



COMMONWEALTH OF PUERTO RICO
Office of the Governor
Environmental Quality Board

Environmental Emergencies Response Area

November 21, 2008

Mr. Timothy R. Gordon
RCRA Programs Branch
Resource Conservation and Special Projects Section
U.S. Environmental Protection Agency
290 Broadway, 22nd Floor
New York, NY 10007-1866

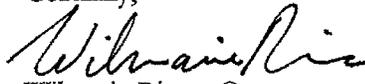
Re: Technical Evaluation of Draft Phase I RCRA Facility Investigation Work Plan, SWMU 76 – Building 2300, Naval Activity Puerto Rico, Ceiba, Puerto Rico

Dear Mr. Gordon:

The Puerto Rico Environmental Quality Board (PREQB) has completed its review of the Draft Phase I RCRA Facility Investigation Work Plan, SWMU 76 – Building 2300, Naval Activity Puerto Rico, EPA ID. No. PR2170027203, Ceiba, Puerto Rico. Enclosed our comments.

If you have any questions or comments about our review, please contact me at (787) 767-8181, extension 6141.

Cordially,


Wilmarie Rivera Otero
Federal Facilities Coordinator

PREQB Technical Evaluation

Draft Phase I RCRA Facility Investigation Work Plan, SWMU 76 – Building 2300, Naval Activity Puerto Rico, EPA I.D. No. PR2170027203, Ceiba, Puerto Rico

INTRODUCTION

This review provides an evaluation of the Draft Phase I RCRA Facility Investigation Work Plan, SWMU 76 – Building 2300, Naval Activity Puerto Rico, Ceiba, Puerto Rico.

The Work Plan describes the activities necessary to obtain data to further characterize the impacts to the environment due to past operations at SWMU 76. A Phase I RFI is required by the NAPR RCRA 7003 Order issued by USEPA Region II.

GENERAL COMMENT

1. Omission from the Work Plan of data from the 2002 surface water and sediment sampling and analysis program precludes a final determination as to the number and locations of additional sediment and surface water samples that should be collected in the RFI. But it is clear that the number and locations of previous samples are not adequate to fully evaluate potential historical releases into the subtidal habitats of Ensenada Honda. All but one of the prior sediment samples (7SD13) appear to have been collected in near shore shallow waters of the intertidal zone, where tidal flushing and wave action would have prevented the deposition and accumulation, over time, of contaminated sediments released from the site as suspended sediment loads in stormwater discharges and overland surface water runoff. Several additional, co-located sediment and surface water samples should be collected from subtidal reaches of the three embayments at SWUM 76, since these are the depositional areas into which suspended sediments contained in surface water runoff are most likely to have settled out of the water column and accumulated since the facility was built.
2. The proposed surface soil sampling program does not provide adequate spatial coverage for what appear, in the aerial photograph of Figure 3-1, to be a combined 30,000 to 40,000 sq. ft. of bare soil and/or lawn areas flanking the west/northwest and east/southeast sides of Building 2300. Because these open lawn/soil areas are likely to represent potential foraging habitat for invertivorous birds, they should be described as potential ecological exposure zones and sampled at 3 or 4 locations on each side of the building for surface soils to a depth no greater than 2 feet, including one or two locations near the oil-water separator.

SPECIFIC COMMENT

1. Page 1-2, Section 1.3 and Figure 1-3. The locations of prior sediment and surface water samples in this figure appear to be spatially out of phase with the aerial photograph, such that some surface water samples appear to fall on paved

surfaces (7SW4 and 7SW6) or perhaps on dry land (7SW2, 7SW3, and 7SW5). Please recheck these plots, discuss whether surface water locations 7SW4 and 7SW6 were sampled beneath piers, and explain why sediments were not sampled at these two locations. Please also further refine this figure for greater clarity by adding labels for: (a) the boat launch; (b) the low tide mark, to illustrate subtidal reaches of the offshore habitats to be sampled; and (c) intertidal areas, including mud flats or vegetated habitats, and onshore lawns or bare soil areas.

2. Pages 1-2 and 1-3, Section 1.3 last paragraph. Please add the sampling of surface water and sediment from additional subtidal locations, within 50 to 100 feet of the low tide elevation of the three embayments abutting SWMU 76 as an objective of the RFI. The previous investigation in 2002 failed to include sample locations in subtidal locations most likely to have retained sediments with site-derived contamination.
3. Page 1-2, Section 1.2. Please expand the site history to describe areas where petroleum/paint/solvent product(s) and waste were stored. Additionally, please describe how and where waste paint (liquids as well as solids, such as chips) were managed.
4. Page 3-1, Section 3.0. Section 1.2 indicates that waste was discharged to the ground surface immediately outside the building, but does not specify the locations of these discharges. The subsurface investigation should include subsurface soil samples in areas where waste was known or suspected to have been discharged to the ground.
5. Section 3.0. Since Section 3.1 discusses only soil sampling, please provide a new, separate section on proposed sediment and surface water sampling. This new discussion should: (a) summarize the analytical data from the surface water and sediment samples collected in 2002; (b) clearly distinguish which samples were collected from intertidal versus subtidal habitats; (c) explain why co-located sediment was not sampled at three surface water locations and why surface water was not sampled at 7SD13; and (d) describe the intertidal and subtidal habitats sampled in 2002 and proposed for additional sampling. Sampling and analysis details should include whether: (a) paired samples of unfiltered and filtered surface water will be collected to analyze total and dissolved metals; and (b) whether sediments will be analyzed for factors that influence bioavailability, such as total organic carbon (TOC) and simultaneously extracted metal: acid volatile sulfide ratios (SEM:AVS).
6. Page 3-1, Section 3.0. Please expand the sediment sampling program to include two (2) additional locations: (1) within the trench drain; and, (2) within the oil/water separator. Such samples would provide data with which to characterize the current contents of these features, as well as possibly identify past contaminants that were discharged to these systems. Should contaminants be identified in the system, a comprehensive sampling of the piping is indicated.
7. Page 3-1, Section 3.1, Paragraph 1. The text, as well as the title of this section, indicates that sediment samples will be collected but Section 1.3 of the Work Plan

states that sediment samples will not be collected because a previous investigation already included this media. In addition, Table 3-1 does not include sediment samples. Please clarify this section accordingly.

8. Page 3-1, Section 3.1. This section indicates that a boring log will be prepared indicating blow counts, lithology, water occurrence. However, blow counts are typically not collected when direct-push technology is used for soil sampling. Please clarify in the revised text.
9. Pages 3-1 and 3-2, Section 3.1. Additional surface soil samples are needed to determine if a release has occurred from Building 2300 and/or the oil-water separator into the two large areas of lawn/bare soil flanking the building on the west/northwest and east/southeast sides. Please recheck the overlay of the drainage boundaries, drainage system, and existing/proposed sample locations in Figure 3-1 and add the appropriate labels. Please consider removing the existing sediment and surface water locations from this figure and preparing a new figure, with the same base map labels, that is dedicated to the prior and newly proposed sediment and surface water sample locations.
10. Pages 3-1 and 3-2, Section 3.1. Please clarify the text to indicate whether only data from the 0 to 1 foot bgs interval will be used for surface soil in the ecological risk assessment (ERA). Please discuss whether the bare soil and/or lawn areas at SWMU 76 are considered unlikely to provide significant habitat for burrowing animals (e.g., land crabs), such that surface soil samples to be evaluated using ecological screening values (ESVs) need not be collected any deeper than 1 foot bgs based on site-specific conditions (e.g., fill overlain by shallow topsoil). However, if the biologically active zone does extend to 2 feet bgs (e.g., burrows of land crabs), then surface soil samples should be collected from 0-2 feet bgs.
11. Page 3-2, Section 3.2, Paragraph 2. The proposal to obtain a groundwater sample from an undeveloped well is consistent with "screening-level" data quality. Should higher-quality data be required, a program consistent with EPA Region 2 guidelines will be required (i.e., developed wells and low-flow sampling).
12. Page 3-3, Section 3.3, Paragraph 1. The groundwater program should be expanded to include analysis of volatile organic compounds (VOCs). Paragraph 1 on Page 1-3 indicates that subsurface soil and groundwater samples will be analyzed for VOCs, SVOCs, and metals.
13. Page 3-4, Section 3.4, Paragraph 3. The text states that soil sample field duplicates will be homogenized and split. Provide clarification in this section that this procedure will be performed for SVOCs and metals only. Soil samples for VOC analysis must not be homogenized.
14. Page 4-1, Section 4.4. Please clarify if the USEPA Regional Screening Levels, which have replaced the USEPA Region 9 Preliminary Remediation Goals, will be used for screening purposes. If so, please update the workplan accordingly.

15. Page 4-1, Section 4.4, last sentence. Please confirm that the surface water ESVs to be used for surface water will include the most recently updated national ambient water quality criteria (AWQC; USEPA, 2006).
16. Page 4-2, Section 4.4. Comments regarding the statistical analysis process:
- Clarify how outlier data points are managed/accounted for in the suite of statistical tests proposed.
 - Clarify if the background datasets is comparable to the site data. Ideally, both datasets should be unbiased and representative of geochemically and anthropogenically similar domains. In addition, the two datasets should be nearly of the same size. In practice, site samples tend to be clustered toward areas of concern (as in this case), which may be a complicating factor. Describe how differences in the two datasets will be accounted for in the statistical comparisons.
 - Clarify how the 95%-UCL is calculated and whether the distributions of the data are appropriately considered. Pro-UCL software is frequently used for such calculations because it takes the data distribution (normal, log-normal, etc.) into consideration.
17. Page 4-2, Section 4.4, 3rd paragraph. Please discuss whether an unimpacted reference habitat will be sampled for sediments and surface water, including intertidal and subtidal reaches resembling those at SWMU 76, to provide representative "background" concentrations of inorganics, so as to: (a) help assess evidence for historical releases into the marine environment; and (b) provide data for use in a future ERA to assess any incremental, site-derived ecological risks separate from naturally-occurring metals in sediment and surface water at SWMU 76.
18. Figure 3-1. Please remove the 2002 sediment and surface water sample locations from Figure 3-1 and prepare a new figure to show the existing and proposed new sediment and surface water sample locations for both intertidal and subtidal habitats.
19. Figure 4-1. USEPA guidance does recommend substitution of a result below the detection limit with DL/2 (or DL or zero) (e.g. section 4.7 of "Data Quality Assessment: Statistical Methods for Practitioners", EPA 2006). However, in other documents (e.g. "ProUCL Version 4.0 Technical Guide", April 2007 or "On the Computation of a 95% Upper Confidence Limit of the Unknown Population Mean Based Upon Data Sets with Below Detection Limit Observations", March 2006), the USEPA (Office of Research and Development) has recommended avoiding substitution methods when determining UCLs or hypothesis testing in favor of tests such as Gehan or Wilcoxon-Mann-Whitney. Please revise this figure to reflect the updated approach the USEPA uses which does not recommend substitution for non-detects and includes the more robust approaches provided by ProUCL or other peer-reviewed, public domain software packages. Also, some of the possible paths in the flow chart seem to have no resolution. For example, there are no statistical tests leading to the "Determination of Significance" portion of the flow chart from the branches ending at "Do Not Perform Right-Tail Test" or "Do Not Perform Proportional Statistics". Do these

paths end with the assumption that there is no statistical difference between background and site samples?

20. Appendix C, Quality Assurance Project Plan

- Sections 4.1 and 5.1 of the QAPP should also mention that the PID will be used for soil screening and not just for ambient air monitoring. In addition, Section 3.1 of the Work Plan mentions that a flame ionization detector (FID) may be used. Therefore, these sections should include an FID also.
- Section 4.2.1 of the QAPP provided details on tuning and calibration of the GC/MS for VOCs. Tuning information for the GC/MS for SVOCs as well as calibration information for the GC/MS for SVOCs and the ICP and CVAA for metals must also be provided.
- Section 4.2.1 of the QAPP states that the USEPA specifies the internal standard to be used on a compound-by-compound basis. This statement is true for CLP methods but not SW-846 methods. Since SW-846 methods are being used for this program (as per Table 3-2 of the Work Plan), this statement should be removed.
- Section 5.2 of the QAPP states that liquid IDW will be analyzed for TCL VOCs. However, Table 3-3 of the Work Plan states that liquid IDW will be analyzed for benzene and RCRA metals. Please clarify.
- Section 5.2 of the QAPP states that solid IDW will be analyzed for TCLP VOCs, SVOCs, metals, pesticides, and herbicides. However, Table 3-3 of the Work Plan states that solid IDW will be analyzed for benzene and RCRA metals. Please clarify.
- Section 6.1 of the QAPP cites older laboratory validation guidelines to be used for the validation of field data. The use of laboratory validation guidelines to validate field procedures for this program is inappropriate. The reference to these guidelines should be removed.
- Section 6.3 of the QAPP is very unclear as to what validation guidelines will be followed. One statement refers the reader to the Region 2 validation worksheets and another statement refers the reader to an older version of EPA validation guidelines. As per Section 3.5 of the Work Plan, the Region II validation SOPs should be followed for this program. If EPA validation guidelines are also used (for parameters where Region II SOPs do not exist), then the most recent versions of these guidelines should be cited (October 1999 for organics and October 2004 for inorganics).
- Section 7.1 of the QAPP discusses the collection of field duplicates for water samples. A discussion on the collection of field duplicates for soil samples should also be included.
- Section 7.1 of the QAPP includes a discussion on using passive diffusion bags for groundwater MS/MSDs. This should be removed as it does not apply to this program.
- Section 7.3 of the QAPP provides details on method blank criteria for VOCs. This section should also include criteria for SVOCs and metals.
- Section 7.3 of the QAPP includes details on corrective action when surrogates are outside criteria in a VOC method blank. This section

should also include corrective action for when surrogates are outside criteria in samples for both VOCs and SVOCs.

- The surrogate corrective action is repeated twice in Section 7.3 of the QAPP. Please delete the second iteration.
- Section 9.1.1 of the QAPP states that field duplicates are collected at a rate of 1 per 20 samples per matrix. However, Section 3.4 of the Work Plan and Section 7.1 of the QAPP state that the field duplicates are collected at a rate of 1 per 10 samples per matrix. Please clarify.
- Section 9.5 of the QAPP should provide specific information on any data that will be used that was generated under other investigations or by other parties. The potential limitations on these data should be noted.