

TECHNICAL REVIEW

Final RCRA Facility Investigation Work Plan  
Naval Station Roosevelt Roads  
Cieba, Puerto Rico

Submitted to:

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## 1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA) has requested that the A.T. Kearney Team (Kearney Team) provide support to the agency under Work Assignment R02020 for technical review of documents associated with the RCRA Facility Investigation (RFI) of the Naval Station Roosevelt Road (NSRR) located in Cieba, Puerto Rico.

NSRR is located on the east coast of Puerto Rico in the municipality of Cieba, approximately 33 miles southeast of San Juan. The primary mission of NSRR is to provide full support for the Atlantic Fleet weapons training and development activities. NSRR is currently operating under a Draft RCRA Corrective Action Permit that includes varying degrees of work at 28 Solid Waste Management Units (SWMUs) and three Areas of Concern (AOCs).

The objective of this Work Assignment is to assist EPA with the evaluation of the Final RFI Work Plan prepared by Baker Environmental, Inc. (Baker) and dated September 1995. The RFI Work Plan defines the technical approach and scope for the RFI and is presented as five distinct plans:

- Project Management Plan
- Data Collection Quality Assurance Plan
- Data Management Plan
- Health and Safety Plan
- Community Relations Plan

The Project Management Plan describes the strategy for managing the RFI. The detailed technical approach to examining each SWMU is presented in the Data Collection Quality Assurance Plan. Procedures for reporting analytical results are discussed in the Data Management Plan. The Health and Safety Plan describes safety practices for addressing chemical and physical hazards associated with the planned field investigation. The Community Relations Plan presents the manner in which the NSRR will inform and involve the surrounding communities with regard to the RFI.

The Final RFI Work Plan incorporates revisions to the Draft Work Plan in response to comments issued by EPA and the Kearney Team and is entitled "RCRA Facility Investigation (RFI) - Comments on Draft RFI Work Plan." The Final RFI Work Plan also includes revisions discussed at the August 15, 1995, meeting between EPA, the Kearney Team, LANTDIV, NSRR, and Baker. The meeting was requested by the Navy and Baker to discuss proposed site characterization strategies that were intended to respond to the Draft Work Plan comments.

The Kearney Team reviewed the Final RFI Work Plan to evaluate the adequacy and appropriateness of the proposed analytical program with respect to characterization and data quality objectives. Emphasis was placed on determining if the Final RFI Work Plan responded to all the comments generated on the Draft Work Plan. Accompanying the Final RFI Work Plan was a comment-by-comment response letter that summarized the corrective action for each of the EPA and Kearney Team comments. Therefore, the Kearney Team

will not prepare a document which duplicates this effort. As such, the Kearney Team prepared this document in a format that mimics an initial document review.

This report presents the findings of the Kearney Team's technical evaluation. Section 1.0 (Introduction) of this report discusses the scope of this technical evaluation relative to the RFI process. Section 2.0 (Methodology) identifies the specific objectives of this technical evaluation and also presents the criteria used to evaluate the Final RFI Work Plan. Section 3.0 (General Overview) discusses the overall adequacy of the Final RFI Work Plan in satisfying the requirements of the RCRA Corrective Action Permit and comments prepared on the Draft RFI Work Plan. Section 3.0 also summarizes the magnitude of the Kearney Team's findings. Section 4.0 (Detailed Technical Evaluation) provides page-specific comments organized by SWMU. All references to page numbers in Section 4.0 apply to the Data Collection Quality Assurance Plan.

## 2.0 METHODOLOGY

The Kearney Team reviewed the document entitled Final RCRA Facility Investigation Work Plan dated September 1995. The EPA Work Assignment Manager (WAM) requested the Kearney Team provide a technical evaluation of the first three plans that collectively comprise the Work Plan: Project Management Plan (PMP), Data Collection Quality Assurance Plan (DCQAP), and Data Management Plan (DMP). At the request of the WAM, the Kearney Team did not evaluate the data validation procedures. The Kearney Team's evaluation focused on the following four objectives:

- Assurance that the proposed work will provide the appropriate level of characterization at 24 Solid Waste Management Units (SWMUs) and 3 Areas of Concern (AOCs);
- Verification of conformance with the Draft Corrective Action Permit and other EPA requirements or guidance;
- Evaluation of the adequacy and appropriateness of the proposed analytical program with respect to characterization and data quality objectives; and
- Assurance that the Final RFI Work Plan incorporates the changes necessary to adequately respond to the comments presented by EPA and the Kearney Team in both the "RCRA Facility Investigation (RFI) - Comments on Draft RFI Work Plan" and the August 15, 1995, meeting between EPA, the Kearney Team, LANTRIV, NSRR, and Baker.

## 3.0 GENERAL OVERVIEW

The Final RFI Work Plan will result in adequate site characterization that complies with the RCRA Corrective Action Permit and other EPA requirements or guidance. In addition, the proposed analytical program will provide comprehensive analyses that comply with Appendix IX monitoring requirements. This

analytical program will also quantify the presence of explosive agents and asbestos as requested by EPA and the Kearney Team. In general, the Final RFI Work Plan incorporates changes that adequately respond to the comments presented by EPA and the Kearney Team in both the "RCRA Facility Investigation (RFI) - Comments on Draft RFI Work Plan" and the August 15, 1995, meeting between EPA, the Kearney Team, LANTDIV, NSRR, and Baker. Most of the comments generated from the Kearney Team's technical review reflect inconsistencies in the number of samples proposed for collection. These inconsistencies, however, will not have significant impacts on the execution of the proposed field activities. The Kearney Team's only significant comment concerns the proposed investigatory approach at SWMU 8.

At SWMU 8, the proposed subsurface investigation is likely to fail to identify the location of former sludge disposal pits because too few soil borings have been proposed. In addition, the rationale for limiting the number of proposed borings relies heavily on a long-term employee's memory of events in the distant past, a possibly inaccurate source. Both of these factors contribute to minimizing the success of identifying the locations of sludge pits. This issue is discussed in detail in Section 4.0 of this report.

#### 4.0 DETAILED TECHNICAL EVALUATION

A number of minor concerns were identified from the Kearney Team's technical evaluation of the Final RFI Work Plan. These are presented as page-specific comments that are organized by SWMU.

##### **SWMU 1**

Page 4-8, ¶1, §4.2.1

The total number of surface soil samples proposed in the text (i.e., 15 samples) differs from the number proposed in Figure 4-1 and Table 4-2 (i.e., 16 samples). The text needs to be revised to be consistent with the figure and table.

##### **SWMU 2**

Page 4-10, ¶3, §4.2.2

The text states that three soil borings will be installed; however, five borings are depicted in Figure 4-2 and Table 4-2. The text, figure, and table must be revised to reflect consistent information.

Page 4-10, ¶4, §4.2.2

Contrary to the text, Figure 4-2 does not depict a monitoring well in the center of the disposal area. Figure 4-2 shows the subject monitoring well beyond the limits of the disposal area. The illustrated location is technically sound. Therefore the description of

this location needs to be revised in the text.

*SWMU 8*

Page 4-15, ¶1, §4.2.5

A single soil boring is proposed at each of the three areas that a long-term employee identified as former sludge pits. The single boring approach is likely to be unsuccessful in locating the pits given the relatively small cross-sectional area that a boring exposes, and the large degree of error generally associated with distant memories. The potential for failure in locating the sludge pits should be minimized by either increasing the number of borings to a maximum of five borings per sludge pit, or replacing the soil boring approach with test pits. The use of test pits is more advisable and would be consistent with the approach used at SWMU 9, a site with a similar disposal history. In the event that test pits are implemented, then a minimum of three test pits should be excavated at each suspected sludge pit location. This will allow both the lateral and vertical extent of the disposal pit to be characterized.

Subsurface soil sampling will need to be expanded to reflect any expansion in the number of soil borings or replacement of soil borings with test pits. It is recommended that the proposed subsurface soil sampling program adopt an approach similar to SWMU 9 (i.e., two subsurface soil samples per boring or test pit).

The proposed sampling strategy is inadequate because it fails to examine surface soils where sludge residues may exist. The Final RFI Work Plan needs to be revised to address the gap in site characterization. Given the similarities between SWMUs 8 and 9, any proposed surface sampling program for SWMU 8 should be consistent with that proposed for SWMU 9.

Laboratory analyses proposed for soils are inadequate because they are limited to total petroleum hydrocarbon (TPH) analyses. While the disposal history of SWMU 8 does not warrant full Appendix IX analyses, TPH analyses are far too

inadequate to characterize constituents for risk assessment purposes. Unless strong justification is provided for limiting analyses to TPH only, the Final RFI Work Plan must be revised to adopt at least the same analytical parameters as proposed for SWMU 9 (i.e., volatile organic analyses, semi-volatile organic analyses, RCRA metals, and TPH).

**SWMU 9**

Page 4-16, ¶3, §4.2.6

The Final RFI Work Plan needs to present criteria for selecting the proposed surface soil samples. Proposed samples should, at a minimum, be collected from stained areas, areas overlying sludge pits, or low-lying areas near the pits.

Page 4-16, ¶4, §4.2.6

The total number of 36 proposed subsurface soil samples from test pit locations presented in the text is incorrect. Based on the proposed collection of 2 subsurface soil samples from each of the 19 test pits illustrated in Figures 4-6 and 4-7, the correct number samples appears to be 38. The apparent error most likely resulted from failure to count the two samples proposed from the test pit associated with Tanks 216 and 217. The text must be revised to be consistent with the figures.

Table 4-2

The number of subsurface soil samples collected from test pits and monitoring well installations should total 46 samples, not 44 samples. The table should be revised to be consistent with the number presented in the text and Figures 4-6 and 4-7.

**SWMU 30**

Page 4-27, ¶3, §4.2.9.10

The number of surface soil samples proposed in the text (i.e., 5 samples) differs from the 6 samples depicted on Figure 4-16. The number presented in the text agrees with that presented in Table 4-2. The text, figure, and table need to be revised to be consistent.