



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
CARIBBEAN ENVIRONMENTAL PROTECTION DIVISION
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October 17, 2008

Mr. Kevin Cloe
Project Manager
Commander Atlantic Division
Naval Facilities Engineering Command
6506 Hampton Boulevard
Norfolk, VA 23508-1278

Re: Review of the Draft Site Inspection/Expanded Site Inspection Sampling and Analysis Plan,
Former Vieques Naval Training Range, Vieques, Puerto Rico

Dear Mr. Cloe:

The U.S. Environmental Protection Agency (EPA) completed the review of the Draft Site Inspection/Expanded Site Inspection Sampling and Analysis Plan, Former Vieques Naval Training Range, Vieques, Puerto Rico, dated July 2008. Enclosed you will find our comments.

If you have any questions, please contact me at (787) 741-5201.

Sincerely,

Daniel Rodriguez
Remedial Project Manager
Response and Remediation Branch

Enclosure

- cc: Wilmarie Rivera, EQB, w/ encl.
- Richard Henry, FWS, w/ encl.
- Daniel Hood, Navy, w/ encl.
- Christopher Penny, Navy, w/ encl.

EPA comments on the *Draft Site Inspection/Expanded Site Inspection Sampling and Analysis Plan, Former Vieques Naval Training Range (VNTR), Vieques, Puerto Rico, dated July 2008*

GENERAL COMMENTS

1. It is not always clear from the SAP text what types of samples are to be collected (i.e., grab samples or composite samples). For example, Worksheet 14 indicates that composite samples will be collected at Area of Concern (AOC) A. However, Worksheet 10 does not discuss composite sampling at AOC A. To avoid potential confusion, it is suggested that the type of samples (e.g., grab samples or composite samples) to be collected at each area be discussed consistently in the SAP text.
2. SAP Worksheet 15 lists “NC” (no applicable criterion) for several compounds. In some cases, NC is listed for all of the screening levels (SLs) for a particular compound (e.g., bromochloromethane on page 161 of the SAP). It is unclear how compounds will be assessed when a SL is not specified. Revise the SAP to clarify how compounds without any specified SLs will be evaluated.
3. In Worksheet 24, the minimum relative response factor (RRF) for many organic compounds is 0.010. However, standard validation procedures call for rejecting data with RRFs less than 0.050. Clarify why lower RRFs are being accepted by the laboratory and if the 0.050 criterion will be used in validation.
4. Worksheet 28 lists quality control (QC) samples for the various toxicity characteristic leaching procedure (TCLP) analyses. However, SAP Worksheet 12 lists “N/A” for the QC samples associated with the different TCLP analyses. Revise Worksheet 12 to present information consistent with Worksheet 28.
5. Several compounds in Worksheet 28 have a percent recovery (%R) lower limit of 10% or less. For example, Worksheet 28-10A on page 323 has a lower %R limit of “0” for the semivolatile organic compound (SVOC) phenol. It is unclear why QC limits as low as 10% are considered acceptable, especially for compounds that are not normally poor performers [e.g., benzo(g,h,i)perylene]. Revise the SAP to justify why %R values of 10% or less should be considered acceptable for each compound. Alternatively, revise the SAP to require tighter QC limits.
6. While the SAP contains all of the Uniform Federal Policy QAPP (UFP QAPP) worksheets, it does not appear that all of the information required by the UFP QAPP is presented. The following are examples of the information that is not included in the SAP:
 - The SAP does not appear to discuss the field, laboratory, and project percent completeness goals.

- It does not appear that a discussion of precision, accuracy, representativeness, comparability, and completeness is provided.
- The SAP does not present an itemized list of what will be presented in the analytical data packages (e.g., second column confirmations, chromatograms before and after each manual integration, etc.).

Revise the SAP to provide all information required by the UFP QAPP or reference where this information can be found.

SPECIFIC COMMENTS

1. **Table ES-1:** The sample analysis list for SWMU 1 – Camp Garcia Landfill includes analysis for VOCs, SVOCs, pesticides, PCBs, inorganics and explosives. The pertinent historical information provided indicates that soil and groundwater data collected in 2004 were not spatially adequate to sufficiently characterize potential source areas. The sample analysis list for PAOC X and Regional Groundwater includes only VOCs, SVOCs and inorganics though the rationale given for the additional sampling in the pertinent historical information section is similar to that provided for SWMU 1. Therefore, the BTAG recommends that pesticides and explosives, including perchlorate, be added to the sample analysis list for PAOC X and Regional Groundwater due to this uncertainty and to be consistent with what was decided for SWMU 1.
2. **Acronyms and Abbreviations:** Please include RL and RSL.
3. **SAP Worksheet #3 – Distribution List, Page 25:** Modify the Title /Project Role for Carl Soderberg to read “Caribbean Environmental Protection Division Director.” Also, please replace the q for a g in Rodriguez in Worksheet #3 and #4.
4. **SAP Worksheet #10a – SWMU 1 (Camp Garcia Landfill) Problem Definition, Page 59:** The document notes ephemeral stream samples (soil or surface water/sediment) will be collected, one upgradient and three adjacent to the landfill. The actual locations of the samples are to be based on consensus made during a site visit by the ERP Technical Subcommittee. Sample locations should be biased towards depositional areas, seeps, areas near known source areas, and areas near site surface water drainage. Further, the upstream sample should be relocated away from the roadway. The proposed additional investigation will also serve to determine the presence of an ephemeral stream on the southwest side of SWMU 1. In the event that such a stream is identified, sediment and surface water or surface and subsurface samples (depending upon the presence of water) should be collected from this stream as well.
5. **SAP Worksheet #10b – SWMU 2 (Fuels Offloading Site) Problem Definition, Page 62:** Soil borings are to be advanced if the former fuel transfer pipeline can

be “visually identified in the field by the ERP Technical Subcommittee”. It is unclear if other methods of identifying the pipeline have been considered. For instance, geophysical surveys and metal detectors are to be used at other sites. Ensure that all appropriate methods are considered to locate the former fuel transfer pipeline.

6. **SAP Worksheet #10b – SWMU 2 (Fuels Offloading Site) Problem Definition, Page 62:** This section indicates that additional borings will be advanced if evidence of a release is observed. However, the number of additional borings is not discussed. Revise this section to indicate how the number of additional borings will be determined.

7. **SAP Worksheet #10d – SWMU 10 (Sewage Treatment Lagoons) Problem Definition, Page 66:** This section indicates that data from the two proposed thallium samples will be substituted for the historical data set. However, differences in thallium concentrations could be attributed to soil heterogeneity as well as the analytical questions discussed in the SAP. Therefore, it is suggested that either additional samples be analyzed for thallium or that both sets of data be used. Alternatively, the SAP should be revised to indicate what steps are being taken to reduce potential soil heterogeneity concerns.

Also, it was noted that thallium concentrations in soil (surface and subsurface) are elevated. Please add discussion of the possible sources for thallium; is it related to explosives? (no explosives detected in surface soil, subsurface soil or groundwater).

8. **SAP Worksheet #10f – AOC G (Pump Station and Chlorination Building at Sewage Treatment Lagoons) Problem Definition, Page 70:** This section describes a fuel release. However, no information is provided in the Background and Potential Release History or Synopsis of Secondary Data sections about the potential source of the fuel release or the data collection effort that identified this release. Revise SAP Worksheet #10f to provide a more complete description of the fuel release.

In addition, no sampling is proposed for Total Petroleum Hydrocarbon-Diesel Range Organics (TPH-DRO) even though it was elevated during previous sampling. Provide additional information to justify the proposed analyses.

9. **SAP Worksheet #10g – PI 4 (Former Helicopter Maintenance Area, Trenched Area, Disturbed Area, and Bermed Areas used for Fuel Bladder Storage) Problem Definition, Page 71:** PI 4 is composed of several sub-areas. The Synopsis of Secondary Data provides a general discussion of releases, but does not indicate which analyte groups were found in which sub-area. Revise the SAP to provide discussion of the potential releases or other data for each sub-area.

- 10. SAP Worksheet #10h – PI 7 (Former Quarry, Tar Drum Disposal Area, and Radar Communication Area) Problem Definition, Page 74:** The number of confirmation samples is not specified in Worksheet #10h of the SAP. It is unclear if the number of samples will be based on some set of criteria or simply a field judgment. Page 52 of the SAP, Technical Subcommittee meeting minutes, provides specific recommendations for the number of confirmation samples beneath the drums. However, this information is not incorporated into the sections that the field personnel will likely refer to when performing the sampling. Revise SAP Worksheet #10h and any other applicable worksheets to describe how the number of confirmation samples at PI 7 will be determined. In addition, revise this section to state if the samples will be grabs or composite samples.
- 11. SAP Worksheet #10j – PAOC N (Former Fuel Farm and Filling Station) and PAOC S (Former Power Plant) Problem Definition, Page 77:** The Navy agreed to further investigate if the POL pipeline in PAOC S was an aboveground line as was suggested in the April 2-3, 2008, ERP technical subcommittee meeting. This was not addressed in this section.
- 12. SAP Worksheet #10p – PAOC M (Former Fuel Facility) Problem Definition, Page 95:** The first sentence of this worksheet indicates PAOC M is shown in Figure 35. However, Figure 35 does not appear to depict PAOC M. Revise SAP Worksheet #10p to resolve this discrepancy, as appropriate.
- 13. SAP Worksheet #10p – PAOC M (Former Fuel Facility) Problem Definition, Page 96:** Under Question 1, the potential for contamination will be evaluated based on visual evidence or photo-ionization detector (PID) screening information. Another factor that should be considered is the presence of odors, particularly those suggesting a fuel release. Revise Worksheet #10p to include odors in the criteria used to evaluate a potential fuel release at PAOC M.
- 14. SAP Worksheet #10r – PAOC P (Former Water Treatment Pumphouse) Problem Definition, Page 99:** The proposed sampling for PAOC P includes target compound list (TCL) SVOCs and target analyte list (TAL) inorganic based on the presence of a generator. It is unclear why only these analyses, and not volatile organic compounds (VOCs), TPH-Gasoline Range Organics (TPH-GRO), or TPH-DRO were considered. Provide the rationale for excluding VOCs, TPH-GRO and TPH-DRO analyses at PAOC P or modify the proposal, as appropriate.
- 15. SAP Worksheet #10u – Regional Groundwater Problem Definition, Page 105:** The proposed locations of the two monitoring wells as part of the area-wide Camp Garcia groundwater investigation are not shown in the figure referenced in this worksheet (Figure 51). However, the wells are shown in Figure 3. Please clarify in the text.

- 16. SAP Worksheet #11 – Project Quality Objectives/Systematic Planning Process Statements, Page 108:** The description of sampling for Solid Waste Management Unit (SWMU) 10 indicates “all subsurface soil samples will be collected just above the bottom of the lagoon material, if it can be visually distinguished from the native material.” It is understood that the intention is to bias the samples to the site conditions in this case. However, the proposed subsurface sample depth is not consistent with the specified depths in the QAPP. Therefore, this description should also be included in the other sections of the SAP describing the SWMU 10 sampling (i.e., SAP Worksheet #10d and Table ES-1). In addition, ensure that all site-specific procedures are described consistently in all appropriate worksheets.
- 17. SAP Worksheet # 11 – Project Quality Objectives/Systematic Planning Process Statement, Page 107, Question # 2:** It is stated that Regional Screening Levels (RSLs) have replaced Region 9 PRGs as action levels for this site. EPA Region 2 agreement with this change should be documented.
- 18. SAP Worksheet # 12 – Measurement Performance Criteria:** The reasons for not identifying measurement performance criteria for surrogates for organic compounds should be provided.
- 19. SAP Worksheet #14 – Summary of Project Tasks, Page 156:** This section indicates that AOC A backfill samples will be composited. However, the number of aliquots per composite is not discussed. Revise this worksheet to provide the number of aliquots to be collected per composite sample.
- 20. SAP Worksheet # 15 – Reference Limits and Evaluation Table:**
- a. The reasons for basing the Project Quantitation Limit Goals (PQLg) on the RSLs, as opposed to adjusted RSLs should be discussed. If Region 2 agreed that the adjusted RSLs are appropriate for this project, then using the adjusted RSLs should be also appropriate.
 - b. The approach that will be used for used for incorporating background levels in the decision making process should be provided.
 - c. The reasons for providing Worksheet 15 information for blanks should be provided.
 - d. Various worksheets reference the draft Master QAPP from November 2006 rather than the final QAPP from May 2007 (footnote “1”, “Vieques Eco criteria are derives from various sources, which are summarized in the ‘Ecological Risk Assessment Protocol for Vieques Environmental Restoration Program [Draft MQAPP, CH2MHILL, November, 2006]”).

- 21. SAP Worksheet #15-6 - Reference Limits and Evaluation Table, Page 183:** This table provides several different background metals concentrations for various Vieques areas. However, the source of the background concentration data is not provided. Revise the SAP to indicate the source of the background concentration data.
- 22. SAP Worksheet # 19 – Analytical SOP Requirements Table:** H2O is not a preservative for VOC spoil samples. Please correct this error.
- 23. SAP Worksheet #20 - Field Quality Control Sample Summary Table, Page 251:** The number of sampling locations is listed as 14 for several analyses associated with SWMU 2. However, the table indicates that only one field duplicate will be collected. The SAP specifies in several locations that one field duplicate will be collected for every ten samples. Revise Worksheet 20 to indicate that two field duplicate will be collected for the SWMU 2 analyses listed at the bottom of page 251.
- 24. SAP Worksheet #28-1A - LCS, MS/MSD, and Surrogate Recovery Limits, Page 287:** This page lists the soil %R limits for dichlorodifluoromethane as “10-200%”. This %R range appears to be wider than normal. Please revise the SAP to clarify why these limits are acceptable for dichlorodifluoromethane.
- 25. SAP Worksheet #28-4 - Laboratory QC Samples Table, Page 300:** This table indicates that Method 8330 will be utilized. However, a significant revision to the method was made in Method 8330B. Revise the SAP to require the use of Method 8330B for soils and sediments.
- 26. SAP Worksheet # 29 – Project Documents and Records Table, Page 367:** The final SI report should be included in this table.
- 27. SAP Worksheet 37 – Usability Assessment, Page 390 –** It is stated that ten percent of the data will be checked manually to identify discrepancies. The steps that will be taken if discrepancies are found should be listed.
- 28. Attachment A, Figure 4, Proposed Additional Investigation (SWMU 1):** The figure shows the location of the four samples to be collected from the ephemeral stream. It may be necessary to add a fifth sample that is located downgradient of the landfill to delineate the potential extent of contamination, as all of the proposed locations are either upgradient or adjacent to the landfill.
- 29. Attachment A, Figure 10, PI 7 Central Subsection – Former Quarry:** There are several metallic subsurface anomalies identified on the figure. However, there is no discussion of these items in the SAP and no sampling is proposed near these anomalies or debris areas. Revise SAP Worksheet #10 h to discuss the metallic subsurface anomalies and surface debris. Provide the rationale for not sampling in the vicinity of these features.

30. Attachment A, Figure 48, PAOC s P and X Sample locations, 2005 Aerial Photograph: Debris piles will be removed, and samples will be collected directly beneath the debris in 6" intervals at PAOC X (SAP Worksheet #10t). All of the proposed samples to be collected at PAOC X are in the general vicinity of the surface soil samples that were previously collected during the Environmental Baseline Survey (EBS). It is recommended that one additional sample be collected between the proposed SS/SB-4 sample at PAOC X and SS/SB-1 at PAOC P to better evaluate the potential release of any contaminants from PAOC X.