



DEPARTMENT OF THE NAVY

ATLANTIC DIVISION
NAVAL FACILITIES ENGINEERING COMMAND

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MAY 06 1998

U. S. Environmental Protection Agency
Region II Headquarters
Attn: Ms. Nicoletta DiForte
Chief RCRA Caribbean Section
290 Broadway-22nd Floor
New York, New York 10007-1866

Re: RCRA/HSWA Permit Number PR2170027203, U.S. Naval
Station Roosevelt Roads Response to EPA Comment
Letter dated February 11, 1998 Comment Letter

Dear Ms. DiForte:

This letter is in response to the United States Environmental Protection Agency's (EPA) Region II letter dated February 11, 1998, addressed to Mr. Paul Rakowski, P.E, Head, Environmental Program Branch, Atlantic Division (LANTDIV) Naval Facilities Engineering Command. The Navy has reviewed EPA's comments that pertained to the following reports submitted previously by the Navy:

- RFI Quarterly Progress Report (August 1, 1997–October 31, 1997) including Attachment 1 (March 1997 and July 1997 addendum) Groundwater Monitoring System Implementation Plan for the Base Landfill (SWMU Number 3).
- Tow Way Fuel Farm Quarterly Progress Report No. 3 (July, 1997 through September 30, 1997)
- Draft Corrective Measures Study (CMS) Workplan for Tow Way Fuel Farm (SWMUs Numbers 7/8) and
- U.S. Navy Response Letter of December 24, 1997, to EPA's Comment Letter dated November 14, 1997 (Subject: EPA comments on OU1,6,7 RFI Report and Work Plan for Additional Characterization at SWMU Number 30 (former incinerator))

This letter serves to provide the Navy's response to each of EPA's comments for the above referenced documents. The EPA comments and the Navy's responses are enclosed.

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EPA COMMENTS AND NAVY RESPONSES

EPA Comments I

- I. *RFI Quarterly Progress Report (August 1, 1997-October 31, 1997), including Attachment 1-[March 1997 and July 1997 addendum] Groundwater Monitoring System Implementation Plan for the Base landfill (SWMU Number 3)*

[Note: A number of specific comments from the EPA, TechLaw (the EPA contractor) and EQB were included in, or as attachments to, the EPA letter that addressed this topic. In the interest of brevity, the Navy is responding only to EPA and TechLaw comments. A revised GWMSIP and SAP will be submitted by Naval Station Roosevelt Roads to address EQB's comments.

Navy Response I

A discussion associated with the Groundwater monitoring at the Roosevelt Road's Base Landfill (SWMU Number 3) was conducted as one of the topics at the Joint Interest Group (JIG) meeting in San Juan on February 24-25, 1998. The discussion focused on integrating the requirements of EQB's Solid Waste Program (Subtitle D) and the future RCRA Corrective Action Investigations required by the Part B Permit in order to mitigate any unnecessary duplication of efforts. However, because of the two separate schedules and funding programs used for the Solid Waste Program and the Installation Restoration Program for RCRA permit required investigations, the Navy had indicated that funding is not yet available to conduct comprehensive RCRA groundwater investigations. At that time, the Navy agreed to discuss this issue further with EQB to determine whether an acceptable plan having funding flexibility could be agreed upon. The plan proposed would be intended to meet the requirements of both 40 CFR Part 258 for monitoring of Subtitle D Municipal Landfills and RCRA groundwater investigation requirements delineated in the EPA approved September 1995 RFI Work Plans.

Subsequent to the Joint Interest Group Meeting, Ms. Madeline Rivera, Naval Station Roosevelt Roads (JIG) member, met with EQB personnel, Mr. Jose Febres (EQB) and Ms Luz A. Muriel (EQB JIG member) on March 12, 1998 to discuss comments transmitted by EPA letter, as referenced above, and EQB's draft comments on the GWMSIP and SAP. As a result of that meeting and before proceeding in responding to each of EPA's specific comments, the following summarizes the Navy's intentions in regards to addressing the concerns profiled in EPA's Comment Letter dated February 11, 1998:

- Three new wells will be installed initially, the installation of the other six wells will be phased in at two per year.
- The lithologic data and completion well records will be provided in Permit Required Quarterly Report as they become available and then compiled into the RFI Final Report for Operable Unit (OU) Number 4 (SWMU Number 3).
- Two sets of samples will be collected during the **initial** round of sampling. One set of samples will be collected and tested to satisfy the requirements of EQB's Subtitle D Solid Waste Program; the other set of samples from the three new wells and existing six wells will be collected and tested in accordance with the sampling procedures and protocols established in the September 1995 approved RFI Work Plan. This data will be compiled in the Final RFI Report for OU Number 4 (SWMU Number 3), along with the required data collected from the other six new wells upon their installation.
- Subsequent sampling events, as will be described in the revised GWMSIP and SAP, are only intended to address the requirements of EQB's Subtitle D Solid Waste Program.
- All additional work at OU Number 4 (SWMU Number 3) required to satisfy the groundwater investigation requirements of the November 1994 RCRA Permit will be addressed in separate RFI Groundwater Investigation Work Plans and a Final RFI Report prepared by the Atlantic Division Naval Facilities Engineering Command. All additional work will be funded beginning in late FY 99.

EPA Comment I (1):

All Deficiencies noted in the enclosed January 15, 1998 evaluation prepared by EPA's contractor, TechLaw, Inc., must be addressed (either through submission of an appropriately revised GWMSIP and SAP, or through submission of response addressing the deficiencies). (Refer to TechLaw comments Number 3, "Page Specific Comments".

Navy Response I (1-1):

Attachment 1, Part I, Section 3 and Part II, Table 1.1. The text will be revised to indicate that two sets of samples will be collected during the **initial** round of sampling. One set of samples will be collected and tested in accordance with the requirements of EQB's Subtitle D Solid Waste Program. The other set of samples will be collected and tested in accordance with all sampling procedures and protocols established in the September 1995 approved RFI Work Plan. An approved RFI program data validator will review the RCRA type data. All other

subsequent sampling events conducted under the GWMSIP and SAP will be performed in accordance with the sampling and analysis procedures approved by EQB for Subtitle D requirements. All other investigations required to meet the requirements of the November 1994 RCRA Permit will be conducted in accordance with an approved Work Plan specifically designed to address RCRA RFI investigations for Operable Unit (OU) Number 4, SWMU Number 3. This work will be performed under the Navy's Installation Restoration Program contractor, Baker Environmental, in late FY 99.

The text of the GWMSIP and SAP will also be revised to convey that the monitoring system will consist of a well network having a total of nine (9) wells, including a second upgradient well (R7GW11). The procedures for conducting borehole drilling, monitoring well installation and development, and elevation survey activities will be conducted in accordance with the plan previously approved by EQB and contingent upon satisfactorily addressing EQB's comments in the revised GWMSIP and SAP. In addition, the text will be revised to delete reference to the collection of rinsate blanks because disposable bailers will be used to collect samples.

I (1-2): Attachment 1, Part II, Section 1.3, Page 1-1. As noted above, LANTDIV's contractor, Baker Environmental, will prepare a RCRA specific RFI Work Plan for the permit required RFI groundwater investigation for OU Number 4, SWMU Number 3 in FY99. The Navy is intending to use the RFI data obtained from the three new wells and existing six wells proposed in the revised GWMSIP, and the other six wells to be phased in, to satisfy the requirements for the groundwater investigation portion for OU Number 4 (SWMU Number 3). This information will be reported in the Final RFI Report for OU Number 4 (SWMU Number 3). All work to be included in the Final RFI Report will be conducted in accordance with the September 1995 approved RFI Work Plan. Therefore, language that presents the criteria used to evaluate the adequacy of the background samples will be included in the FY99 RCRA RFI Work Plan for OU Number 4.

I (1-3): Attachment 1, Part II, Section 1.3.2 will be revised to reference the appropriate section of the September 1995 approved RFI Work Plan that pertains to all field parameters being employed and that were previously approved for well development during RFI investigations.

I (1-4): Reference Attachment 1, Part II, Table 1.2. The Navy will only complete one set of samples in the first round of sampling in accordance with the September 1995 approved RFI Work Plan. Again, it is intended to use this the data to meet the groundwater investigation requirements for OU Number 4 (SWMU Number 3) of the November 1994 RCRA Permit. Attachment 1 will be revised, where appropriate, to make reference to the protocols

and procedures presented in the September 1995 approved RFI Work Plan. As indicated above, all subsequent sampling performed as part of the GWMSIP are only intended to meet the requirements of the EQB Solid Waste Subtitle D provisions..

I (1-5) Reference Attachment 1, Part II, Section 1.4. The Navy responds to this comment as noted above in Navy Response I (1-1), I (1-2) and I (1-4).

I (1-6) Reference 1, Part II, Section 2.1.1, Page 2-2, Paragraph 4. The Navy responds to this comment as noted above in Navy Response I (1-1), I (1-2) and I (1-4).

I (1-7) Attachment 1, Part II, Section 2.1.1, Page 2-2, Paragraph 5. The Navy responds to this comment as noted above in Navy Response I (1-1), I (1-2) and I (1-4).

I (1-8) Attachment 1, Part II, Section 2.1.2, Page 2-3, Paragraph 1. The Navy responds to this comment as noted above in Navy Response I (1-1), I (1-2), and I (1-4).

I (1-9) Attachment 1, Part II, Section 2.4, Page 2-5, Paragraph 3. The Navy responds to this comment as noted above in Navy Response I (1-1), I (1-2), I (1-4) and below in I (2).

EPA Comment I (2):

All sample collection, quality assurance/quality control (QA/QC) procedures, and data validation procedures must conform to the September 1995 RFI Work Plan Requirements.

Navy Response I (2):

All sample collection, quality assurance/quality control (QA/QC) procedures, and data validation procedures for the initial (one time) sampling event required for the OU Number 4 (SWMU Number 3) RCRA RFI Program will be performed in accordance with the September 1995 Approved RFI Work Plan. The samples to be analyzed for the parameters identified in the September 1995 Approved RFI Work Plan will be delivered to the laboratory currently being utilized for analyzing samples during RFI Investigations.

EPA Comment I (3)

A lithologic and completion [construction] log must be submitted for each well to be utilized. Such logs must either be submitted with the well integrity demonstration workplan requested above, or any final report submitted pursuant to that workplan.

Navy Response I (3)

Construction Logs of the existing wells do not exist. As it stands now, three new wells will be installed as part of the revised GWMSIP. The six existing wells will be re-installed over the next three years as funding becomes available. Therefore, the performance of well casing telemetry of the existing wells appears to be redundant at this juncture. The actual screened intervals in the existing wells will be documented when these wells are abandoned upon reinstallation of the new wells. Lithologic logs and well completion [construction] logs will be submitted for each of the new wells to EPA; the three that are currently scheduled to be installed in the GWMSIP and the six existing wells to be re-installed over the next three years (2 per year).

With regards to well integrity, Monitoring wells R7GW01, R7GW02, R7GW04, and R7GW05 were tested for integrity in March, 1997. The results and documentation of this testing will be included in the revised GWMSIP and SAP. Monitoring wells R7GW03 and R7GW06 are scheduled to be replaced as two of the three new wells in the GWMSIP. The actual screened intervals in these two existing wells will be documented when these wells are abandoned upon reinstallation of the wells. The data will be submitted to EPA with the lithologic logs and completion [construction logs] in the final report submitted pursuant to the GWMSIP and SAP.

EPA Comment I (4):

Pursuant to Condition III.B.8 (a) of the 1994 RCRA Permit, all preliminary analytical results must be submitted with the RFI Quarterly Progress Reports.

Navy Response I (4):

The preliminary analytical results will be submitted in the appropriate RFI Quarterly Report upon receipt.

EPA Comment I (5):

It is EPA's understanding that completion of the groundwater investigation requirements, completes the SWMU Number 3 investigation requirements of the September 1995 RFI Work Plan. Therefore, since the Base Landfill (SWMU Number 3) is the only SWMU in operative unit (OU) Number 4, the draft RFI Final Report for OU Number 4 must be submitted within 60 calendar days of receipt of all validated groundwater analytical data required for SWMU Number 3, pursuant to Condition III.E.3.(a) of the 1994 RCRA permit.

Navy Response I (5):

As discussed at the Joint Interest Meeting in February, the RFI investigation work associated with OU Number 4 (SWMU Number 3), will not be funded until late FY 99. It is the Navy's understanding that the data collected from the initial round of sampling, as delineated above and in the revised GWMSIP, will satisfy the RFI groundwater investigations for those particular wells. It is also understood that the sampling of the three new wells and six existing wells will follow the testing parameters, protocols, and procedures as described in the September 1995 approved RFI Work Plan. Based on these premises and upon completing sampling events from the additional six wells to be installed, the Navy understands that EPA will accept this data when it is incorporated into the Final RFI Report for OU Number 4 (SWMU Number 3). The Navy also confirms that the draft RFI Final RFI Report for OU Number 4 will be submitted within 60 calendar days of receipt of all validated groundwater analytical data required for SWMU Number 3. At this time, it is anticipated that the draft RFI Final Report will be submitted in late FY 99 or early FY 2000.

EPA Comment II (1):

Two Way Fuel Farm Quarterly Progress Report No. 3 (July 1, 1997 through September 30, 1997).

- 1. The report, dated December 10, 1997, is indicated to cover the period July 1, 1997 through September 30, 1997. If this is correct, pursuant to Condition B.8 of Module III of the 1994 RCRA Permit and requirements given in previous EPA letters, the Quarterly Progress Report was due October 31, 1997, and was therefore, submitted 42 days late. It should be noted, however, that the present Quarterly Report includes much (but not all) relevant data through the end of October 1997, such as water and product elevation measurements through October 30, 1997 (refer to Table 3-2), and product thickness measurements (refer to Table 3-3), and Figures 5-1 through 5-9 include data through November 16, 1997. Please clarify the correct period covered by the present report, and henceforth submit the Tow Way Quarterly Reports within 30 days of the end of the period covered.*

Navy Response II (1)

The quarterly report was designed to cover the four-month period July through October 1997. The purpose of this change was to consolidate quarterly reporting efforts on one quarterly submission and schedule. The intent to do this was discussed with the EPA during a conference call at the same time an

additional two weeks schedule extension for the Quarterly Progress Report was requested and approved. The report was issued at the agreed upon submission date of mid-December 1997. From this time forward, the Navy will make reference to all agreed upon time extension requests in the transmittal cover letters for report submissions.

The subcontractor data for the reporting period (i.e. the TerraVac product measurement report) was mistakenly omitted from the attachments. However, all of the relevant data was incorporated in the report. TerraVac's report has been forwarded as an attachment to the March 6, 1998 submission of the Tow Way Quarterly Report Number 4.

EPA Comment II (2)

2. *The site plan map, Figure 2-1, should have reflected the location of the new wells proposed originally in Quarterly Progress Report Number 2, and modified by your letter of October 20, 1997. Your October 20, 1997 letter made major revisions to the program proposed in Quarterly Report Number 2, yet EPA has never received a map showing the revised locations, and expected this to be included with the current Quarterly Progress Report. Please submit within 45 days of your receipt of this letter, a site map showing all wells, including these new well locations [proposed as of September 30, 1997]. Also, please include with the next Quarterly Progress Report well logs for these new wells, showing lithology and construction/completion details for each.*

Navy Response II (2)

A report entitled "Additional Well Installation, Tow Way Fuel Farm Interim Corrective Measure, Naval Station Roosevelt Roads, Ceiba, Puerto Rico" was included as an attachment to the Quarterly Progress Report (Period 1 November 1997-31 January 1998) submitted on March 6, 1998. The well installation report provided complete details regarding how the wells were installed. All borings and completion records for the newly installed wells and a location map showing all the well locations were also provided in the report. The results of the various testing performed on the wells and samples obtained from the wells were included in the report as well. It is the Navy's understanding that the submission of this report satisfies EPA's concerns.

EPA Comment II (3).

The locations of at least six wells with product thickness measurements reported in Table One of the July 1997 [Terra Vac] Free Product Level Measurement Report 97-07, are not shown on any of the maps submitted, including the site plan map, Figure 2-1.

These include wells identified on Table One as NW-1 & 2, and ? Number 1 through ? Number 4 [Terra Vac measured fluid levels in these wells in the field, but could not ascertain their numbers/identities]. Please submit, within 45 days of your receipt of this letter, a site plan map showing all wells, including these six wells, and the new wells discussed in (2) above.

Navy Response II (3):

While completing the well installation program, all previously unidentified wells have been identified and labeled in the field. A site map showing all the available information, including the new well locations and the six well locations reported in Table 1 of the July 1997 Free Product Measurement Report 97-07, has been provided in the Tow Way Quarterly Report as an attachment to the RCRA permit required quarterly report for November 1997 through January 1998 (submitted on March 6, 1998).

EPA Comment II (4):

In addition, as requested by EPA, our contractor, TECHLAW Inc., reviewed the Tow Way Fuel Farm Quarterly Progress Report. TECHLAW noted (see enclosed comment) that free product thickness presented in Table 5-1 of the quarterly report are not consistent with measurements presented in Table 3-2. Please revise the Tables and/or provide a discussion for the discrepancies.

Navy Response II (4):

Table 5-1 is derived from the values on Table 3-2 and, therefore, no discrepancies should exist. Any differences are the result of transcription errors. Table 5-1 has been revised and will be submitted under a separate transmittal letter.

EPA Comment II (5):

Furthermore, as discussed in more detail in the enclosed TECHLAW comments of January 28, 1998, the present limited free product recovery (total approximately 1,000 gallons in both 1996 and 1997, compared to approximately 12,000 gallons in 1995) would appear to indicate system deficiencies (either design, or operation, or both). EPA concurs, and requests the Navy to submit, within 45 days of your receipt of this letter, a discussion of the causes of this greatly reduced free product recovery rate (including comments in the enclosed TECHLAW comments), and a work plan for measures to increase the rate of free product recovery to levels approaching that achieved in 1995. Also this response should address the above comment (Number 4) regarding discrepancies between Tables 5-1 and 3-2, and site map requested in (Numbers 2 and 3 above).

Navy Response II (5):

This topic was discussed at the Joint Interest Group meeting held on the 24th and 25th of February 1998, in San Juan. During that meeting, three technologies were presented. Each of the remedial alternatives had both areas of apparent strength and areas representing possible drawbacks. In addition to the presentations, the present effectiveness of the ICM recovery system was discussed in detail.

A Corrective Measures Study is presently being performed at the Tow Way which will review an array of potentially applicable remedial technologies. In addition, one pilot study has been performed at the site (the three phase recovery system) another is planned (ElectroChemical GeoOxidation) for the near future and bench scale testing of a third technology (Clean OX) is planned. At the end of the CMS, the most suitable remedial alternative will be identified and recommended for approval and implementation.

In regards to performance comparison of the current system to systems employed in the past, numerous comments have been made about the ineffectiveness of the current ICM or amount of free product recovered in 1996 and 1997, as compared to the amount of free product recovered in 1995. Navy records indicate that a total of 12,630 gallons of free product has been recovered during the time interval beginning March 1994 through September 1995. The three phase recovery system (Vacuum Assisted Recovery System (VARS)) recovered a total of 7,544 gallons between September 30, 1994 and February 1995. The combination of the emergency recovery system and the VARS together were effective in recovering a total of 13,773 gallons between March 1994 through September 1996.

As EPA is fully aware, the current system is not intended to be a final free product recovery system. The present ICM is designed as an interim measure to collect free product only and contain plume migration. It should be noted that the current ICM system is composed of a skimmer system only. As it stands now, the system's effectiveness in removing free product is certainly less than would be expected from a three-phase recovery system or a final remedy. However, the current system has shown reasonable success in controlling plume migration, especially in the location southeast of the site along Forrestal Drive. It appears that the current progress should serve to meet the intent of the ICM until the selected final remedy in the CMS is implemented. However, it is the Navy's intention to maintain the current system in accordance with the Operation and Maintenance Plans (O&M) and provide the necessary upgrades to the system in order to maintain control of plume migration and free product recovery. The Navy has already made recommendations in the most recent Tow Way Quarterly Report by proposing to examine certain possible

system enhancements to improve free product recovery. More specifically, the Navy is in the process of evaluating the following potential enhancements to the current ICM:

- Installation of additional recovery wells
 - Installation of recovery equipment in additional existing wells
 - Redevelopment of RW-2

These types of improvement and related costs will continue to be evaluated on a quarterly basis in conjunction with the reporting requirements and while developing the CMS.

In addition to the above, and as discussed at the Joint Interest Group meeting, the Navy's O&M contractor has also assessed the effectiveness of the free product recovery system in early February. In general, they have observed that:

- The primary sources of product appear to be tanks 1080 (upper area) and 85 (lower area)
- Since 1993, the plume has migrated first toward Honda Ensenada Bay and then changed direction along Forrestal Dr.
- The free product seen occasionally south of the road is not likely the result of plume migration but is most likely related to previous spills.
- Flow migration of the plume towards the bay appears to be controlled by a number of factors including
 - General slope of the rock surface towards the bay
 - The severely folded rock surface.
 - The compacted soil beneath the road acts as a barrier to flow migration towards the bay.
 - The utility trenches are preferential flow paths.

In addition to the observations made, McLaren and Hart have also identified a number of probable causes for system downtime. Some of these are attributed to abnormally high groundwater conditions, electrical distribution power outages, system equipment malfunctions, clogged well screens, etc. Each issue is being addressed in the field as they are encountered and subsequently reported in the quarterly report.

In general, McLaren and Hart conclusions and recommendations closely parallel those reached in the previous and most recent quarterly reports. The geology at the site is indeed problematic and installing an effective net of recovery wells would be

difficult and expensive. Adding recovery wells would certainly increase the potential for additional product to be removed. However, the cost benefit ratio may not be advantageous since a presumptive remedy is not sought as a final remedy. The results of the CMS will provide the most appropriate remedy to be implemented at this site. The installation of recovery pumps in some of the other existing wells may be more beneficial as an enhancement to the current system. The wells used for the pilot study by Terra Vac are being reviewed now as possible recovery points. The concern for low recovery from RW-2 is currently being addressed by redeveloping the well as part of the Operation and Maintenance activities.

Based on the above, it appears that the most prudent course for site remediation is to maintain the present system, enhance it where possible in a cost-effective manner, complete the CMS, and implement the final remedy selected.

III. Draft Corrective Measures Study (CMS) Workplan for Tow Way Fuel Farm (SWMUs Numbers 7 & 8)

EPA Comment III (1)

As discussed above under the Tow Way Quarterly Progress Report Number 3, the site plan map, Figure 2-1, should reflect the locations of the new wells proposed in your letter of October 20, 1997 (modified from the original proposal in the September 22, 1997 Quarterly Progress Report Number 2). In addition, Section 3.7 of the CMS workplan must be revised to indicate that groundwater elevation and product thickness data will be measured in those new wells (i.e., those proposed in your letter of October 20, 1997), concurrently with the measurements at the other 36 Tow Way wells. Of course, the data from the new must be fully incorporated into the CMS final report. Please modify the work plan accordingly.

Navy Response III (1):

The revised site plan and complete details of the additional well installation has been provided with the RCRA permit required quarterly report submitted on March 6, 1998. The site plan and the requested text modifications will be included in the revised CMS work plan.

EPA Comment III (2)

In addition to the groundwater sampling of 36 wells proposed in Section 3.5, groundwater in the new wells proposed in your letter of October 20, 1997 must also be sampled as part of the CMS, unless those new wells are/have been sampled within three months of the date when sampling of the 36 wells,

pursuant to the CMS work plan, occurs, and for essentially the same analytical suite. However, all data from the new wells (i.e., those proposed in your letter of October 20, 1997) must be fully incorporated into the CMS final report, even if they are not resampled concurrently with the other 36. Please modify the work plan accordingly. In addition, Figure 3-2 of the CMS workplan, showing the 36 groundwater sampling locations, must be revised to reflect the new wells (i.e., those proposed in your letter of October 20, 1997).

Navy Response III (2):

Provisions for sampling of the additional wells will be included in the revised CMS work plan. The initial sampling data (along with well installation records, etc.) was provided to the EPA in the March 6, 1998 RCRA permit required quarterly report.

EPA Comment III (3):

Section 3.2 indicates that 32 soil borings are proposed, and that the locations of these are shown on Figure 3-1, not 4-1 as stated in the text [per December 16, 1997 telephone conversation between Mr. Tim Gordon of my staff and Mr. Tom Fuller of Baker]. Likewise for Section 3.3 regarding the 10 soil gas sampling locations.

Navy Response III (3):

The references to figures will be appropriately altered in the revised CMS work plan.

EPA Comment III (4) a:

Even though the schedule given in Figure 6-1 extends the completion time frame beyond the December 15, 1998 date agreed to in EPA's letter of September 9, 1997, EPA will approve that schedule subject to the following modifications and reporting requirements:

The Navy must submit a full report on results of the additional investigations described in Section 3.0 of the work plan by June 30, 1998. In addition to all analytical and other investigation results, this report must include the following: 1) a groundwater gradient/elevation map, 2) a free-product/phase separated hydrocarbon isopach map, 3) soil isopleth maps for each five foot interval below ground surface for both TPH and BTEX concentrations (if any interval contains less than three detections for either TPH or BTEX, no isopleth of that analyte is needed for that respective interval), and 4) isopleth maps for both dissolved BTEX and TPH concentrations in the groundwater.

Navy Response III (4) a.

The June 30, 1998 date for completion of the additional investigations is problematic but the Navy will attempt to comply with the EPA's' request. The original date for the draft report submission was mid-June; however, that was based on CMS work plan approval date of February 1, 1998. The Navy will proceed without full EPA approval of the work plan following the schedule below:

- Start March 23, 1998
- Subcontractor Procurement and Mobilization Complete April 14, 1998 (Completed)
- Field Investigation April 14 through May 1, 1998 (Completed)
- Laboratory Analysis April 20 through May 29, 1998 (a contractual turnaround of 28 days) (In Progress)
- Data validation May 18 through June 1 (14 day contractual turnaround)
- Data evaluation and reporting May 15 through June 29, 1998

The above schedule assumes that the subcontractors are available in the timeframe indicated (the field subs being the most critical given the rather limited availability of Hydropunch® contractors on the island). Should any problem be encountered with the schedule as the effort proceeds, the EPA will be notified immediately. The schedule in the revised work plan reflects the new schedule dates.

EPA Comment III (4) b.

The Task I draft report must be submitted by December 1, 1998 (not late February 1999 as shown in Figure 6-1), and must include recommended clean-up concentration levels and/or other corrective action objectives, along with supporting analysis if clean-up concentration levels are not based on regulatory standards, such as maximum contaminant levels (MCLs) for groundwater. In addition, the Task I draft report must contain a screening (identification and first stage evaluation) of potentially applicable technologies and/or remedies.

Navy Response III (4) b.

The Task I draft report will be provided by the December 1, 1998 date indicated in the comment. It should be noted that the remedial technology screening process will be somewhat constrained by lack of completed pilot study data. The report will address the regulatory required elements. The schedule in the CMS work plan has been amended to reflect this change.

EPA/Techlaw Comment III (5):

3.0 Page-Specific comments

Page 3.2, Section 3.3, Paragraph 2

Based on the free product extent illustrated in Figure 3-2 of the Tow Way Fuel Farm Quarterly Progress Report No. 3, it appears that approximately seven additional soil gas locations are warranted to refine the extent of contamination at the lower TWFF and along Forestdale (sic) Drive. Two soil gas points are recommended to assess the area south of tank 85; One point should be located approximately 50 feet west of UGW-4. Five soil gas points should be installed in a southeasterly direction from UGW-5 at a spacing of approximately 75 feet. If elevated measurements indicating potential contamination are detected, additional borings and monitoring well(s) appear appropriate to determine and monitor contaminant conditions along the downgradient limit.

Navy Response III (5):

The soil gas investigation is not intended to investigate the nature and extent of contamination but is designed to establish representative values for the parameters indicated in the workplan. These values will provide information to be used to assess the potential viability of certain remedial measures (e.g. bioslurping, bioventing). Therefore, at this time, expanding the soil gas program is not appropriate for the intent of this phase of work.

The area south of UGW-23 and west of UGW-4 has been investigated in the past with test pits and/or borings as part of the earlier RFI or pre-RFI activities. Conditions related to soil and groundwater contamination are known.

The area southeast of UGW-5 is an extremely steep rock slope that only allows an approximately 10 foot wide road shoulder where there is presently a line of wells. The slope area is not accessible due to terrain and the prospect of finding petroleum is extremely remote given the nature of the bedrock hill.

Based on the forgoing, there does not appear to be a technical need for the requested soil gas investigation expansion at this time.

EPA/Techlaw Comment III (6):

Page 3-4, Section 3.8, Paragraph 1

In order to minimize the generation of wastewater, a pumping technology should be considered to purge free-product from the

wells instead of the proposed bailer technique. A pumping technology may also provide more accurate product thickness and depth-to-water measurements if the pump and product measurement device can be operated simultaneously.

Navy Response III (6):

The investigation portion of the work covered in the workplan has been performed (completed April 22, 1998). This was done to allow sufficient time to complete the report by the June 30, 1998 deadline.

The bail down tests were performed using a bailer as was originally proposed in the workplan. The system worked adequately for its purpose. The problem with baildown tests at this site is not with the purging or measuring of fluid levels, it is the very low recharge rate of both groundwater and free product.

EPA/Techlaw Comment III (7):

Page 4-8, Section 4.2.4

Progress reports should be submitted for regulatory review following each major remedial progress sampling event. The progress reports should present observations and findings from each sampling event. The objective of the reports would be to communicate the progress of the demonstration and provide the basis for a periodic review to determine whether corrections to the demonstration are needed.

Navy Response III (7):

Results of interim sampling events (i.e. those performed during the period of ECGO operation) will be provided in a letter report to the EPA. This will consist of a tabulation of the data obtained and a very brief comparison of the data to expected results. After the last sampling (i.e. when the demonstration study is complete) a final report of the pilot study will be provided.

EPA/Techlaw Comment III (7):

4.0 Editorial Comments

Page 3-1, Section 3.2, Paragraph 1; Page 3-2, Section 3.3, Paragraph I; and Page 3-2, Section 3.4, Paragraph I References to Figure 4-1 should be corrected to Figure 3-1.

Navy Response III (7):

The figure references will be corrected in the revised document.

EPA Comment IV (1):

Navy response to EPA's November 14, 1997 comments on OU 1, 6, and 7 RFI Report, and Work Plan for Additional Characterization at SWMU Number 30 (former incinerator).

EPA approves the Navy's December 24, 1997 response to EPA's November 14, 1997 comments on OU 1, 6, and 7 RFI Report, and the revised attachments (Tables 4-1 and 4-2). Also, EPA approves the Work Plan for Additional Characterization at SWMU Number 30 (former incinerator) transmitted with the Navy's (Mr. Christopher Penny's) letter of December 24, 1997, subject to the following requirements:

- 1. In addition to the reporting program given on Page 4 of the work plan, all preliminary data and a discussion of any field activities must be reported in the permit required Quarterly RFI status reports, as they are received/occur.*

Navy Response IV (1):

As applicable in terms of scheduled reports and receipt of data/field efforts expended, the quarterly reports will contain appropriate data and brief descriptions of the fieldwork performed.

EPA Comment IV (2):

The revised Final RFI report for OU 1, 6, and 7, when that document is developed, must incorporate not only the results from the additional characterization at SWMU Number 30 in the present work plan, but also the previous RFI soil sampling (1996) and the previous groundwater investigations (implemented by B.B. & L in 1994, under the UST program).

Navy Response IV (2):

The Navy will comply with the above comment upon completion of all work.

EPA Comment IV (3):

No implementation schedule is given in the SWMU Number 30 work plan. Pursuant to the terms of the 1994 RCRA Permit (Condition III.E.3.a), implementation is to commence within 60 days

following written approval of the work plan, given herewith. Should the Navy wish to delay the commencement, please submit a written request prior to the end of the 60 day time period.

Navy Response IV (3):

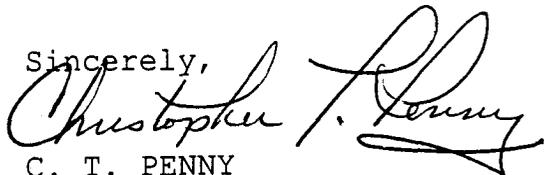
This topic was discussed at the Joint Interest Group meeting on February 24 and 25, 1998. At that time, the Navy indicated that there was no funding available for this task it being unexpected and relatively late in the fiscal year. Also, it would be the Navy's intent to perform the investigations at SWMU 30 in conjunction with other work such that mobilization costs could be minimized. Based on these considerations, it was agreed that the Navy would actively seek funding for the project and that a schedule for the work would be provided when funding became available in FY 99.

The Navy appreciates this opportunity to respond to the EPA's comments.

Re: RCRA/HSWA Permit Number PR2170027203, U.S. Naval
Station Roosevelt Roads Response to EPA Comment
Letter dated February 11, 1998 Comment Letter

Should you have any questions or desire further clarification of
any of the points discussed, please do not hesitate to call me at
(757) 3224815.

Sincerely,



C. T. PENNY

Navy Technical Representative
Installation Restoration Section
(South)

Environmental Programs Branch
Environmental Division

By direction of the Commander

Copy to:

PWD/EED (Ms. Madeline Rivera)

Baker Environmental (Messrs. Thomas Fuller, Mark Kimes,
Mr. Torres, EQB; Ms. Luz A. Muriel, EQB)

US EPA Region II (Mr. Tim Gordon)