



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

OCT 14 2010

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 1 and 2 -- Draft Corrective Action Objectives for Terrestrial Avian Omnivores and Preliminary Delineation Investigation for SWMUs 1 and 2 (dated August 13, 2010)
- 2) SWMU 1 and 2 - Response to Comments (RTCs) on the November 19, 2009, Draft Phase I Interim Corrective Measures Work Plan for SWMUs 1 and 2 (dated August 13, 2010)
- 3) SWMU 2 - Draft Basis of Design Report for Interim Corrective Measures (dated August 13, 2010)
- 4) SWMU 45 -- Draft Corrective Measures Study Report (dated July 22, 2010)
- 5) SWMU 68 -- Revised Final Corrective Measures Implementation Work Plan (dated September 3, 2010)
- 6) SWMU 73 -- Extension Request for submission of revised Corrective Measures Study Report

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 1 and 2 - Response to Comments (RTCs) on the November 19, 2009, Draft Phase I Interim Corrective Measures Work Plan for SWMUs 1 and 2; Draft Corrective Action Objectives for Terrestrial Avian Omnivores and Preliminary Delineation Investigation; and Draft Basis of Design Report for Interim Corrective Measures at SWMU 2 (all dated August 13, 2010)

EPA has completed its review of the above documents. As part of that review, EPA requested our consultant, TechLaw Inc. to review those documents. TechLaw's comments are given in the three Technical Reviews (dated September 20, 2010; September 24, 2010; and September 24, 2010, respectively), which I have Emailed to you. Within 60 days of your receipt of this letter, please submit revisions to the above three documents which acceptably address the comments on them in the three Technical Reviews (dated September 20, 2010; September 24, 2010; and September 24, 2010, respectively).

In addition, the Puerto Rico Environmental Quality Board (PREQB) has reviewed the Draft Corrective Action Objectives for Terrestrial Avian Omnivores and Preliminary Delineation Investigation for SWMUs 1 and 2 ("the CAO Report"), and has several comments. Those comments were included with PREQB's letter of September 30, 2010 to myself, which I have Emailed to you. PREQB also has reviewed the Draft Interim Corrective Measures (ICM) Work Plan for SWMU 2, and had several comments. Those comments were included with PREQB's letter of October 6, 2010 to myself, which I have Emailed to you. PREQB also has reviewed the Navy's August 13, 2010 Responses to PREQB's January 2010 comments on the Draft Interim Corrective Measures (ICM) Work Plan for SWMUs 1 and 2, and had several comments. Those comments were included with PREQB's letter of October 14, 2010 to myself, which I have Emailed to you. Within 60 days of your receipt of this letter, please submit revisions to the CAO Report and the ICM Work Plan for SWMU 2, and revisions to your August 13, 2010 Responses to acceptably address PREQB's comments on each.

SWMU 45 – Draft Corrective Measures Study Report (dated July 22, 2010)

EPA has completed its review of the above documents. As part of that review, EPA requested our consultant, TechLaw Inc. to review those documents. TechLaw's comments are given in the Technical Review (dated September 27, 2010) which I have Emailed to you.

PREQB also has reviewed the SWMU 45 – Draft Corrective Measures Study (CMS) Report, and had several comments. Those comments were included with PREQB's letter of September 9, 2010 to myself, which I have Emailed to you.

Within 60 days of your receipt of this letter, please submit revisions to the Draft CMS Report which acceptably addresses comments made in TechLaw's Technical Review (dated September 27, 2010) and PREQB's letter of September 9, 2010.

SWMU 68 – Revised Final Corrective Measures Implementation Work Plan

EPA has completed its review of the Navy's Responses to EPA's June 16, 2010 Comments on the May 14, 2010 CMI Work Plan, and the Revised Final CMI Work Plan, both submitted on September 3, 2010 on behalf of the Navy by Right Way Environmental Contractors, Inc. EPA will conditionally approve the Revised Final CMI Work Plan. However, EPA's full approval cannot be given until the proposed final remedy undergoes public review and comment, pursuant to Section XXVIII of the 2007 Consent Order. In preparation for that, within 45 days of your receipt of this letter, please submit a Statement of Basis outlining the proposed final remedy for SWMU 68.

In addition, PREQB has reviewed the Responses to its Comments on the May 14, 2010 CMI Design and Work Plan, and the September 3, 2010 Revised Final CMI Work Plan. PREQB, in their September 22, 2010 letter to myself indicated that the September 3, 2010 Responses and the Revised Final CMI Work Plan are acceptable. I have Emailed you a copy of PREQB's letter.

SWMU 73 – Extension Request Corrective Measures Study Report

In addition, EPA has reviewed your October 1, 2010 letter to me requesting an extension until May 1, 2011 for submission of a revised CMS Report for SWMU 73. Your letter indicates that the extension is necessary because "The Army has ...determined that additional soil and groundwater sampling must be performed in order to address USEPA and EQB comments" (transmitted with my letter of September 16, 2010). EPA is prepared to approve your extension request, but requests that the Navy, or the Army, on behalf of the Navy, submit the proposal for additional soil and groundwater sampling for EPA's review and approval, prior to implementation. That would better assure that the proposed additional soil and groundwater sampling will be acceptable. Please submit the proposal for additional soil and groundwater sampling within 45 days of your receipt of this letter.

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

Sincerely yours,



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

cc: Ms. Wilmarie Rivera, P.R. Environmental Quality Board
Ms. Gloria Toro, P.R. Environmental Quality Board
Mr. Mark Kimes, Baker Environmental, Inc.
Ms. Cathy Dare, TechLaw Inc.
Mr. Felix Lopez, USF&WS



COMMONWEALTH OF PUERTO RICO
Office of the Governor
Environmental Quality Board



ENVIRONMENTAL EMERGENCIES RESPONSE AREA

September 30, 2010

Timothy Gordon
US Environmental Protection Agency – Region II
290 Broadway – 22nd Floor
New York, New York 10007-1866

**Re: Technical Review of the Draft Corrective
Action Objectives Development for Terrestrial
Avian Omnivores and Preliminary Delineation
Investigation SWMU 1 – Army Cremator Disposal Site
and SWMU 2 – Langley Drive Disposal
Naval Activity Puerto Rico
Ceiba, PR2170027203**

Dear Mr. Gordon:

The Federal Facility Coordinator (FFC) has finished the review of the above-mentioned document. Puerto Rico Environmental Quality Board comments are provided in the attachment.

If you have any additional comments or questions please feel free to contact Gloria M. Toro Agrait at (767) 787-8181 extension 3586 or myself at extension 6141.

Cordially,

Wilmarie Rivera
Federal Facilities Coordinator
Environmental Emergencies Response Area

cc. Gloria M. Toro Agrait, Environmental Permits Officer

**Technical Review Draft Corrective Action Objectives (CAOs) Development for
Terrestrial Avian Omnivores and Preliminary Delineation Investigation
SWMU 1 – Army Cremator Disposal Site and SWMU 2 – Langley Drive Disposal
Naval Activity Puerto Rico, Ceiba, Puerto Rico
PR2170027203
August 13, 2010**

I. GENERAL COMMENTS

1. Overall, the document was well organized and summarized the previous ecological risk assessment activities conducted at each SWMU. As discussed in the report, ecological risks are anticipated at both SWMUs 1 and 2 based on the results of the previously submitted Baseline Ecological Risk Assessment (BERA). Although risks to other ecological receptors at each of these SWMUs are predicted, the Corrective Action Objectives (CAOs) presented in this document address only terrestrial avian omnivores (represented by the American robin). It is unclear why CAOs are also not presented for other terrestrial receptors (i.e., plants and terrestrial invertebrates). Please briefly clarify how the CAOs for these other terrestrial receptors exhibiting risk will be evaluated or developed after the Interim Corrective Measures are implemented at each SWMU. It would appear that developing CAOs for all terrestrial ecological receptors would present the most efficient approach in developing and implementing Interim Corrective Measures rather than the approach proposed.

2. The CAOs presented could not be verified based on Equation 3-1 and information provided in the report. Using lead at SWMU 1 as an example, the following input parameters for lead were identified in the report:

TRV	=	1.63 mg/kg-day (NOAEL from Table 2-11)
BW	=	0.0773 kg (from Section 3 text)
FIR	=	0.00383 kg/day dry weight (from Section 3 text)
EC	=	95% UCL BAF (0.0827 in Appendix E) * 95% UCL soil (632.6 mg/kg)
	=	52.316 mg/kg
PDE	=	0.909 (from Section 3 text)
SC	=	632.6 mg/kg (from Table 2-9)
PDS	=	0.091 (from Section 3 text)
AUF	=	1.0 (from Section 3 text)
HQ	=	1.0 (from Section 3 text)

Substituting the above parameters into Equation 3-1 results in a lead CAO of 0.313 mg/kg while the text identifies a CAO for lead as 197 mg/kg. Please verify that Equation 3-1 and the input parameters are presented correctly. In addition, please provide an example CAO calculation using Equation 3-1 and SWMU specific values (can be presented in Table 3-3).

II. PAGE-SPECIFIC COMMENTS

1. Page 2-10, Section 2.3.1, Last Paragraph: The text states that in the case of non-detected chemicals, risk estimates were derived using maximum reporting limits. However, upon review of Tables 2-7 and 2-8, nondetect results for pesticides and metals were reported down to the method detection limit (MDL) and not the reporting limit. Typically, the MDL is a statistically derived value that is not accurately verified by the laboratory analysis. The reporting limits are accurately verified by laboratory analyses of standards at the unadjusted reporting limit. Please conduct the risk evaluation for non-detected chemicals using the reporting limits (not MDLs) due to the higher accuracy of these numbers.

It is acknowledged that this comment has been issued before and is pending EPA resolution, since PREQB defers to EPA position on this issue. Until EPA decision we will continue including the comment every time we notice it.

2. Page 3-3, Section 3.0: The report states that the CAOs are also presented in Table 3-3. However, Table 3-3 was not presented in the report. Please provide this table. As discussed above under the general comments, the CAOs could not be verified using the information provided. Please verify that Equation 3-1 and the input parameters are presented correctly and provide an example CAO calculation (can be provided in Table 3-3).
3. Page 4-4, Section 4.1.2: Please revise the beginning of the last sentence in the last paragraph to state that additional evaluation is not presented for cadmium and tin.
4. Tables 2-7, 2-8, 2-9, 2-14, 2-15, 2-16, 2-18 and 4-5: Nondetect results for metals and pesticides in these tables are reported at the MDL. As commented on previously, the MDL is a statistically derived value that is not accurately verified by the laboratory analysis. Please revise the listed tables to reflect the reporting of nondetect results down to the reporting limit instead of the MDL. If the reporting limits exceed the comparison criteria, please include a discussion in Sections 2 or 4 of how these exceedances affect the achievement of the project objectives.
5. Tables 3-1 and 3-2: Please include the 95% UCL of the mean (or the maximum) BAF for each COC in these tables that was used to calculate the CAO for each COC.
6. Table 4-1:
 - a. Historical Sample Location 1SS10: Please include a note in the comments column for surface soil samples 1SS10 K and 1SS10 L as to why these two samples were not collected.

- b. Historical Sample Location 1SS13: Please revise the comments column for surface soil sample 1SS13 G to state refusal at 7 inches instead of 9 inches, as per the field notes in Appendix F.
 - c. Historical Sample Location 1SS16: Please include a note in the comments column for surface soil sample 1SS16 K to note refusal at 10 inches, as per the field notes in Appendix F.
7. Table 4-2:
- a. Historical Sample Location 2SS02:
 - i. Surface soil samples 2SS02 B, C, I, J, K, and L are not included in the list of samples at this location. According to the sketch in the field notes, these locations existed. Please add these locations to the table and include a note in the comments column as to why these samples were not collected.
 - ii. Surface soil sample 2SS02 M: Please include a note in the comments column for surface soil sample 2SS02 M to note refusal at 10 inches, as per the field notes in Appendix F.
 - b. Historical Sample Location 2SS03: Surface and subsurface soil samples 2SS03 L are not included in the list of samples at this location. According to the sketch in the field notes, this location existed. Please add this location to the table and include a note in the comments column as to why these samples were not collected.
 - c. Historical Sample Location 2SS10:
 - i. Surface soil samples 2SS10 K and L are not included in the list of samples at this location. According to the sketch in the field notes, these locations existed. Please add these locations to the table and include a note in the comments column as to why these samples were not collected.
 - ii. Please correct the sample identifications for samples 2SS10 M-P from 1SS13 to 2SS10.
 - d. No Association with Historical Sample Locations: The comments column for surface soil sample 2NEWSS03-00 should state refusal at 8 inches instead of 6 inches, as per the field notes in Appendix F.

Appendix B

1. This appendix is incorrectly labeled as SWMU 2. Please correct to indicate this appendix presents the 95% UCL for surface soil samples within SWMU 1.



COMMONWEALTH OF PUERTO RICO
Office of the Governor
Environmental Quality Board



ENVIRONMENTAL EMERGENCIES RESPONSE AREA

October 14, 2010

Timothy Gordon
US Environmental Protection Agency – Region II
290 Broadway – 22nd Floor
New York, New York 10007-1866

**Re: Technical Review of the Response to
PREQB Comments on the Draft Interim
Corrective Measures Work Plan for SWMUs 1 & 2
Naval Activity Puerto Rico
Ceiba, PR2170027203**

Dear Mr. Gordon:

The Federal Facility Coordinator (FFC) and the Hazardous Wastes Permits Division (HWPD) has finished the evaluation of the above-mentioned document. Our comments are provided in the attachment.

If you have any additional comments or questions please feel free to contact Gloria M. Toro Agrait at (767) 787-8181 extension 3586 or myself at extension 6141.

Cordially,

Wilmarie Rivera
Federal Facilities Coordinator
Environmental Emergencies Response Area

cc. Gloria M. Toro Agrait, Environmental Permits Officer

**Technical Review of the Responses to PREQB Comments
On the Draft Interim Corrective Measures Work Plan for SWMUs 1 & 2
US Naval Activity Puerto Rico, Ceiba, Puerto Rico
August 13, 2010**

The responses to PREQB comments are acceptable with the exception of the following comments, where additional clarification or action is requested.

PREQB Comment 15. Page 7-1, Section 7.1:

b. 6th bullet: Please clarify what the data validation requirements are for this program.

Navy Response to PREQB Page-Specific Comment 15b: Future ICM work plans to be developed for SWMUs 1 and 2 will include the following statement: “Copies of all analyses performed including QC data will be certified by a PR chemist.” Since this section refers to the Construction Completion Report, validation is not required.

PREQB Evaluation of Response to PREQB Comment 15b: it is unclear why the response indicates that since this is referring to the Construction Completion Report, validation is not required. Section 7.1 of the final ICM Work Plan contains a bullet which states copies of validation will be included in the completion report. Please clarify if data validation will be performed. In addition, the SAP in Appendix C states that laboratory data “may” be subjected to data validation and that Region II protocols would be used. Please clarify under what circumstances data would not be subject to validation.

PREQB Comment 18: 18. Figure 1-4:

a. This figure indicates that only select locations will be subjected to sampling at both the 0-1 ft bgs and 1-2 ft bgs intervals. Three of the previous soil sampling locations around which additional sampling is proposed to take place (2SS10, 2SS11 and 2SS14) are locations at which only surface soils were collected in 2004. As there does not appear to be data at these three locations to indicate whether there are subsurface impacts, please collect subsurface soil samples in these three areas to delineate potential impacts.

Navy Response to PREQB Page-Specific Comment 18: Sampling depth intervals are based on historic sampling data that indicates contaminants present at 1-2 feet in debris pile areas. Samples located associated with locations 2SS02, 2SS10, 2SS11 and 2SS14 are outside debris pile areas are not expected to have contamination at depth interval of 1-2 feet.

PREQB Evaluation of Response to Comment 18: The plans for the interim corrective measure indicate that there are impacts to the surface soil in the areas outside of the locations in which debris piles were observed. It is not clear why the 1 to 2-foot interval is not expected to be contaminated when there were impacts detected in the 0 to 1-foot interval. Please consider the collection of subsurface samples in the areas of 2SS02, 2SS10, 2SS11 and 2SS14 as part of the delineation effort to define the vertical extent of impacts.



COMMONWEALTH OF PUERTO RICO
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Environmental Quality Board



ENVIRONMENTAL EMERGENCIES RESPONSE AREA

October 6, 2010

Timothy Gordon
US Environmental Protection Agency – Region II
290 Broadway – 22nd Floor
New York, New York 10007-1866

**Re: Technical Review of the Draft Interim
Corrective Measures Work Plan for
SWMU 2 – Langley Drive Disposal Site
Naval Activity Puerto Rico
Ceiba, PR2170027203**

Dear Mr. Gordon:

The Federal Facility Coordinator (FFC) and the Hazardous Wastes Permits Division (HWPD) has finished the review of the above-mentioned document. Our comments are provided in the attachment.

If you have any additional comments or questions please feel free to contact Gloria M. Toro Agrait at (767) 787-8181 extension 3586 or myself at extension 6141.

Cordially,

Wilmarie Rivera
Federal Facilities Coordinator
Environmental Emergencies Response Area

cc. Gloria M. Toro Agrait, Environmental Permits Officer

**Technical Review Draft Interim Corrective Measures Work Plan
for SWMU 2 – Langley Drive Disposal Site
Naval Activity Puerto Rico, Ceiba, Puerto Rico
PR2170027203
August 17, 2010**

General Comments:

1. Prior to conducting any soil removal actions at the site, the *Draft Corrective Action Objectives Development for Terrestrial Avian Omnivores and Preliminary Delineation Investigation report for SWMUs 1 and 2 (Baker 2010)* should be finalized. This will ensure that the proposed soil excavation activities and additional sampling are sufficient to achieve the final CAOs.
2. Please clarify if it is anticipated that debris will remain below the groundwater table. If so, please discuss whether this debris will be a continuing source of contamination to groundwater and surface water.
3. The results of the baseline ecological risk assessment (BERA) are being used to establish CAOs for this site. Please clarify whether the potential for contaminants to leach to groundwater was evaluated, and include a discussion of how the proposed corrective measure will address this transport pathway. Groundwater is considered potable in Puerto Rico, and the CAOs and interim corrective measure should ensure that residual contamination and debris remaining in soils are not a continuing source of contamination to groundwater.
4. Please clarify why a project-specific Sampling and Analysis Plan (SAP) was not prepared in accordance with the Uniform Federal Policy for Quality Assurance Project Plans (March 2005). Submittal of a SAP in this format will allow the reviewers to ensure that all laboratory and field requirements necessary to achieve data quality objectives for this site will be met.

Page-Specific Comments:

1. Page 1-5, Section 1.4:
 - a. Please review the first sentence, as it appears information is missing.
 - b. Please provide a reference in the text for the document that presented the CAOs and indicate whether the document received agency approval.
2. Page 3-1, Section 3.5, Paragraph 1: Please specify that the soap to be used for decontamination will be a non-phosphate soap (e.g., Alconox or equivalent).
3. Page 3-2, Section 3.5.2, Bullet 2: Please clarify that wet decontamination measures may be used for larger equipment (not just reusable hand tools as stated in the second bullet). In addition, wet decontamination measures using a pressure washer (coupled with an Alconox and water wash, as necessary) are appropriate for large equipment, however,

Technical Review
Draft Interim Corrective Measures Work Plan SWMU 2
October 6, 2010
Page 2

decontamination of the smaller tools should be conducted in accordance with the steps outlined in Section 3.5.3.

4. Page 3-3, Section 3.5.3: As metals are constituents of concern at this SMWU, please consider adding a nitric acid rinse followed by an additional ASTM Type II water rinse into the decontamination procedure outlined in this section.
5. Page 4-1, Section 4.1, Paragraph 2: As it was noted earlier in the text that there were debris removal activities that were conducted at SWMU 2 and that vegetation has not been re-established in the areas due to the anticipation of conducting additional work, please clarify if the site will be restored to pre-debris removal conditions.
6. Page 4-2, Section 4.5:
 - a. Please consider including contingency procedures for sampling, handling and disposal of unexpected items of concern should they be encountered during debris removal (e.g., staining or odors associated with contamination not previously identified, containers of unknown substances, etc).
 - b. Although munitions were not identified as being disposed of at SWMU 2, please consider include a contingency plan for handling munitions and explosives of concern (MEC) should it be encountered during the removal.
 - c. Groundwater may be present at the depth of excavation; therefore, please consider including procedures for handling saturated soils and water incidentally collected along with debris/contaminated soil.
 - d. Please consider conducting screening using a photo-ionization detector during debris removal as it is not known what was disposed of at SWMU 2 with certainty.
 - e. Please clarify the apparent discrepancy between the statement, “The presence of wetlands or wetland related vegetation (e.g., mangrove trees) will limit excavation of potentially contaminated soils” and a statement in Section 4.3 which states, “Under no circumstances shall soil removal work be performed within the wetland boundary without notification of the NTR.” Will excavation be allowed in the wetland area with prior notification? If excavation of contaminated soils will not be allowed in the wetland areas, this would appear, based on the contract drawings, to preclude a significant area of impacted soil.
 - f. In paragraph 2, please expand on what is meant by the statement, “During excavation, good engineering practices and appropriate construction methods will be implemented to control both contaminant releases and general exposure to workers.” Please provide a reference to the engineering practices and appropriate construction methods that will be implemented.

Technical Review
Draft Interim Corrective Measures Work Plan SWMU 2
October 6, 2010
Page 3

7. Page 4-2, Section 4.6:
 - a. Please consider adding a contingency plan for collecting samples beneath the staging area liner if it the liner is breached.
 - b. In addition to noting that soil stockpiles will be covered following each day's activities, please note that the polyethylene sheeting will be sufficiently anchored to prevent it from being blown off of the stockpiles by the wind.
8. Page 4-3, Section 4.8: Please clarify how pre-removal and post-removal elevations will be documented to ensure that post-excavation site conditions are consistent with these pre-removal elevations. Restoring site elevations will ensure that clean soil will be placed to a depth of 1 foot or 2 feet, depending on excavation depth, consistent with the CAOs. Note that the CAOs assume that ecological receptor are only exposed to the top 1 or 2 feet of soil and the intent of the removal action is to replace the top 1 or 2 feet with clean backfill.
9. Page 6-5, Section 6.5.8, Paragraph 1: Please specify that the soap to be used for decontamination will be a non-phosphate soap (e.g., Alconox or equivalent).
10. Page 6-6, Section 6.5.8, Paragraph 2: Please make reference in this section to the multi-step decontamination process (as outlined in Section 3.5.3) for use in cleaning non-disposable sampling tools.

Minor Points:

1. Page 4-1, Section 4.4: Please change the title of this section from "Pre-Excavation Surface Soil Sampling" to "Pre- Excavation Soil Sampling" as soil samples will be collected from 1 to 2-feet in addition to the surface interval of 0 to 1-foot.

Appendix A: Phase I Interim Corrective Measures Design Drawings

1. Drawing C-1:
 - a. The limit of vegetation clearing and grubbing shown needs to be expanded to encompass the areas where excavation is planned, as a minimum.
 - b. Topographic contour lines shown should be labeled, indicating associated elevation.
 - c. It is not clear why grubbing is proposed for areas to be excavated. In fact, care must be taken to ensure soil materials bound within the roots are not discarded with the vegetation material as non-contaminated materials.
2. Drawing C-2: It is not clear how the locations for the delineation samples were selected. Please present the rationale used in selecting these locations.

Technical Review

Draft Interim Corrective Measures Work Plan SWMU 2

October 6, 2010

Page 4

3. Drawing D-1: Please alter the safety fence detail to conform to that which is stated in Section 3.2 of the work plan text. The text states that, “Fences will be constructed of orange construction safety fence fabric hung on steel posts set at 10-foot intervals” whereas the detail shows that either metal or wooden posts will be used.
4. Drawing D-6: Please ensure consistency between the details presented on this sheet and the corresponding plan review sheets.

Appendix C: Sampling and Analysis Plan

1. Page 3-1, Section 3.1, Paragraph 1: Please alter the language in the third sentence to reflect that not only will sampling equipment be decontaminated prior to, but also between the collection of samples.
2. Page 3-1, Section 3.1.1, paragraph 2: Please clarify this sentence, “If any delineation sample result exceeds the CAOs additional delineation samples will be located 25 feet from the exceedence in the cardinal direction *opposite* the proposed excavation and the proposed limits of excavation will be revised.” It is unclear where the sample will be located if it is in a direction opposite the proposed excavation. Is this sentence intended to mean that an additional delineation sample will be located at a step-out location 25 feet from the exceedence? If so, please consider rewording for clarity.
3. Page 3-2, Section 3.1.1, confirmation samples:
 - a. Please clarify if a composite sample will be collected every 25 feet along the face of the excavation.
 - b. Please clarify why confirmation samples are not proposed for the bottom of the excavations.
4. Page 3-3, Section 3.1.3, Paragraph 1: Please consider changing the sampling frequency for borrow material from “one sample per borrow source or one sample per 500 cubic yards” to “one sample per 500 cubic yards per borrow source”.
5. Page 3-3, Section 3.3, Paragraph 1: Please collect QA samples in association with the delineation and confirmation soil sampling rather than collecting them in association with confirmation and waste characterization sampling.
6. Page 3-4, Section 3.3, Paragraph 1: Please clarify the subsurface soil sampling interval. Previous references to subsurface soil sampling in the text have noted a depth interval of 1 to 2 feet bgs, whereas the interval noted in the second sentence of this paragraph is 0 to 2 feet bgs.

Technical Review

Draft Interim Corrective Measures Work Plan SWMU 2

October 6, 2010

Page 5

7. Page 3-4, Section 3.3, Bullet 4: Please clarify what is meant in the fourth bullet with respect to the collection of an equipment blank only if a “field instrument” is used. An equipment blank should be collected on any day during which a non-disposable sampling tool is used that requires decontamination.
8. Page 3-5, Section 3.4.3: Please include a final deionized water rinse following the nitric acid/deionized water spray over the sampling equipment.
9. Page 3-6, Section 3.5, Paragraph 1: Please specify in the second sentence that the decontamination fluids, in addition to containing detergent and soils, may also contain dilute solvents and acid.
10. Page 3-6, Section 3.7.1, Paragraph 1: Please also reference that if wastes are determined to be hazardous and require storage in an appropriately constructed and outfitted area, the storage area(s) will be subject to daily inspection and that the waste will not be stored for longer than 90-days.
11. Page 4-1, Section 4.1, Paragraph 1: In addition to the other details provided with respect to the maintenance of a field notebook, please indicate that an erroneous entry will be handled by striking the entry with a single line and acknowledgement of the change with the author’s initials and the date.
12. Page 6 of 7, Table 3-1:
 - a. This table distinguishes between “off-site borrow material” and “backfill” and indicates different testing parameters for each. Please provide an explanation either in the text or as a note in the table between these two types of “common fill”. Also, please consider that the analytical suite to which all backfill samples are subjected should include metals to ensure that soils with concentrations of COCs in excess of the CAOs are not being placed back in the excavation(s). In addition, please consider subjecting all backfill soil samples to the same analyses and include a full suite of analytes on a mass basis (VOCs, SVOCs, etc.) as opposed to just the TCLP to ensure that the fill material is “clean.”
 - b. Please clarify why the sample identifications listed for the sidewall confirmation soil samples do not agree with the sample identifications listed for the sidewall confirmation soil samples on Figure C-4 in the Work Plan.
 - c. The waste characterization soil samples and the borrow fill soil samples are collected as composites, as per this table. Please revise to replace “composite” with “grab” for BTEX and TCLP VOCs, as compositing cannot be performed on samples for these parameters.

Technical Review
Draft Interim Corrective Measures Work Plan SWMU 2
October 6, 2010
Page 6

13. Table 3-2:

- a. Please ensure consistency between the title of the table and the title indicates in the table of contents
- b. Please replace “Low Level PAHs” in the header of the table with “Analytical Parameter.”
- c. Please add quantitation limits for antimony, copper, and zinc in soil.
- d. According to Table 4-3 of *Draft Corrective Action Objectives for Terrestrial Avian Omnivores and Preliminary Delineation Investigation for SWMUs 1 and 2, Naval Activity Puerto Rico (August 13, 2010)*, metals analyses from the 2009 soil samples at this site were performed using SW-846 method 6020 (ICP-mass spectrometry). Please explain why a different analytical approach (6010B-ICP-atomic emission spectroscopy) is proposed here.
- e. Please revise the method number for mercury from 6010B to 7471A (cold vapor atomic absorption).
- f. Although the method numbers listed for BTEX and TPH come from the Technical Specification in Appendix H, these methods are obsolete and are no longer utilized by laboratories. Please revise with current analytical approaches (SW-846 5035A/8260B for BTEX in soil, SW-846 5030A/8260B for BTEX in water, and SW-846 8015B for TPH in soil).

Minor Points:

1. Page 3-2, Section 3.1.1, Paragraph 2: Please insert the word “of” between the words “excavation” and “encounter” in the first sentence.
2. Page 3-2, Section 3.1.1, Paragraph 2: Please change “COAs” to “CAOs” in the fifth sentence.
3. Page 3-2, Section 3.1.1, Paragraph 4: Please insert the word “occurs” between the words “obstructions” and “RWEC” in the first sentence of this paragraph.
4. Page 3-3, Section 3.2, Paragraph 1: Please alter the wording of the fourth sentence to read, “This will minimize any mobilization costs associated with potential re-sampling.”. Or otherwise revise the meaning of the sentence.
5. Page 3-4, Section 3.3, Paragraph 1: Please change “COC” in the third sentence to “CAO”.
6. Page 3-5, Section 3.4.3, Paragraph 1: Please indicate that the dry decontamination procedures are outlined above, as opposed to within the stated section.

Appendix H, Technical Specifications:

1. Specification Section 01 33 00, Subsection 1.3: Please complete this section, as no information is presented on submittal classification.
2. Section 01 35 45.00 10, Page 2, Section 1.4.1: This section of the specification states that the chemical data be acquired, documented, verified, and reported to ensure that the specified precision, accuracy, representativeness, comparability, and completeness requirements are. The requirements for these parameters were not specified in the SAP. Please update the SAP to provide details for these parameters for each method being used in the SAP.
3. Section 01 35 45.00 10, Page 3, Section 1.6.2: This section of the specification states that split samples will be collected. Please include details in the SAP about the collection of the split samples and how the results will be evaluated.
4. Section 01 35 45.00 10, Page 5, Section 3: Please consider adding a sub-section to address the sampling that is associated with determining that the materials used to backfill the excavation areas are clean.
5. Section 01 35 45.00 10, Page 6, Section 3.1.2:
 - a. Please consider moving the delineation sampling section prior to the confirmation sampling section, as this will occur first (also, please note that there are two sections identified as 3.1.2).
 - b. According to this section, the waste characterization soil samples are collected as “thoroughly mixed composite.” Please revise to ensure that compositing of samples is not conducted for BTEX and TCLP VOC analyses of these samples.
 - c. Cadmium is listed as a required metal. However, cadmium was not included on Table 3-2 of the SAP. Please clarify.
 - d. Please clarify why the analyte list for the waste characterization samples includes cadmium, but does not include antimony.
6. Specification 01 57 19.00 20, Page 12, Section 3.2.2: Please clarify what factors dictate whether a Storm Water Pollution Prevention Plan is required for this project, as this work product is not mentioned in the Basis of Design document or the Draft ICM WP.
7. Technical Specification 02 61 13, Page 4, Section 2.2: Please analyze the backfill samples for a full suite of analyses on a mass basis to ensure the planned objectives of providing clean fill in place of contaminated soils is achieved. Also, please ensure consistency between this section and Section 31 23 00.00, Subsection 1.6.

Draft Basis of Design Report

1. Page 2-4, Section 2.4, Paragraph 1: Please provide the CAO for antimony in addition to the other metals listed and indicate that these CAOs are applicable to subsurface in addition to surface soils.
2. Page 2-4, Section 2.5, Paragraph 1: Please indicate that antimony is also a potential ecological risk driver (in addition to the copper, lead, mercury and zinc which are already listed).
3. Page 2-5, Section 2.5:
 - a. The report states that the selected interim corrective measure involving soil removal will eliminate direct exposure pathways for terrestrial plants and invertebrates. Although this is correct, the CAOs have not been developed based on these receptors. Therefore, concentrations of COCs within soil outside of the proposed soil removal areas may still result in impacts to both terrestrial plants and invertebrates. Please amend the text to indicate that the elimination of direct exposure pathways for terrestrial plants and invertebrates will be achieved only in those areas where soil removal followed by placement of clean soil is being conducted.
 - b. The report states that the required depth of soil excavation (1 foot or 2 foot bgs) is based on potential food web exposure for avian, amphibians, reptiles, aquatic invertebrates, and mammalian herbivores. Please delete the reference to aquatic invertebrates as these receptors would not be associated with surface or subsurface soil.
 - c. Please clarify in the second paragraph on this page that the proposed extent of the soil removal activities as shown on the supporting figures represents the initial boundaries which are subject to change pending the results of the delineation sampling. As currently worded, this may not be clear to all readers.
4. Page 3-1, Section 3.2, Bullet 2: Please indicate that subsurface soil samples will be collected in addition to the surface soil samples as part of the delineation efforts.
5. Page 3-1, Section 3.2, Bullet 8: The information presented in the Draft ICM WP for SWMU 2 indicates that excavated soils maybe temporarily stored in covered stockpiles. Please expand this bullet (as well as the following bullet) to reflect this potential scenario.

Technical Review
Draft Interim Corrective Measures Work Plan SWMU 2
October 6, 2010
Page 9

6. Page 3-2, Section 3.2, Bullet 8: Please alter this bullet to reflect that subsurface delineation samples will also be collected and that the analyte list will include antimony in addition to the other metals listed.
7. Page 3-2, Section 3.2, Bullet 10: Please add antimony to the analyte list specified in this bullet item.
8. Page 3-3, Section 3.3, Paragraph 2: Please confirm if excavation activities will be allowed in the wetland area with prior notification to the NTR, as indicated in the Draft Interim Corrective Measures Work Plan. It is understood that the jurisdictional wetland boundaries will be defined prior to commencing excavation work, however, if excavation of contaminated soils will not be allowed in the wetland areas, this would appear, based on the current contract drawings, to preclude the excavation of a significant area of impacted soil.
9. Page 4-3, Section 4.2.4: Please add antimony to the list of COCs, add a bullet with respect to delineation sampling and ensure that there is consistency between what is stated in this section regarding the analyses to which each type of sample will be subjected and that which is stated in the SAP (taking into consideration any changes that may be made to the analytical suite based on comments presented for other documents).
10. Page 4-5, Section 4.5, Paragraph 2: Please clarify the discrepancy between the anticipated amount of soil expected to be removed from SWMU 2 as stated in this section (1,227 cubic yards) versus that which is stated in Section 3.

Minor Points:

1. Page 3-1, Section 3.2, Bullet 1: Please use the word “within” instead of “with” in the sentence that comprises this bullet item.
2. Page 3-1, Section 3.2, Bullet 3: Please remove the word “limits” from the sentence that comprises this bullet.
3. Page 3-3, Section 3.3, Bullet 2: Please change the word “know” to “known” in the second sentence.



September 9, 2010

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

**REVIEW DRAFT CORRECTIVE MEASURES
STUDY REPORT SWMU 45 – AREA OUTSIDE
BUILDING 38 (FORMER POWER PLANT)
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 the 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, Environmental Permits Office

**Technical Review of
Draft Corrective Measures Study Report for
SWMU 45 – Area Outside Building 38 (Former Power Plant)
Naval Activity Puerto Rico, Ceiba, Puerto Rico (PR2170027203)
July 22, 2010**

PAGE-SPECIFIC COMMENTS

1. Page 1-1, Sections 1.1 and 1.2: This document also presents the ecological risk assessment for SWMU 45. Therefore, please revise the purpose and objectives of this report to include a presentation of the ecological risk assessment.
2. Page 5-2, Section 5.2:
 - a. Please clarify why soils down to 10 feet bgs were evaluated in this risk assessment when groundwater is present at depths ranging from 4 to 9 feet bgs. Please describe typical building construction and whether excavations down to 10 feet are typically conducted. Please note that for other sites, subsurface soil down to 6 feet is evaluated for the construction worker due to typical construction practices in Puerto Rico.
 - b. Although an adult fisherman may catch the fish, the fish may be brought home and consumed by all family members or youths and children may also catch the fish. Therefore, EQB prefers the more protective approach of evaluating adults, youths and children for fish ingestion.
3. Page 5-3, Section 5.3.1.1:
 - a. Please provide a discussion of the usability of the data for risk assessment purposes since the data are from historical investigations that may have been performed for different project objectives. As part of this discussion, please include an evaluation of the detection limits for the data as compared to screening criteria used to identify chemicals of potential concern for the risk assessments.
 - b. Appendix A contains data that were used in the risk assessments. Some of the data are qualified as rejected (R). Please clarify if these data were used in the risk assessments. If not, please remove this data from Appendix A.
4. Page 5-8, Section 5.3.1.2.3, Fish Tissue: Due to the potential for natural process to convert inorganic mercury to methyl mercury, EQB prefers to include methyl mercury as a COPC for fish tissue, as mercury is identified as a chemical of potential concern in sediment.
5. Page 5-10, Section 5.3.2.1: Please clarify why a trespasser exposure scenario is evaluated rather than a recreational exposure scenario (i.e., is public access to the site prohibited?) If it is open to the public, EQB prefers that a recreational exposure

scenario be evaluated, where adult, youth and child receptors are quantified, rather than evaluating an adult and youth trespasser.

6. Page 5-11, Section 5.3.2.1:
 - a. Please clarify in the text that groundwater in Puerto Rico is considered potable; and although not currently being used, under a future land use scenario, groundwater is considered a potable drinking water source.
 - b. Fisherman may be exposed to soil, sediment, and surface water while fishing at the site. Please include these environmental media for the fisherman exposure scenario. Also, it is unclear that only adult fisherman would be fishing at the site. EQB's preference would be to evaluate an adult, youth and child for this exposure scenario.
7. Page 5-12, Section 5.3.2.1: Please clarify why a future industrial worker is not evaluated for exposure via ingestion of groundwater. A future worker will consume water while working at a site; therefore, EQB's preference is to include groundwater as an exposure medium for the industrial worker for ingestion exposure since groundwater is considered potable.
8. Page 5-12, Section 5.3.2.2: Please clarify why fisherman and trespassers are not included in the future exposure scenarios in the last sentence of the first paragraph.
9. Tables 5-1 to 5-3: Please revise the column heading for "Regional Screening Level Residential SSL." An SSL denotes a screening level protective of the migration of contamination to groundwater. SSLs are included on the EPA Regional Screening Level table, so it is confusing to refer to "Residential SSLs." The criteria presented on this table are referred to as RSLs, consistent with the text. Please revise this column for clarity to refer to "Residential RSLs."
10. Page 5-16, Section 5.3.2.5 and Table 5-7:
 - a. PREQB prefers a more protective approach for evaluating fish ingestion provided by EPA where it is assumed that 8 oz of fish is consumed at each meal (EPA 2000), and fish is consumed at 7 meals per week, based on a fish study conducted in Puerto Rico (Burger and Gochfeld, 1991).
 - b. As an adult is assumed to be present at a residence for 24 years, EQB prefers a more protective approach where this same exposure duration is applicable to the fisherman, who may fish at the site throughout the time period he resides in the area.
 - c. Children may also ingest fish from the site brought home by fisherman and need to be added as a receptor for the fish ingestion exposure scenario.
 - d. A respiration rate is presented in this table. Please clarify if these values were used in quantifying inhalation exposure, as current EPA guidance (RAGS Part F) differs from this approach.

11. Page 5-18, Section 5.3.3.1: Please add a reference in this section to the table that lists the reference doses and reference concentrations.

Appendix C, Calculation of Chemical Concentrations in Fish Tissue

1. Table C-2: Please clarify why chemicals that are not considered important bioaccumulative chemicals (based on information presented in Table 5-6) are shown on this table, when the note below the table indicates that only chemicals that are important bioaccumulative chemicals are listed on this table.

Appendix D, Chemical Intake Equations

1. Page D-2: Please clarify if the inhalation exposure pathway was quantified in accordance with RAGS Part F, as the equation presented in this appendix differs from the current EPA approach for evaluating inhalation exposures and differs from the calculations presented in Appendix E. Please revise this appendix as applicable.

References:

Burger and Gochfeld. 1991. Fishing a Superfund Site: Dissonance and Risk Perception of Environmental Hazards by Fishermen in Puerto Rico. *Risk Analysis*. 11 (2). 269-277.

EPA, 2000. *Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories. Volume 2 Risk Assessment and Fish Consumption Limits Third Edition.* Office of Water.