENTS ON THE DRAFT CORRECTIVE MEASURES STUDY REPORT FOR SWMU 56 DATED SEPTEMBER 26, 2008

NAVAL ACTIVITY PUERTO RICO
CEIBA, PUERTO RICO
EPA ID No. PR2170027203

The following comments were based on the review of the October 29, 2010 Navy Response to EPA's January 15, 2009 Comments on the *Draft Corrective Measures Study Report - SWMU 56,* dated September 26, 2008 (RTCs), for the above referenced facility. TechLaw also review the *Revised Draft Corrective Measures Study Report - SWMU 56* (CMS), dated October 29, 2010 for conformance with the Navy's responses. Only those responses not adequately addressed, or partially addressed are included below.

GENERAL COMMENTS

Evaluation of the Response to EPA General Comment 1: The response is partially adequate. The response states that the additional characterization of the surface soils adjacent to the drainage ditch is not warranted because selenium and vanadium were not detected in SWMU 56 surface soil at concentrations statistically elevated above background levels. The background airfield soil data set was established and incorporated into the *Revised Final II Summary Report for Environmental Background Concentrations of Inorganic Compounds* (Baker, 2010), which was developed after the Draft Corrective Measures Study Report for SWMU 56, dated September 26, 2008, was initially submitted. The response does not indicate that the background study information will be incorporated into the CMS. Revise Section 4.1, Surface and Subsurface Soil Sampling, to include a discussion of the statistical evaluations of background levels of selenium and vanadium with respect to the detected concentrations in samples collected from soil boring locations 56SB06 and 56SB07.

Evaluation of the Response to EPA General Comment 3: The response is partially adequate. The CMS was revised to evaluate risk and hazard to future hypothetical residents; however, some of the exposure factors used in the quantitative evaluation do not appear appropriate. Table 8-5, Summary of Exposure Parameters, indicates that an exposure duration (ED) of 24 years and an averaging time for non-carcinogens (AT_{NC}) of 8,760 days were used to evaluate site media exposures. Revise the HHRA to use an ED of 30 years to evaluate risk and hazard to future hypothetical adult residents (and thus an AT_{NC} of 10,950 days as AT_{NC}=EDx365 days/year), and update Table 8-5 and Section 8.3.2, Exposure Assessment accordingly.

Additionally, it appears that residential soil exposures were also evaluated using total soil data (i.e., data from 0-10 feet below ground surface [bgs]). If this approach is followed, the exposure point concentrations (EPCs) for future hypothetical residents (at a minimum) should be the

maximum detected concentrations (MDC) at each sampling location rather than the 95% upper confidence limit (UCL) on the mean to be protective and ensure overestimation of the risk and hazards. Revise the HHRA accordingly, or provide sufficient justification for not following this approach. If the MDC is not used as the EPC when evaluating soil exposures, clarify why it is not necessary to resample at SWMU 56 in order to use the 95% UCL.

Evaluation of the Response to EPA General Comment 4: The response is partially adequate. Given that during the construction of the airfield surface and subsurface soil were extensively reworked causing complete removal of the top layer and the top layer was subsequently replaced with fill, combining the surface and subsurface soil data sets to create a total soil (0-10 feet bgs) data set may be appropriate to evaluate soil exposures to industrial workers. However, if this approach is followed, the EPCs for industrial workers (as with future hypothetical residents) should be the MDC at each sampling location rather than the 95% UCL on the mean to be protective and ensure overestimation of the risk and hazards. Revise the HHRA accordingly, or provide sufficient justification for not following this approach. If the MDC is not used as the EPC when evaluating soil exposures, clarify why it is not necessary to resample at SWMU 56 in order to use the 95% UCL.

Evaluation of the Response to EPA General Comment 5: The response is partially adequate. The report has been revised to indicate that reporting limits (RLs) exceed the human health screening levels for two compounds (i.e., arsenic and vanadium). However, the report does not include a table that compares the RLs [or preferably the sample quantitation limits (SQLs)] to human health risk-based screening criteria. Revise the CMS to include such a table. Additionally, the subsections of Section 8.3.5, Comparison to Background Levels, and 8.3.6, Sources of Uncertainty should be re-numbered and/or re-organized. The subsections of Section 8.3.5 are numbered "8.3.6.1" and the subsections of Section 8.3.6 are numbered "8.3.5.1." Revise these sections to correct subsection numbers and ensure references to these sections in the text are updated.

Evaluation of the Response to EPA General Comment 8: The response is partially adequate. Section 8.3.6, Sources of Uncertainty, should present a comprehensive qualitative uncertainty analysis that justifies not quantitatively evaluating risk and hazard to industrial workers resulting from surface water and sediment exposures. While exposures are anticipated to be minimal, the lack of quantitatively evaluating surface water and sediment exposure pathways for industrial workers introduces uncertainty to the risk assessment.

SPECIFIC COMMENTS

Evaluation of the Response to EPA Specific Comment 5: The Navy response is somewhat unclear. The response seems to indicate that arbitrary uncertainty factors were applied in the CMS work plan, but were then replaced in the Screening Level Ecological Risk Assessment (SLERA) by the Wentsel et al. (1996) uncertainty factors. The response is acceptable if this interpretation is correct. The response should be further clarified if this interpretation is incorrect.

Evaluation of the Response to EPA Specific Comment 9: The response does not address the comment. It is problematic to excavate the impacted sediment from the unlined portions of the drainage ditch without confirmatory sampling of the side walls and the bottom to prove that the sediment Corrective Action Objectives (CAOs) have been attained throughout. Backfilling the excavated portions of the ditch with compacted, low-permeability soil may temporarily eliminate exposure to contaminants exceeding their CAOs at depth. The concern is that some of the backfilled areas may be washed away over time due to high rainfall events (e.g., tropical downpours associated with hurricanes), thereby re-exposing the potentially contaminated excavated side walls and the bottom of the drainage ditch. Revise the CMS to develop a post-excavation confirmatory sampling plan for the drainage ditch to address this issue.

Evaluation of the Response to EPA Specific Comment 10: The response partially addresses the comment. The Navy states that EPA-approved "Master Project Plans" are available which cover the Project Management Plan (PMP), Data Collection Quality Assurance Plan (DCQAP), Data Management Plan (DMP), and the Health and Safety Plan (HSP). However, these Master Project Plans are not referenced in Section 11.1.1. Instead, several bullets outline elements to be included as part of a Corrective Active Project Plan. It is unclear how the Corrective Active Project Plan will reference the Master Project Plans, if at all. Revise the CMS to reference the Master Project Plans as the source for DCQAP, DMP, and HSP if these plans will not be specified in the individual site-specific project plans.

MINOR COMMENTS

Evaluation of the Response to EPA Minor Comment 2: The response is partially adequate. The original comment stated that "Arsenic exceeded the background screening value in three samples and vanadium exceeded the screening value in two samples. Cadmium, chromium, cobalt, lead and vanadium exceeded the background screening value in one sample." The response indicates that the last paragraph in Section 6.1, Surface Soils, was edited to state that "Cadmium, chromium, cobalt and lead exceeded the background screening value in one sample." The text presented in the revised CMS states that "Arsenic exceeded the background screening value in four samples (and one duplicate sample); lead exceeded background in two samples; cadmium, cobalt and vanadium exceeded the screening value in one sample." The previous comment indicated that the other exceedances in the section appeared correct as originally referenced; however, the number of screening value exceedances for arsenic, chromium and lead have been changed in addition to vanadium. Clarify why the number of noted screening value exceedances were revised and ensure that other values were not inadvertently changed.

Evaluations of the Response to EPA Minor Comment 3: The response is partially adequate. The original comment requested clarification on the analysis and naming of quality acceptance/quality control (QA/QC) samples in Table 6-6, Summary of Detected Laboratory Results - Field QA/QC Summary. The naming of the QA/QC samples has been clarified; however, additional changes within the text were made regarding the number of detections in samples. For example, in Table 6-6, acetone does not appear to have been detected in samples

ER04 and ER05, though it is noted to have been detected in these samples in the text. Review and revise Section 6.6.1, Summary of Detected Compounds in Field QA/QC Samples, and Table 6-6, as necessary, to address these and other potential discrepancies.

ENCL. #2

COMMONWEALTH OF PUERTO RICO
Office of the Governor
Environmental Quality Board

PUERTO RICO VERDE

ENVIRONMENTAL EMERGENCIES RESPONSE AREA

December 21, 2010

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

RE: TECHNICAL REVIEW REVISED DRAFT CORRECTIVE MEASURES STUDY REPORT SWMU 56 – NAVAL ACTIVITY PUERTO RICO (NAPR) CEIBA, PR PR2170027203

Dear Mr. Gordon:

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

Enclosed please find PREQB's comments issued as part of the technical review. If you have any additional comment or question please feel free to contact Gloria M. Toro Agrait at (787) 767-8181 extension 3586 or myself at extension 6141.

Cordially,

Wilmarie Rivera
Federal Facilities Coordinator
Environmental Emergencies Response Area

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

Cruz A. Matos Environmental Agencies Building
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Technical Review Revised Draft Corrective Measures Study Report
SWMU 56 –
Naval Activity Puerto Rico, Ceiba, Puerto Rico
October 2010

GENERAL COMMENTS

1. Please note that in addition to review the Navy's responses to PREQB comments on the Draft Corrective Measures Study Report dated September 2008, a review of the Revised Draft Corrective Measures Study Report dated October 2010 was conducted due to the inclusion of new data and evaluation in the revised report. The responses to PREQB comments were evaluated in the context of reviewing the revised draft report. Where applicable, comments below indicate where the responses require additional clarification or revision, based on the information and data presented in the revised draft report.

2. A Pre-excavation Investigation was conducted in 2008 and a Supplemental Investigation was conducted in 2009. Please clarify the purpose and scope of the excavation activity and identify the location of where the excavation activities took place on relevant figures.

3. There are notations throughout the report that the laboratory reported nondetect results down to the method detection limit (MDL) for all matrices. Tables 6-1 thru 6-6 and Appendix B show the laboratory data reported down to the MDL. As included on the comments for the September 2008 draft report, this is not consistent with the approved CMS Work Plan and EPA guidance (Risk Assessment Guidance for Superfund Volume I, Human Health Evaluation Manual [Part A] Interim Final, December 1989). EPA guidance states that "Because [sample quantitation limits (SQLs)] take into account sample characteristics, sample preparation and analytical adjustments, these values are the most relevant [quantitation limits] for evaluating non-detected chemicals (EPA, 1989)." Both of these documents ensure the use of the quantitation limit (or reporting limit) in all data evaluations. The Navy's response to comments indicated the use of the MDL was acceptable based on the laboratory's process for performing MDL studies. However, regardless of the procedure used by the laboratory, the MDL is a statistically derived value. The quantitation limits are accurately verified by laboratory analyses of standards at the unadjusted reporting limit with every initial calibration. Table 3-2 of the approved CMS Work Plan presented the quantitation limits that the laboratory was required to achieve, and not the MDLs. In addition, other sections of the approved CMS Work Plan (listed below) clearly indicated that reporting limits (not MDLs) would be used for the evaluation of the data during the ecological risk assessment.
   a. Section 5.1.2, Existing Analytical Data, of the approved CMS Work Plan discusses the use of reporting limits.

b. Section 5.3.1 (Selection Criteria for Analytical Data) of the approved CMS Work Plan states that maximum reporting limits will be conservatively used to estimate exposure for non-detected chemicals. Note that several sections of the CMS Report state that maximum MDLs were conservatively used, and not reporting limits.

c. Section 5.3.2 (Exposure Point Concentration – Abiotic Media) of the approved CMS Work Plan states that for conservatism, the maximum reporting limit for chemicals that were analyzed for but not detected also will be compared to medium-specific screening values and (where applicable) used for food web exposure modeling. This will be done to ensure that reporting limits are similar to, or less than, chemical concentrations at which potential adverse effects to ecological receptors may occur. Note that the CMS Report states that maximum MDLs were used for this comparison, and not reporting limits.

d. Section 5.4.1 (Selection of Ecological Chemicals of Potential Concern) of the approved CMS Work Plan states that for chemicals not detected in any samples of a particular medium, the maximum reporting limit will be used to calculate media-specific HQs. For a given medium, nondetected chemicals with HQs greater than 1.0 based on maximum reporting limits will be identified as ecological COPCs for that medium. The CMS Report states that maximum MDLs were used for these calculations and COPC identifications, and not reporting limits.

e. Section 5.7.1 (General Methodology for Step 3a) of the approved CMS Work Plan states that chemicals not identified as ecological COPCs because maximum detected concentrations (or maximum reporting limits in the case of non-detected chemicals) are less than medium-specific screening values will not be evaluated in Step 3a of the baseline ERA since a conclusion of no unacceptable risk can be made with high confidence. The CMS Report states that MDLs were used for this evaluation, and not reporting limits.

   It should be noted that reporting limits are typically 3-5 times higher than the MDLs prior to adjustment for sample-specific parameters, etc. It should be noted that the ECP Phase II data presented in Tables 6-7 through 6-10 reported nondetect results down to the reporting limit, not the MDL. Please revise the report according to the requirements set forth in the approved CMS Work Plan.

4. For all validation reports in Appendix C, it appears that when blank qualification occurred in all analyses, the validator qualified the associated samples as nondetect (U) at the reported concentration. In many cases, the reported concentrations were below the reporting limit. Therefore, the new nondetect result at this "reported concentration" is not an accurate reflection of the actual nondetect value. As per the EPA Region 2 validation guidelines, sample results below the reporting limit should be raised to the reporting limit if affected by the blank contamination. Please revisit all validation memos and apply qualifications in accordance with EPA Region 2 procedures.

PAGE-SPECIFIC COMMENTS

1. Page 1-1, Section 1.0: Please note the location of the soil disturbance activities mentioned in this section on relevant figures.

2. Page 4-2, Section 4.0, Supplemental Field Investigation: The text refers to Segment G-H, shown on Figure 4-2. However, this segment is not depicted on the figure. Please clarify.

3. Page 4-4, Section 4.1, Paragraphs 1 & 2: Please provide an explanation for the lack of sample homogenization, as is standard sampling protocol, for the aliquots other than VOCs.

4. Page 4-4, Section 4.1, Paragraph 2: Please confirm that the subsurface soil samples collected for VOCs were also collected using the Method 5035 preservation techniques.

5. Page 4-4, Section 4.1, 2008 CMS Investigation:

   a. Paragraph 1: The text states that surface soil samples were transferred directly into pre-labeled sample jars. Please clarify if these samples were first homogenized.
   b. Paragraph 2, please clarify the following passage, "The presence of groundwater was not apparent; therefore the field geologist's discretion was used to indicate the water-bearing zone. The sampling depths were selected based on the field geologist's discretion to represent the variability in the predominantly clayey soil type in the shallower depths and observations of moisture, dampness or saturated soil in the deeper depths." The wording with respect to groundwater not being apparent and the mention of saturated soils appears contradictory.
   c. Paragraph 2: For the subsurface soil samples, please clarify if each depth interval was preserved for VOCs immediately after cutting the liner and screening the sample or if samples were preserved after the desired depth interval for analysis was selected.

6. Page 4-4, Section 4.2: It was observed that the well development and groundwater sampling activities were conducted between one and two days apart. It is a common practice to wait for a period of one to two weeks following well development before sampling is conducted (refer to the December 1995 USEPA OSWER article EPA/540/S-95/504 by Puls and Barcelona) to allow for physical and chemical equilibration in the area of newly-installed wells. Please provide an explanation as to the short timeframe between well development and sampling.

7. Page 4-5, Section 4.2, Paragraph 4: Please indicate the time and/or turbidity goals (or other parameter goals) for the well development process in this discussion.

8. Page 4-6, Section 4.3, Paragraph 1: A synoptic set of water level measurements is typically collected prior to sampling a group of wells in order to ensure that the levels are at equilibrium and have not been influenced by pumping activities, etc. The sampling dates presented in Table 4-1 versus the May 7, 2008 water level measurement date presented in this section of the text indicate that water levels were measured following the sampling. Please provide some clarification in the text as to why water levels were collected following the sampling.

9. Page 4-7, Section 4.4.2, Paragraph 3: The text indicates that sediment samples 56SD15 through 56SD22 were collected on June 27, 2009, however the dates presented in Table 4-1 reflect that they were collected on June 24, 2009. Please clarify.

10. Page 4-8, Section 4.4.3, Paragraph 1: Please change "OPR" to "ORP" in the first sentence.

11. Page 4-8, Section 4.5 / Appendix A: Please provide the IDW characterization and disposal information as supporting documentation.

12. Page 4-9, Section 4.7, Paragraph 2: Please provide an indication as to whether a particular spot on each PVC riser was marked for survey to allow for water level measurements to be taken from a consistent location.

13. Page 4-10, Section 4.8.3: Please explain why there were no MS/MSD samples collected during the Pre-excavation Investigation in September 2008 or the Supplemental Field Investigation in June 2009.

14. Page 4-10, Section 4.8.5, Paragraph 1:
    a. Please explain why there was no equipment rinsate collected during the Pre-excavation Investigation in September 2008.
    b. Please complete the fourth sentence.

15. Page 4-11, Section 4.9, Paragraph 1:
    a. The text states that CompuChem Laboratories conducted the analyses for the Supplemental Field Investigation. However, as per Section 6.6.15 and the Data Validation Reports in Appendix C, Columbia Analytical Services performed these analyses. Please revise accordingly.

16. Page 5-2, Section 5.3.1, Paragraph 1: It is noted in this section that boring 56SB01 was advanced deeper than the rest in order to identify a significant water-bearing zone, but was then back-filled to sixteen feet to better accommodate the installation of a monitoring well. Please reference this in Section 4 of the report and provide an indication as to the procedures and material used to backfill the borehole to sixteen feet.

17. Page 5-3, Section 5.3.3, Paragraph 1: Please note in the text why wells at locations 56SB04 and 56SB05 were not subjected to slug testing.

18. Page 5-3, Section 5.3.3, Paragraph 2: In addition to acknowledging a comment made previously about clarifying the large difference in the hydraulic conductivity values for 56SB02 and 56SB03 by simply stating that this difference exists, please hypothesize (based on geologic observations made during the investigation or by re-analyzing the test data) as to why these values are so much lower than the others.

19. Page 6-1, Section 6.0:
The opening paragraph should include a note that the Phase II ECP data were not validated, as per Section 4.0. Otherwise, the second sentence in the opening paragraph could be misleading.
Paragraph 2: Please add the words "and Table 6-8" after the reference to Table 6-7 in the second sentence.

20. Page 6-2, Section 6.1: The text refers to two duplicates associated with samples 56SS01 through 56SS12. Please revise to one duplicate.

21. Page 6-4, Section 6.3, Paragraph 3: The last sentence of this paragraph states that the remaining SVOCs were detected in 56GW07. However, this is not accurate as 1,4-dichlorobenzene was not previously discussed in this paragraph and was detected in sample 56GW02, not 56GW07. Please revise.

22. Page 6-7, Section 6.6.1:
    a. Paragraph 2: The one VOC detected in the field blanks was 2-butanone, not acetone. Please revise the text accordingly.
    b. Paragraph 3: The text states that five trip blanks were collected. However, according to Table 4-2, there were six trip blanks collected. In addition, Table 6-6 only presents results for five trip blanks. Please clarify and revise, as necessary.
    c. Paragraph 4: The text of the first sentence indicates that acetone and toluene were detected in equipment blanks ER04 and ER05, yet the data in Table 6-6 do not reflect this. Please clarify.
    d. Please correct the spelling of the word "stainless" in the third sentence.

23. Page 6-10, Section 6.6.3.2, SDG SWMU36289-4: Samples were reextracted outside of holding time for low-level PAHs due to an LCS recovery issue. The results of the reextraction were reported due to acceptable LCS results, although the extractions were performed outside of holding time. Further justification was requested in the comments for the September 2008 draft report as to why the results of the reextractions were reported. The justification provided in the Navy's response to comments stated that the recovery of dibenz(a,h)anthracene (121%) was high in the LCS associated with the original extractions within holding time. However, it is unclear why the validator chose to report the results of the potentially low-biased data outside of holding time versus the more accurate results of the original analysis within holding time especially when dibenz(a,h)anthracene was not even detected in

any of the associated samples (56SW01 through 56SW05). Since this compound was not detected in the samples, there was no adverse effect from the slightly high recovery in the associated LCS. Please clarify.

24. Page 6-12, Section 6.6.4.2, SDG SWMU36360-6: Samples were reextracted outside of holding time due to surrogate and internal standards in the initial analyses. The text states that the results of the reextractions were not reported simply because of the holding time exceedances. Further justification was requested in the comments for the September 2008 draft report as to why the results of the reextractions were not reported. The justification provided in the Navy's response to comments stated that the internal standards and surrogates were still outside of the control limits in the reextractions and the results of both analyses were not comparable. Please provide information on which analysis had higher recoveries of surrogates and internal standards in the explanation so it can be justified that the proper analysis was reported.

25. Page 6-15, Section 6.6.6.2, SDG SWMU36419-1: Samples were reextracted outside of holding time due to an LCS and MS/MSD recovery issue. The results of the reextraction were reported due to acceptable LCS and MS/MSD results, although the extractions were performed outside of holding time. Further justification was requested in the comments for the September 2008 draft report as to why the results of the reextractions were reported. The justification provided in the Navy's response to comments did not provide any information on the LCS and MS/MSD recovery nonconformances associated with the initial extractions, as requested in the comment. Please provide this information in the explanation to support the reporting of the reextraction outside of holding time.

26. Page 7-23, Section 7.4.1.3: A 95 percent upper confidence limit of the mean water hardness concentration from a stream located approximately four miles from the NAPR was used to calculate surface water screening values for various metals. Lacking suitable site-specific water hardness data, the 95 percent lower confidence limit of the mean water hardness value of this stream would represent a more conservative and appropriate value for conducting an ecological screening since a lower water hardness value equates to a lower screening value. Please re-evaluate the selection of surface water COPCs using this more appropriate water hardness value.

27. Page 7-27, Section 7.5.1: The report states that the maximum MDLs/RLs were used to estimate exposure for non-detected chemicals. Reporting Limits should be used to evaluate non-detected chemicals. Please clarify whether the Method Detection Limits or the Reporting Limits were used in the selection of COPCs.

28. Page 7-40, Section 7.7: A source of uncertainty regarding sediment screening values for metals is that site-specific conditions such as AVS are not taken into account that can affect the bioavailability of certain metals. Please add a sentence to this bullet that notes that AVS/SEM samples were collected from a subset of the drainage ditch sediment samples and these data are discussed in Step 3A.

29. Page 7-50, Section 7.9.1.1: Lead was identified as an ecological COC for SWMU 56 surface soil as it exceeds its soil screening value and the lead background concentration. However, the report recommends no additional evaluation in form of corrective measures. It appears that this is a typographical error. Please eliminate "no" from the last sentence in the 1st paragraph on this page.

30. Page 7-55, Section 7.9.1.4: Please see comment above regarding non-conservative use of the 95 percent upper confidence limit of the mean water hardness concentration.

31. Page 7-78, Section 7.10.1.2: An iterative process substituting values for surface soil concentrations using the equation presented in this section was reported to be used in determining a dietary intake rate that was equal to the NOAEL-based TRV. The surface soil concentrations presented for this equation (95 percent UCL for cadmium and lead) presumably represent the initial surface soil concentrations entered into the equation and these values were subsequently replaced with lower surface soil values in order to equal the NOAEL-based TRV. It appears that several additional parameters need to be included in the equation. Specifically, the concentration in the food item (plant/invertebrate) needs to incorporate the surface soil concentration (entered on an iterative process) and the appropriate bioaccumulation factor. Alternatively, the equation could be clarified to indicate that each substitution of the surface soil concentration results in a new food item concentration (for both plants and invertebrates) based on the equations provided in Table 7-24 for cadmium and lead.

32. Pages 8-1 to 8-2, Section 8.2:
    a. The purpose of evaluating two separate soil datasets in the human health risk assessment (HHRA) is to represent two exposure media unrelated to distinct soil layers. The surface soil dataset is used to evaluate exposure by current receptors, such as commercial/industrial workers and trespassers, who may be exposed to current surface soil, regardless of whether it is fill material or native material, while conducting activities at the site. A total soil dataset may be used for future receptors, depending on the distribution of contamination in total versus surface soil. Please clarify the use of a total soil dataset in the context of exposure media to which each receptor may be exposed. Note that Section 1.0 states that soil disturbance did "not impact areas where analytical data and suspected site related contamination had occurred..." indicating that the surface soil dataset is representative of current conditions within the impacted area (i.e., site).
    b. Please clarify why soil sample data to a depth of 10 feet bgs is evaluated in the HHRA when groundwater was encountered at 6 feet bgs. Please discuss whether typical construction practices for the area excavate down to 10 feet if groundwater is encountered at 6 feet bgs. If not, samples from depths greater than 6 feet bgs may not represent exposure media for the HHRA.

33. Page 8-2, Section 8.2:

a. Groundwater is classified as potable in accordance with Puerto Rico's Water Quality Standards. Therefore, future commercial/industrial receptors may be exposed to groundwater via ingestion and dermal exposure pathways in addition to inhalation of vapors emanating from groundwater. Please revise the HHRA accordingly.
b. In the last paragraph of this section, please describe the exposure media and pathways evaluated for the residential exposure scenario, consistent with the other receptors and exposure scenarios discussed in this section.

34. Page 8-3, Section 8.3.1.1: Please verify the section where the Phase II ECP data is discussed qualitatively. The text indicates that this discussion is presented in Section 8.3.1.2.2, which is "Use of Surrogate Chemicals for Missing Screening Values."

35. Page 8-4, Section 8.3.1.2.1: Section 8.3.1.2.1 describes a comparison of metals to background concentrations as part of the COPC selection section process. Please revise this section for consistency with Section 8.3.1.2, which states that "no metals were eliminated from the risk evaluation based on their occurrence at background levels." . Please clarify why a comparison to background is discussed a COPC selection criterion if no metals were eliminated based on this comparison? .

36. Page 8-5, Section 8.3.1.2.2: Please also discuss whether there are any natural processes occurring at the site that would result in the presence of hexavalent chromium via oxidation of trivalent chromium.

37. Page 8-6, Section 8.3.1.2.3, Total Soil:
a. Note that data were collected during the Phase II ECP that were not third-party validated. Please revise this section to indicate that data were collected but not used in the HHRA as they did not meet data quality objectives.
b. Please note that EPA's Regional Screening Levels are typically referred to as either residential RSLs or industrial RSLs. For clarity and consistency, please consider using this acronym, as the text refers to them as SLs, and the tables refer to these values as SSLs. The acronym "SSL" typically refers to EPA's soil screening levels, where the Protection of Groundwater SSLs are presented on EPA's RSL table (May 2010).
c. Benzo(a)pyrene is a mutagenic mode of action (MMOA) chemical. Please revise the HHRA to evaluate child exposure to BAP and dibenz(a,h)anthracene, also included as a COPC. This comment applies to all exposure media where these chemicals are identified as COPCs.

38. Page 8-7, Section 8.3.1.2.3, Surface Water and Sediment: Please clarify why the Phase II ECP data is discussed in this section on selection of COPCs. How is the information presented used in the selection process? Although this data may be useful for evaluating nature and extent of contamination, it is inappropriate for use in the risk assessment due to validation issues.

39. Page 8-8, Section 8.3.2.1: Please clarify why a current/future outdoor worker exposure scenario is not being evaluated in the HHRA. Please discuss whether the culverts are cleared or whether other maintenance activities conducted by an outdoor worker take place at the site.

40. Page 8-9, Section 8.3.2.1:
    a. This section states that a commercial/industrial worker is evaluated for exposure to groundwater. However, Table 8-5 does not include any exposure parameters for evaluating ingestion and dermal exposure to groundwater under a future exposure scenario. Please revise the HHRA to evaluate these exposure routes as groundwater is classified as potable per Puerto Rico Water Quality Standards (2010).
    b. Please revise this sentence to indicate that a residential scenario is used to evaluate unrestricted land use at the site, rather than stating it is the worst-case exposure scenario, "A residential land use is also assumed to estimate the worst-case exposure conditions."
    c. Please revise this section for consistency with the HHRA, Section 8.3.2.5, where only tapwater RSLs are used to evaluate volatilization from groundwater. As previously commented on, the use of the 2002 vapor intrusion screening levels is not appropriate for evaluating VOCs volatilizing into a trench or while showering.

41. Page 8-10, Section 8.3.2.1: Please add ingestion of groundwater for the future commercial/industrial worker receptor as groundwater is classified as potable.

42. Page 8-11, Section 8.3.2.4: Please clarify in the text that the 95% UCLs were calculated in the "with NDs" mode rather than in the "Full" mode (i.e., surrogate values for non-detects were not used, consistent with current EPA guidance).

43. Page 8-14, Section 8.3.2.5: Please clarify why soil from 0-10 feet bgs was included in the total soil dataset when groundwater is present at 6 feet bgs at this site.

44. Page 8-15, Section 8.3.3: Please address MMOA chemicals and how they are evaluated in this section.

45. Page 8-12, Section 8.3.6.1: Please clarify if the intent of the third paragraph is to show that the contribution to overall site risks attributable to site-related impacts is below acceptable risk and hazard levels. If so, please revise the last sentence to emphasize this point rather than emphasizing that site risks are comparable to background. It would be preferable to discuss that the relative contribution to overall site risk from site-related activities is below acceptable cancer risk and hazard levels rather than emphasizing that the relative contribution to overall site risk from site-related activities is comparable to background cancer risks and hazard levels, because they both may exceed acceptable levels individually.

46. Page 8-26, Section 8.3.5.6: Please add a discussion of whether there are potential sources for vanadium associated with site activities/use. This may be an additional line of evidence concerning whether vanadium is naturally occurring.

47. Page 9-2, Section 9.5, Paragraph 2: Please clarify the apparent discrepancy between the statement that there are sediments in Segment A-B containing barium, cadmium, chromium, lead and zinc in excess of the CAOs versus the indication on Figure 9-2 that only cadmium and lead exceed the CAOs in this segment.

48. Page 11-2, Section 11.1, Bullet #6: This bullet suggests that confirmation samples be analyzed for cadmium and lead. Please include the requirement that these analyses be performed by SW-846 method 6020A using ICP-mass spectrometry. Due to the proposed cleanup level of 0.99 mg/kg for cadmium in sediment as discussed in Section 10.1.2, this more sensitive method will be required to achieve low enough quantitation limits below the cleanup level. Since this is not the method cited for metals in the current Work Plan for this SWMU, it is highly recommended that this be included in the requirements so it is not overlooked in the next investigation.

49. Table 4-1:
    a. The information presented in this table with regard to surface soil samples 56SS01 through 56SS12 implies that the samples were submitted to the laboratory for the full suite of Appendix IX metals analysis, however the text on Page 4-4, Section 4.1 indicates that only select metals were analyzed. Please clarify.
    b. As per the boring logs and/or field log book notes in Appendix A, the following depth intervals on this table are inconsistent with the information provided in the field notes:
        i. 56SB03-04: Depth interval should be 7.0-9.0 ft bgs, not 9.0-10.0.
        ii. 56SB05-05: Depth interval should be 9.0-10.0 ft bgs, not 9.0-1 1.0.
        iii. 56SB06-03: Depth interval should be 5.0-7.0 ft bgs, not 9.0-11.0.
        iv. 56SB06-01D: Depth interval should be 1.0-3.0 ft bgs since this is a field duplicate of 56SB06-01.

50. Table 4-2: Please provide an "X" in each appropriate box to indicate for which parameters for which field blank sample JUNE09-FB02 was analyzed.
51. Table 4-3:
    a. Please revise units for metals in soil to mg/kg.
    b. Please replace "total organic compounds" with "total organic carbon."

52. Table 5-2: Please format the table such that the columns will accommodate the word "Groundwater".

53. Tables 6-1 through 6-6: Previous comments on the September 2008 draft report requested the reporting of nondetect results down to the quantitation limit instead of the MDL on these tables. Since results are still reported down to the MDL, please

revise the notes section of the table and replace "quantitation limit" with "method detection limit" for the "U" and "UJ" qualifier.

54. Table 6-5: Please remove the shading from the blank cells on pages 4 and 6 of 6.

55. Table 6-10: This table was mis-placed between Tables 6-1 and 6-2 in the electronic copy of this report.

56. Table 7-21: Shaded cells are used to indicate detected chemicals that were identified as COPCs. Please shade thallium for evaluating risk to upper trophic level avian receptors within the drainage ditch sediment (HQ = 1.38). In addition, please correct the footnote for 1,4-Naphthoquinone to "6".

57. Table 7-38: Please correct the footnote numbers listed at the bottom of this table.

58. Figure 4-2: Please show Drainage Ditch Segment G –H, as referenced in the text of the report.

59. Figures 5-5 and 5-6: Based on the configuration of the well network (both for SWMU 56 alone, as well as in conjunction with the other SWMUs), there is a very narrow corridor within which the ground water elevations can be interpolated. Please revise the ground water contours on both figures to reflect dashed lines where data cannot be interpolated, but is inferred.

60. Table 8-5: A child resident would typically be outdoors every day; therefore, please revise the exposure frequency for sediment and surface water to 350 days per year.

Appendix H

1. Please clarify what soil depth range is represented by 0-0, as shown in the Depth Range header column for some soil samples.

Appendix J

1. Pages J-2 and J-3, Inhalation of Fugitive Dust/Volatiles from Soil:
    a. Please revise the units for AT to hours.
    b. Please present the equations used to calculate the volatilization factors and particulate emission factors or refer the reader to the relevant spreadsheets in Appendix K.

2. Page J-4, Dermal contact with groundwater: The equation presented is not consistent with the equation presented in EPA's RAGS Part E. The CDI equation should not include ET, exposure time, as this is accounted for in the DAevent equation as the event duration (t_{event}) expressed in hours per event. The appropriate term should be

EV, event frequency (i.e., the number of events per day). Please revise this appendix, Appendix K and the HHRA accordingly.

3. Page J-5, DAevent for organics and inorganics: Please note that under the definition of terms, there appears to be a typographical error for t_{event}, where the text states "assume one event per day," The event duration should express the duration of each event in hours per event.

4. Page J-5, Ingestion of Surface Water: Please revise the units for ingestion rate (IR) to L/hour for consistency with Table 8-5 and Appendix K.

5. J-6, Dermal Contact With Surface Water: Please revise this equation to remove the ET term and replace with EV. Please revise this appendix, Appendix K and the HHRA accordingly.

Appendix K

1. Inhalation of Fugitive Dust spreadsheets: Please consider revising the title of these spreadsheets for all receptors to reflect inclusion of the inhalation of volatiles from total soil.

2. Adult and Youth Trespassers Adult Industrial Workers, Adult Construction Workers, Inhalation of Fugitive Dust Emanating from Total Soil: Please revise the units shown for averaging time (AT), as the numerical values listed reflect the correct units of hours for both carcinogens and noncarcinogens.

Enclosure #3

EVALUATION OF THE NOVEMBER 24, 2010 NAVY RESPONSES TO EPA COMMENTS DATED OCTOBER 7, 2010 ON THE DRAFT PHASE I RCRA FACILITY INVESTIGATION REPORT SWMU 57 – POL DRUM STORAGE AREA DATED AUGUST 13, 2010

NAVAL ACTIVITY PUERTO RICO
CEIBA, PUERTO RICO
EPA ID No. PR2170027203

Submitted to:

U.S. Environmental Protection Agency
Region 2
290 Broadway
New York, NY 10007-1866

Submitted by:

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EPA Task Order No.	**002**
Contract No.	**EP-W-07-018**
TechLaw TOM	**Cathy Dare**
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Telephone No.	**212-637-4167**

February 22, 2011
(revisied by EPA March 10, 2011)

EVALUATION OF THE NOVEMBER 24, 2010 NAVY RESPONSES TO EPA COMMENTS DATED OCTOBER 7, 2010 ON THE DRAFT PHASE I RCRA FACILITY INVESTIGATION REPORT SWMU 57 – POL DRUM STORAGE AREA DATED AUGUST 13, 2010

NAVAL ACTIVITY PUERTO RICO
CEIBA, PUERTO RICO
EPA ID No. PR2170027203

The following comments were generated based on an evaluation of the November 24, 2010 Navy Responses to EPA Comments dated October 7, 2010 on the Draft Phase I RCRA Facility Investigation Report SWMU 57 – POL Drum Storage Area, for Naval Activity Puerto Rico in Ceiba, Puerto Rico, hereinafter referred to as the RFI. The RFI was also reviewed for conformance to the Navy's responses to the comments. Only those comments which have not been adequately addressed or require additional information are presented below.

GENERAL COMMENTS

Evaluation of Response to General Comment 2: The response addresses the comment; however, Section 2.3 Previous Investigations should have provided clarification of the specific analytes that were detected during the Phase II Environmental Condition of Property (ECP). Instead of revising the Phase I RFI report, please include that information in the draft Full RFI Work Plan, when developed.

Evaluation of Response to General Comment 4: The response does not address the comment. The response indicates that data validation reports have been included in the report, but does not indicate that a data quality assessment (DQA) has been provided. The Report should include an overall assessment of data usability that specifically addresses the precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS). As an addendum to the Phase I RFI, please provide a DQA that addresses overall data usability and PARCCS.

SPECIFIC COMMENTS

Evaluation of the Response to EPA Specific Comment 2: The response is partially adequate. The response states that concrete wipe sample 57WS04 has been added to Figures 4-1, 4-2, and 6-1 through 6-5; however, the sample does not appear on the referenced figures. As an addendum to the Phase I RFI, please provide revised Figures 4-1, 4-2, and 6-1 through 6-5 that include concrete wipe sample 57WS04.

Evaluation of Response to Specific Comment 11: The response addresses the comment. However, changes on this page have deleted part of the referenced paragraph. As an addendum to the Phase I RFI, please provide a revised data validation report (DVR) to include the missing information.

Evaluation of Response to Specific Comment 13: The response addresses the comment. However, the recovery of 2-fluorobiphenyl (108%) was between the quality control (QC) limit of 35-125% for sample 57SB05-05. As an addendum to the Phase I RFI, please provide a revised DVR to correct this discrepancy.

Evaluation of Response to Specific Comment 14: The response does not address the comment. The response indicates that corrections have been made to the report; however, the report still indicates that only base/neutrals were qualified in sample 57SB03-05 due to surrogate exceedances. Further, sample 57SB03-01 appears to have been removed from the semivolatile organics (SVOA) surrogate table, but an explanation for this removal has not been provided. As an addendum to the Phase I RFI, please provide a revised DVR to indicate that all samples will be qualified due to 2-fluorophenol exceedances, and include sample 57SB03-01 in the table.

Evaluation of Response to Specific Comment 15: The response does not address the comment. The response indicates that the issue of zero percent recoveries of the laboratory control sample (LCS) and matrix spike/matrix spike duplicate (MS/MSD) for p-phenylenediamine was discussed in the DVR, but the DVR only lists the percent recovery and associated qualifications. Further, the effect of the zero percent recoveries on data usability has not been discussed. As an addendum to the Phase I RFI, please provide a revised DVR and a discussion on the usability of p-phenylenediamine data.

Evaluation of Response to Specific Comment 16: The response addresses the comment. However, it should be noted that the Region 2 standard operating procedure for metals validation is based on evaluation of Contract Laboratory Program (CLP) data performed under statement of work (SOW) ILM05.3 and was published in 2006. A revised SOW (ISM01.2) was issued for the CLP in 2010 that requires the analysis of a post-digest spike to assist in the interpretation of matrix spike recoveries. It is recommended that for future RFI investigations, post-digest spikes are analyzed and assessed during data validation.

Enclosure #4

EVALUATION OF THE DECEMBER 15, 2010 NAVY RESPONSE TO EPA COMMENTS DATED OCTOBER 7, 2010 ON THE DRAFT PHASE I RCRA FACILITY INVESTIGATION WORK PLAN, SWMU 79 – NAVY OPERATIONS ON CABRAS ISLAND DATED AUGUST 20, 2010

NAVAL ACTIVITY PUERTO RICO
CEIBA, PUERTO RICO
EPA ID No. PR2170027203

Submitted to:

U.S. Environmental Protection Agency
Region 2
290 Broadway
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Submitted by:

TechLaw, Inc.
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EPA Task Order No.	**002**
Contract No.	**EP-W-07-018**
TechLaw TOM	**Cathy Dare**
Telephone No.	**315-334-3140**
EPA TOPO	**Timothy Gordon**
Telephone No.	**212-637-4167**

March 7, 2011
(revised by EPA March 10, 2011)

EVALUATION OF THE DECEMBER 15, 2010
NAVY RESPONSE TO EPA COMMENTS DATED OCTOBER 7, 2010
ON THE DRAFT RCRA FACILITY INVESTIGATION WORK PLAN,
SWMU 79 – NAVY OPERATIONS ON CABRAS ISLAND
DATED AUGUST 20, 2010

NAVAL ACTIVITY PUERTO RICO
CEIBA, PUERTO RICO
EPA ID No. PR2170027203

The following comments were generated based on an evaluation of the December 15, 2010 Navy Response to EPA Comments dated October 7, 2010 on the *Draft Phase I RCRA Facility Investigation Work Plan, SWMU 79 Navy Operations on Cabras Island*, dated August 20, 2010, for Naval Activity Puerto Rico in Ceiba, Puerto Rico (hereinafter referred to as the Draft Work Plan.) The *Final Phase I RCRA Facility Investigation Work Plan, SWMU 79 Navy Operations on Cabras Island*, dated December 15, 2010 (hereinafter the Final Phase I RFI Work Plan) was also reviewed for conformance to the Navy's responses to the comments. Only those comments which have not been adequately addressed or require additional information are presented below.

GENERAL COMMENTS

Evaluation of the Response to EPA General Comment 1: The response partially addresses the comment. However, because the laboratory has not been selected, laboratory specific standard operating procedures (SOPs), quality control (QC) limits, and quantitation limits (QLs) have not been included in the Work Plan. Additionally, Table 3-2 states that the QLs listed for soil are based on wet weight and that the quantitation limits calculated by the laboratory on a 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. Ensure that when a laboratory is selected, laboratory specific SOPs, QC limits, and QLs are included in the draft Phase I RFI Report as an addendum. Also, in the draft Phase I RFI Report, when developed, clarify how it was ensured that the laboratory was able to meet screening levels when reporting results are on a dry weight basis.

Evaluation of the Response to EPA General Comment 6: The response partially addresses the comment. The Work Plan has been revised to include the human health screening values (i.e., Regional Screening Levels [RSLs] and Maximum Contaminant Levels [MCLs]) in Table 4-4 for volatile organic compounds (VOCs) and metals. However, semivolatile organic compound (SVOC) human health screening values are not present in Table 4-4. Additionally, VOCs are not proposed for analyses and should not be included in Table 4-4. Finally, the footnotes in Table 4-4 reference the May 2010 RSLs. Note that the RSLs were updated in November 2010. In the draft Phase I RFI Report, when developed, please include the human health screening values for SVOCs in Table 4-4 and ensure that the most current RSLs are used in the RFI.

Evaluation of Response to EPA General Comment 12: The response to this comment is adequate at face value; however, none of the seven new pre-determined boring locations appears to be located in an area where polynuclear aromatic hydrocarbons (PAHs) were previously detected. For example, Table 2-2, Summary of Detected Laboratory Results – Surface Soil – Phase II ECP Report, identifies PAH exceedances in surface soil sample CABSS01. The location of CABSS01 is shown on Figure 2-7, Phase I/II ECP Sample Locations. The sample is located on the northern edge of Launch Pad 1794. Figure 3-2, Pre-Determined Soil Boring Locations, does not show any soil borings located at Launch Pad 1794, in the near vicinity of sample CABSS01. Therefore, it is unclear how the PAH exceedances at this location will be adequately delineated. Please address this concern in the draft Phase I RFI report. The draft Phase I RFI report should also identify any areas where additional delineation of PAHs is necessary.

SPECIFIC COMMENTS

Evaluation of the Response to EPA Specific Comment 3: The response is partially adequate. Additional information on the underground storage tank (UST) associated with Building 2037 has been provided in Section 2.2.1, ECP Study, however, this section does not state whether the tank is empty. Additionally, new information provided in Section 2.2.1 indicates that the tank was installed in 1997 to replace a removed tank at that location. It is unknown whether any sampling was conducted during the previous tank's removal, or whether any evidence of impact was observed during the tank removal. In the draft Phase I RFI Report, please clarify the current status of the existing tank, and to provide further detail on the removal of the former tank at this location.

Evaluation of Response to EPA Specific Comment 13: The response does not address the comment. The response and revised text do not indicate the number of x-ray fluorescence (XRF) readings that will be collected per sample (i.e., typically three readings are collected). Also, the response states, "All readings, per sample location, will be read and recorded at the location where the sample was collected." However, the original comment intended to request that the Final Phase I Work Plan specify if each reading will be collected at the same location within the sample jar (e.g., top of jar, bottom of jar, etc.). Please submit as an Addendum to the Phase I RFI Work Plan that indicates the number of XRF readings that will be collected per sample, the location of where the readings will be collected in the sample jar, and ensure that the XRF procedures identify how sample concentrations will be determined if multiple readings are collected per sample.

Evaluation of Response to EPA Specific Comment 14: The response partially addresses the comment; however, more information is needed. The response indicates that a step-out approach will be employed if additional samples are needed. The response should clarify when additional samples are needed (i.e., concentrations exceed applicable screening levels, etc.) rather than including a general statement that indicates additional samples will be collected to "delineate areas of high contamination." Furthermore, the response should specify the spacing of the step-out sample locations (i.e., every ten feet, 20 feet, etc.) to ensure consistency rather than a

generalized statement that spacing will be determined by whatever is "practical in the field." Please submit as an Addendum to the Phase I RFI Work Plan incorporating the above. Also, in the draft Phase I RFI Report, when developed, please discuss the criteria and other details regarding the approach for determining when and where to collect additional samples.

Evaluation of Response to EPA Specific Comment 18: The response addresses the comment; however, the revised approach for subsurface soil sampling outlined in Section 3.1.3 is inadequate. Section 3.1.3, Surface & Subsurface Soil Sampling Program for Fixed-Base Analysis, on Page 3-5 states, "If FID/PID screening and visual/olfactory observations do not indicate contamination at the surface soil sample, then the subsurface soil samples for laboratory analysis will be collected at the 2-foot interval immediately above the water table." This approach would be appropriate only if FID/PID screening and visual/olfactory observations do not indicate contamination in any of the soil intervals screened during boring installation. If signs of impact are observed below the surface soil sample, a sample should be collected from the interval at which signs of impact were observed. Please submit as an Addendum to the Phase I RFI Work Plan revisions to Section 3.1.3 reflecting this procedure. If that approach is not followed during implementation of the Phase I RFI Work Plan, follow-up sampling may be necessary.

Evaluation of Response to EPA Specific Comment 19: The response partially addresses the comment. While the intent is understood, the first two bullets of the response are incomplete. The first bullet should be revised to state, "A maximum borehole volume (typically three to five borehole volumes plus the amount of any water added during the drilling or installation process) will be removed." A similar revision is needed for the second bulleted item. Please insure that during the Phase I RFI investigations, those procedures are followed during the Monitoring Well Installation, and describe this in the draft Phase I RFI report.

Evaluation of Response to EPA Specific Comment 29: The response partially addresses the comment. Some items of concern have been clarified; however, the response does not address management of used personal protective equipment (PPE) or disposable boring installation and sampling equipment. Additionally, the response does not specify how composite samples are collected to reduce loss of volatiles. It is noted, however, that these two issues are addressed appropriately in Section 3.4.3, Investigation Derived Waste Management, of the Final Phase I RFI Work Plan. As such, no additional revision to the Final Phase I RFI Work Plan is necessary.

Evaluation of Response to EPA Specific Comment 33: The response partially addresses the comment. Please assure that the data validation reports (DVRs) in the draft Phase I RFI report include discussions on surrogates, internal standards, post digest spikes, field duplicates, the extent of outlier exceedances, which results were affected, and how results were qualified.

Evaluation of Response to EPA Specific Comment 34: The response addresses the comment. However, the screening criteria tables provided in the revised document require revision as described below:

- Table 4-2 is titled Groundwater Screening Values but surface water screening values are presented on the table. Revise the title of the table to reflect the screening values presented.

- Table 4-4, Human Health Screening Values, does not present screening values for SVOCs, perchlorate, or Total Petroleum Hydrocarbons Diesel Range Organics/Gasoline Range Organics (TPH DRO/GRO). Revise Table 4-4 to include screening values for these constituents since site media will be analyzed for these constituents.

Evaluation of the Response to EPA Specific Comment 39: The response partially addresses the comment. Screening values for VOCs have been removed from Tables 4-1 through 4-3, but remain present in Table 4-4. Revise Table 4-4 to remove VOC screening values from it, to avoid confusion.

Evaluation of the Response to EPA Specific Comment 40: The response addresses the comment. However, the text of the response has not been incorporated into the Final Phase I Work Plan. Further, it should be noted that there are some human health screening criteria provided in Table 4-4 that are also lower than the QLs specified in Table 3-2. The Navy should also indicate that a similar evaluation will be performed in the human health risk assessment if the laboratory cannot achieve the human health screening values.

ENCL. #5

COMMONWEALTH OF PUERTO RICO
Office of the Governor
Environmental Quality Board

PUERTO RICO VERDE

ENVIRONMENTAL EMERGENCIES RESPONSE AREA

January 19, 2011

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

RE: TECHNICAL REVIEW RESPONSE TO COMMENTS
DRAFT PHASE I RCRA FACILITY INVESTIGATION WORK PLAN
SWMU 79 – NAVY OPERATIONS ON CABRAS ISLAND
NAVAL ACTIVITY PUERTO RICO (NAPR)
CEIBA, PR PR2170027203

Dear Mr. Gordon:

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

The Navy's responses to our comments are acceptable with some exceptions. Enclosed please find PREQB's evaluation of responses to comments. If you have any additional comment or question please feel free to contact Gloria M. Toro Agrait at (787) 767-8181 extension 3586 or myself at extension 6141.

Cordially,

Wilmarie Rivera
Federal Facilities Coordinator
Environmental Emergencies Response Area

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

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Technical Review of the Navy Reponses to PREQB Comments
Draft Phase I RCRA Facility Investigation Work Plan
SWMU 79 – Navy Operations on Cabras Island
Naval Activity Puerto Rico, Ceiba, Puerto Rico
PR2170027203

The Navy responses to PREQB comments on the Draft Phase I RCRA Facility Investigation Work Plan for SWMU 79 are acceptable, with the exception of the following comments.

1. PREQB Comment 7Page 3-4, Section 3.1.3:
   a. Please include details on how sediment samples for GRO will be collected and clarify whether samples will be collected in a coring device (i.e., TerraCores) or whether field preservation will be used.

      Navy Response to PREQB Specific Comment 7(a): The open water sediment sampling program is discussed in Section 3.1.6. The work plan has been corrected in removing the reference for analyzing the sediment sample for TPH DRO / GRO.

      PREQB Evaluation of Response: The original comment was referring to the correct section but incorrectly referred to "sediment" samples instead of "soil" samples. Therefore, please respond to the original comment for the collection of soil samples. Please note that the collection methods provided in the SOPs F102 and F301 in the Final RCRA Facility Investigation Management Plans (Baker, 1995) for VOC soil samples are outdated and not consistent with current procedures. Typical VOC collection procedures in solid matrices have been updated since 1995 (SW-846 method 5035 was introduced in December 1996 and the newer version of this method,5035A, was introduced in July 2002). The VOC collection procedures in solid matrices must be updated to meet current collection procedures and document the method that will be used in this work plan.

2. PREQB Comment 8, Page 3-6, Section 3.1.4: Please include the time period between well development and groundwater sampling. As per the *Ground-Water Sampling Guidelines for Superfund and RCRA Project Managers, Office of Solid Waste and Emergency Response, EPA 542-S-02-001, May 2002,* the time for a well to re-stabilize after development is dependent on site-specific geology and should be specified in the site sampling plan.

   Navy Response to PREQB Specific Comment 8: Section 3.1.4 provides a minimum of 24 hours is required between well development and sampling. Section 3.1.4 has been revised to delete the word "typically".

   Evaluation of Response: According to EPA's 1995 USEPA OSWER article EPA/540/S-95/504 by Puls and Barcelona, typically, one to two weeks is required for equilibration. Please provide more detail on how the timeframe of a minimum of 24 hours were determined and briefly discuss the geologic considerations for this determinations.

3. PREQB Comment 17, Table 3-2:

h. The QLs listed for metals in aqueous samples appear very high and more appropriate for analysis via 6010C instead of 6020A. Please verify these QLs with the laboratory and/or procure a laboratory that is capable of reporting lower QLs. Most of the listed QLs appear to be high by about one order of magnitude compared to QLs typically reported by method 6020A. It is important to note that many of the aqueous metals QLs exceed the risk screening levels (ecological groundwater screening levels presented in Table 4-2 as well as the May 2010 EPA RSLs) and therefore lower QLs are really needed in order to achieve project objectives. Specific exceedance of risk screening levels are as follows:
   i. Antimony QL (20) > EPA Tap water RSL (1.5)
   ii. Arsenic QL (10) > EPA Tap water RSL (0.045)
   iii. Cadmium QL (5) > EPA Tap Water RSL (1.8)
   iv. Chromium QL (10) > EPA Tap Water RSL (0.043)
   v. Cobalt QL (10) > EPA Tap Water RSL (1.1)
   vi. Vanadium QL (10) > EPA Tap Water RSL (0.26)
   vii. Copper QL (20) > ecological groundwater screening levels (3.73)
   viii. Nickel QL (40) > ecological groundwater screening levels (8.28)
   ix. Silver QL (10) > ecological groundwater screening levels (0.23)

Navy Response to PREQB Specific Comment 17(h): The Navy conducted a comparison of quantitation limits from different laboratories and found that the quantitation limits for Method 6020A provide lower reporting limits than Method 6010C. The Navy is aware that many of the reporting limits exceed the ecological groundwater screening levels presented in Table 4-2 as well as the May 2010 Regional Screening Levels.

PREQB Evaluation of Response: It is PREQB's preference for the quantitation limits to meet the data quality objectives. Please note that for all metals, the QLs provided by the Navy for the 6020 analysis of aqueous samples are much higher than QLs typically observed by PREQB for this method. The table below compares typical QLs to those provided by the Navy as well as the standard EPA CLP methodology for ICP/MS. Please provide additional information as to why your lab cannot achieve typical QLs for this method.

Quantitation Limits for SW-846 Method 6020A (ICP/MS)						
Metals by ICP/MS		**Proposed QLs**	**Lab 1 QLs**	**Lab 2 QLs**	**Lab 3 QLs**	**EPA CLP Method QLs**
(ug/L)	Antimony	20	0.05	1.0	0.5	2
6020A	Arsenic	10	0.5	0.40	0.5	1
	Barium	10	0.05	50	0.5	10
	Beryllium	4.0	0.03	0.40	0.5	1
	Cadmium	5.0	0.03	0.50	0.5	1
	Chromium	10	0.2	10	0.5	2
	Cobalt	10	0.03	NA	0.5	1
	Copper	20	0.1	NA	0.5	2
	Lead	5.0	0.03	1.0	0.5	1
	Nickel	40	0.2	5.0	0.5	1

Quantitation Limits for SW-846 Method 6020A (ICP/MS)						
Metals by ICP/MS		**Proposed QLs**	**Lab 1 QLs**	**Lab 2 QLs**	**Lab 3 QLs**	**EPA CLP Method QLs**
	Selenium	10	1.5	5.0	1	5
	Silver	10	0.03	0.50	0.5	1
	Thallium	10	0.03	0.20	0.5	1
	Tin	10	0.1	NA	NA	NA
	Vanadium	10	0.3	5.0	0.5	5
	Zinc	20	0.75	20	5	2

Enclosure #6

EVALUATION OF THE NOVEMBER 24, 2010 NAVY RESPONSE TO EPA COMMENTS DATED OCTOBER 7, 2010 ON THE DRAFT PHASE I RCRA FACILITY INVESTIGATION WORK PLAN SWMU 80 – DRAINAGE DITCH NEAR BUILDING 207, DATED AUGUST 17, 2010

NAVAL ACTIVITY PUERTO RICO
CEIBA, PUERTO RICO
EPA ID No. PR2170027203

Submitted to:

U.S. Environmental Protection Agency
Region 2
290 Broadway
New York, NY 10007-1866

Submitted by:

TechLaw, Inc.
205 West Wacker Drive
Suite 1622
Chicago, Illinois 60606

EPA Task Order No.	**002**
Contract No.	**EP-W-07-018**
TechLaw TOM	**Cathy Dare**
Telephone No.	**315-334-3140**
EPA TOPO	**Timothy Gordon**
Telephone No.	**212-637-4167**

March 1, 2011
(revised by EPA on March 10, 2011)

EVALUATION OF THE NOVEMBER 24, 2010
NAVY RESPONSE TO EPA COMMENTS DATED OCTOBER 7, 2010
ON THE DRAFT PHASE I RCRA FACILITY INVESTIGATION WORK PLAN
SWMU 80 – DRAINAGE DITCH NEAR BUILDING 207, DATED AUGUST 17, 2010

NAVAL ACTIVITY PUERTO RICO
CEIBA, PUERTO RICO
EPA ID No. PR2170027203

The following comments were generated based on review of November 24, 2010 Navy Response to EPA Comments dated October 7, 2010 on the *Draft Full RCRA Facility Investigation Work Plan, SWMU 80 – Drainage Ditch Near Building 207*, dated August 17, 2010. TechLaw also reviewed the *Final Phase I RCRA Facility Investigation Work Plan, SWMU 80 – Drainage Ditch Near Building 207* (Work Plan), dated November 24, 2010 for conformance with the Navy's responses. Only those responses not adequately addressed, or partially addressed are included below.

GENERAL COMMENTS

Evaluation of the Response to EPA General Comment 1: The response partially addresses the comment. However, because the laboratory has not been selected, laboratory specific standard operating procedures (SOPs), quality control (QC) limits, and quantitation limits (QLs) have not been included in the Work Plan. Additionally, Table 3-3 states that the QLs listed for soil are based on wet weight and that the quantitation limits calculated by the laboratory on a 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. Ensure that when a laboratory is selected, laboratory specific SOPs, QC limits, and QLs are included in the draft Phase I RFI Report as an addendum. Also, in the draft Phase I RFI Report clarify how it was ensured that the laboratory was able to meet screening levels when reporting results are on a dry weight basis.

Evaluation of the Response to EPA General Comment 2: The response partially addresses the comment. However, the decision process behind the selection of sample locations and depths and why it will address study goals is not clearly stated. In the draft Phase I RFI Report, when developed, include a more specific rationale behind why the number and locations of samples is sufficient to meet study goals.

Evaluation of the Response to EPA General Comment 6: The Navy's response does not fully address the intent of EPA General Comment 6. EPA and TechLaw are aware that Section 4.6.2, Human Health Screening Values, indicates that Tap Water Regional Screening Levels (RSLs) will be used in the Full RFI screening for groundwater, but acknowledges that Maximum Contaminants Levels (MCLs) will also be used. The intent of EPA General Comment 6 was to

recommend that where EPA Tap Water RSLs are more protective than MCLs, EPA Tap Water RSLs be used in determining and delineating the nature and extent of contamination in groundwater. Given that a human health risk assessment (HHRA) will not be conducted as part of the RFI, it is important the RFI data evaluation confirms or justifies the decisions about whether or not SWMU 80 will be recommended for a CMS. It is recommended that such justifications be risk-based for all media; therefore, the use of EPA Tap Water RSLs rather than MCLs (when EPA Tap Water RSLs are more protective) is recommended. While MCLs are the regulatory limit, delineating to the EPA Tap Water RSL, when RSLs are more protective than MCLs, will allow for a more protective data evaluation in the RFI in support of a decision for/against performing a CMS. In the draft Phase I RFI Report, when developed, clarify that EPA Tap Water RSLs were used to delineate any groundwater contamination when EPA Tap Water RSLs are more protective than MCLs, or alternatively, provide justification for not following this approach.

Evaluation of the Response to EPA General Comment 7: The response is partially adequate. The Work Plan has been revised to include the human health screening values (i.e., Regional Screening Levels [RSLs] and Maximum Contaminant Levels [MCLs]) in Table 4-4. However, it is noted the footnotes reference the May 2010 RSLs. Note that the RSLs were updated in November 2010. Ensure that the most current RSLs are used in the draft Phase I RFI report, when developed.

SPECIFIC COMMENTS

Evaluation of the Response to EPA Specific Comment 3: The response is not adequate. The text implies that clarity of water based on visual determination may be the only limit placed on well development. Please submit a written addendum to the Phase I RFI work plan to clarify that during well development, clarity of water based on visual observation may be used in conjunction with other limits, but not as a sole limit, and discuss other criteria that may be utilized.

Evaluation of the Response to EPA Specific Comment 7: The response partially addresses the comment. However, volatile organic compound (VOC) samples require overfilling to form a meniscus to eliminate bubbles which cannot be achieved by filling the sample bottle directly with the surface water. Please submit a written addendum to the Phase I RFI work plan that clarify that such a procedure is followed during VOC sample collection, or provide an alternate method to collect VOC samples that will eliminate air bubbles.

Evaluation of Response to EPA Specific Comment 13: The response appears partially adequate. However, Section 4.7 should also state that the data validation reports will include discussions on surrogates, internal standards, post digest spikes, field duplicates, the extent of outlier exceedances, which results were affected, and how results were qualified. Please submit a written addendum to the Phase I RFI work plan that clearly state this.

Evaluation of the Response to EPA Specific Comment 20: The response addresses the comment. However, Table 3-2 needs to be revised to indicate that aqueous investigation derived waste (IDW) samples will be analyzed for Appendix IX semivolatile organic compounds (SVOCs) and pesticides, as well as reactivity, corrositvity, and ignitability (RCI). Also, this table needs to be revised to indicate that solid IDW samples will be analyzed for toxicity characteristic leaching procedure (TCLP) organics (including SVOCs, and pesticides) in addition to TCLP metals and volatiles, and RCI. Please submit a written addendum to the Phase I RFI work plan that includes a revised Table 3-2 to provide this information.

ENCL. #7

COMMONWEALTH OF PUERTO RICO
Office of the Governor
Environmental Quality Board

PUERTO RICO VERDE

ENVIRONMENTAL EMERGENCIES RESPONSE AREA

January 13, 2011

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

RE: TECHNICAL REVIEW RESPONSE TO COMMENTS
DRAFT PHASE I RCRA FACILITY INVESTIGATION
WORK PLAN FOR SWMU 80
NAVAL ACTIVITY PUERTO RICO (NAPR)
CEIBA, PR PR2170027203

Dear Mr. Gordon:

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

Joint comments between the HWPD and the FFC are being sent in order to avoid comment duplicity. Enclosed please find PREQB's comments issued as part of the technical review. If you have any additional comment or question please feel free to contact Gloria M. Toro Agrait at (787) 767-8181 extension 3586 or myself at extension 6129.

Cordially,

Wilmarie Rivera
Federal Facilities Coordinator
Environmental Emergencies Response Area

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

Cruz A. Matos Environmental Agencies Building
Ponce de León Avenue 1375, San Juan, PR 00926-2604
PO BOX 11488, Santurce, PR 00910
Tel. 787-767-8181 • Fax 787-7767-8118

Technical Review of the Response to Comment on the Draft Phase 1 RCRA Facility Investigation Work Plan for SWMU 80 – Drainage Ditch Near Building 207
Naval Activity Puerto Rico, Ceiba, Puerto Rico - PR2170027203
November 24, 2010

1. PREQB General Comment 2: Please consider the collection of co-located sediment and surface water samples as opposed to the separate samples that are currently proposed. The data derived from co-located samples collected during the same deployment will aid in the understanding of site conditions.

   Navy Response: The three proposed sediment sample locations presented on Figure 3-2 were chosen to fill data gaps in the previous 2008 and 2009 sediment sampling events. The proposed surface water sample locations (80SD01 through 80SD06) will be collected in the same locations as the previous sediment samples (56ASD01, 56ASD02, 56ASD05, 56ASD06, 56ASD07, 56ASD10).

   Evaluation of Response: Although collecting co-located surface water and sediment samples is the preferred approach, the response is accepted. Please add the clarifying text of the response to the text of the work plan.

2. PREQB Page-Specific Comment 2, Page 2-2, Section 2.2.2:

   a. Please provide information on possible source(s) for the pesticides identified in environmental samples at SWMU 80.

      Navy Response: The purpose of performing the Phase I RFI is to determine presence or absence of contaminants and the need for further characterization of SWMU 80. The current sampling data is not sufficient to determine a possible source for pesticide contamination.

      Evaluation of Response: Please clarify whether a historical records search was conducting prior to scoping for the Phase I RFI. A review of historical records is helpful in determining what chemicals were used, stored or disposed of at a site. If such a review has been conducted, please clarify what information was obtained concerning the use, storage or disposal of pesticides at SWMU 80. If a records search has not been conducted, please ensure that this is done as part of the Phase I RFI.

   d. The presence of the orange precipitate in the drainage ditch occurs from approximately 30 feet upstream of sediment sample location 56A-SD01 to the culvert immediately downgradient of this sample location. Please depict the location of this culvert on Figure 2-2. In addition, please provide a description of this culvert including possible function of the culvert as it would appear to be located within a forested wetland and not associated with any existing road.

Navy Response: The estimated location of the culvert has been added to Figure 2-2. During the Phase I RFI the location of the culvert will be survey located.

Evaluation of Response: The culvert is not depicted on Figure 2-2 as stated in the response. Please include the culvert on Figure 2-2 and discuss this culvert in terms of its function and its potential role as a contributing source of contaminants to the ditch as part of the RFI report.

3. PREQB Page-Specific Comment 4b, Page 3-2, Section 3.1: Please include details on how soil samples for VOCs will be collected and clarify whether samples will be collected in a coring device (i.e., TerraCores) or whether field preservation will be used.

   Navy Response: Section 3.1 has been revised to indicate that soil sample acquisition procedures for VOC analysis are located in the Final RCRA Facility Investigation Management Plans (Baker 1995)

   Evaluation of Response: Typical VOC collection procedures in solid matrices have been updated since 1995 (SW-846 method 5035 was introduced in December 1996 and the newer version of this method,5035A, was introduced in July 2002). Therefore, please update the VOC collection procedures in solid matrices to meet current collection procedures and document the method that will be used in this work plan.

4. PREQB Page Specific Comment 6, Page 3-4, Section 3.3: Please include the time period between well development and groundwater sampling. As per the *Ground-Water Sampling Guidelines for Superfund and RCRA Project Managers, Office of Solid Waste and Emergency Response, EPA 542-S-02-001, May 2002,* the time for a well to re-stabilize after development is dependent on site-specific geology and should be specified in the site sampling plan.

   Navy Response: Based on knowledge of the site geology a minimum of 24 hours is required between well development and sampling. Section 3.3 has been revised to specify no sampling for a minimum of 24 hours after well development.

   Evaluation of Response: Please provide additional detail on how it was determined that 24 hours is a suitable waiting period for physical and chemical equilibration of the aquifer in the area of newly installed wells. According to EPA's 1995 USEPA OSWER article EPA/540/S-95/504 by Puls and Barcelona, typically, one to two weeks is required for equilibration. The response indicates that the 24-hour time frame was determined based on site geology. Please provide the methods used or calculations employed in the determination of this brief timeframe.

5. PREQB Page-Specific Comment 7a, Page 3-5, Section 3.4: Please include details on how sediment samples for VOCs will be collected and clarify whether samples will

be collected in a coring device (i.e., TerraCores) or whether field preservation will be used.

Navy Response: Section 3.4 has been revised to indicate that sediment sample acquisition procedures are located in the Final RCRA Facility Investigation Management Plans (Baker 1995)

Evaluation of Response: Please refer to PREQB's Evaluation of Response to Comment 4b.

6. PREQB Page-Specific Comment 13, Page 4-5, Section 4.6.1.2: Water hardness from a stream present within the general region of the site is proposed to represent water hardness for the surface water samples collected from the drainage ditch. Although acceptable to initially develop surface water screening values, site-specific water hardness should be used in determining the site-specific screening values for metals that are hardness-dependent. It is unclear why water hardness is not analyzed directly from the drainage ditch for each of the proposed surface water samples. This parameter is relatively inexpensive to analyze and is more appropriately collected from the ditch itself rather than rely on a regional value that may not reflect site conditions. Please consider adding water hardness to the list of parameters to be analyzed at each surface water sample location.

   Navy Response: The development of screening values for hardness dependent metals using EPA accepted standardized values is preferred to using a small data set from a single round of water hardness data collected at the site. No revisions to the text of the Phase I RFI Work Plan for SWMU 80 are required.

   Evaluation of Response: It would be preferable to collect site-specific water hardness data. However, if site-specific water hardness data are not collected during the RFI, PREQB prefers a more conservative approach where the mean (or the 95 percent lower confidence limit of the mean - not the upper confidence limit) is used to calculate water hardness-dependent screening values.

7. PREQB Page-Specific Comment 17, Table 3-3:

   a. To facilitate review and to demonstrate achievement of data quality objectives, please include the project action limits presented in Tables 4-1 through 4-4 on Table 3-3.

      Navy Response: The intent of separate tables (Tables 4-1 through 4-4) to present soil, surface water, sediment and human health screening values was to promote clarity and easy accessibility of the data something that would be sacrificed if action limit values for all media were presented on a single table. Project action limits for all sampling media will not be included on Table 3-3. No revisions to the Tables included in Phase I RFI Work Plan for SWMU 80 are required.

Evaluation of Response: In addition to presenting the PALs on Tables 4-1 through 4-4, please present the lowest PAL on Table 3-3 or prepare a new table that compares the PALs to the reporting limits as a means of demonstrating whether the reporting limits are at or below the PALs. This is an important step in evaluating whether the proposed investigation will meet data quality objectives.

d. The QLs listed for metals in aqueous samples appear very high and more appropriate for analysis via 6010C instead of 6020A. Please verify these QLs with the laboratory and/or please consider procuring a laboratory that is capable of reporting lower QLs. Most of the listed QLs appear to be high by about one order of magnitude compared to QLs typically reported by method 6020A. It is important to note that many of the aqueous metals QLs exceed the risk screening levels (ecological groundwater screening levels presented in Table 4-2 as well as the May 2010 EPA Regional Screening Levels [RSLs]) and therefore lower QLs are really needed in order to achieve project objectives. Specific exceedances of risk screening levels are as follows:

i. Antimony QL (20) > EPA Tap water RSL (1.5)
ii. Arsenic QL (10) > EPA Tap water RSL (0.045)
iii. Cadmium QL (5) > EPA Tap Water RSL (1.8)
iv. Chromium QL (10) > EPA Tap Water RSL (0.043)
v. Cobalt QL (10) > EPA Tap Water RSL (1.1)
vi. Vanadium QL (10) > EPA Tap Water RSL (0.26)
vii. Copper QL (20) > ecological groundwater screening levels (3.73)
viii. Nickel QL (4) > ecological groundwater screening levels (8.28)
ix. Silver QL (10) > ecological groundwater screening levels (0.23)

Navy Response: The Navy conducted a comparison of quantitation limits from different laboratories and found that the quantitation limits for Method 6020A provide lower reporting limits than Method 6010C. The Navy is aware that many of the reporting limits exceed the ecological groundwater screening levels presented in Table 4-2 as well as the May 2010 Regional Screening Levels.

Evaluation of Response: It is PREQB's preference for the quantitation limits to meet the data quality objectives. Please note that for all metals, the QLs provided by the Navy for the 6020 analysis of aqueous samples are much higher than QLs typically observed by PREQB for this method. The table below compares typical QLs to those provided by the Navy as well as the standard EPA CLP methodology for ICP/MS. Please provide additional information as to why your lab cannot achieve typical QLs for this method.

Quantitation Limits for SW-846 Method 6020A (ICP/MS)						
Metals by ICP/MS		Proposed QLs	Lab 1 QLs	Lab 2 QLs	Lab 3 QLs	EPA CLP Method QLs
(ug/L)	Antimony	20	0.05	1.0	0.5	2
6020A	Arsenic	10	0.5	0.40	0.5	1
	Barium	10	0.05	50	0.5	10
	Beryllium	4.0	0.03	0.40	0.5	1
	Cadmium	5.0	0.03	0.50	0.5	1
	Chromium	10	0.2	10	0.5	2
	Cobalt	10	0.03	NA	0.5	1
	Copper	20	0.1	NA	0.5	2
	Lead	5.0	0.03	1.0	0.5	1
	Nickel	40	0.2	5.0	0.5	1
	Selenium	10	1.5	5.0	1	5
	Silver	10	0.03	0.50	0.5	1
	Thallium	10	0.03	0.20	0.5	1
	Tin	10	0.1	NA	NA	NA
	Vanadium	10	0.3	5.0	0.5	5
	Zinc	20	0.75	20	5	2

8. PREQB Page-Specific Comment 20, Figure 3-1: It would be helpful to include information on potential discharge points associated with Building 207, such as doorways, sewer pipes, and floor drains, piping and any outfalls to aid in determining the appropriate location for surface and subsurface soil samples, the purpose of which is to determine if contamination associated with historic activities as Building 207 is responsible for contamination identified in the drainage ditches.

Navy Response: The purpose of performing the Phase I RFI is to collect current site data used to characterize impacts to the environment and determining the need for further delineation of SWMU 80. Phase I RFI results are used to determine if a Full RFI is required to obtain additional site characterization data and determine possible sources of contamination. The selection of sample locations based on assumptions about Building 207 historic operation and possible discharge points is not a sound scientific method. No revisions to Figure 3-1 of the Phase I RFI Work Plan for SWMU 80 are required.

Evaluation of Response: In order to ensure that samples are located in areas where contamination is most likely to be present and to aid in determining potential sources for contaminants, an understanding of historic site operations, including the locations of where hazardous chemicals were used, stored or disposed of, is important in scoping a Phase I RFI. Section 1.2 states that Building 207 is part of SWMU 80; therefore, an understanding of what chemicals were used, stored and disposed of and

where such activities took place in and around Building 207will aid in determining appropriate placement of samples used to determine presence or absence of contamination at SWMU 80. Please provide the information requested in the original comment.