STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Environmental Management
DIVISION OF SITE REMEDIATION
291 Promenade Street
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May 13, 1994

Debra Carlson
Remedial Project Manager
U.S. Department of the Navy
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway
Code 1823-Mail Stop 82
Lester, PA 199113-2090

RE: Phase II Remedial Investigation Report Old Fire Fighter Training Area, Naval Education and Training Center, Newport, Rhode Island.

Dear Ms. Carlson:

Please find attached comments generated by the Division of Site Remediation concerning the abovementioned document. The State received the Human Health Risk Assessment on 20 April 1994, and to date has not received the Ecological Risk Assessment. Therefore, comments for these sections of the Phase II Remedial Investigation Report will be forwarded under separate letter head.

If you have any questions concerning the comments, please contact me at (401) 277-2797.

Sincerely,

Paul Kulpa

Paul Kulpa
Division of Site Remediation

cc: Warren S. Angell, DEM DSR
Richard Gottlieb, DEM DSR
Andrew Miniuks, USEPA Region I
Brad Wheeler, NETC

6/6/94 cc: PROJECT FILE
CODE 1822/TB
CODE 1831/SH
TRC-EC

OLD FIRE FIGHTER TRAINING AREA
REMEDIAL INVESTIGATION COMMENTS

1 **General Comment:**

Please provide a list of abbreviations at the beginning of the document. Readers of this document, particularly the public, would find it very helpful.

2 **General Comment:**

In certain instances the report has not integrated the results of the Phase I Investigation with the Results of the Phase II Investigation. The comments below are examples where this has not been done. The report should be modified so that the results from the Phase I and the Phase II report are combined.

3 **General Comment:**

As already stated, the State had not received the complete Remedial Investigation Report. Therefore, comments concerning sections of the submitted RI report, such as sediment and biota sampling results, will be addressed at a latter date.

4 **General Comment:**

Portions of the text of the IAS is reprinted in this document. Included in that text is reference to tables in the IAS. Since this is a public document and the public may not have the IAS available those tables should be reprinted in the RI.

5 **General Comment:**

Please provide some discussion on what was done with the ashes/remnants of the burned material from the training exercises.

6 **Nature and Extent of Contamination,**
Page ES-12, 4 th Paragraph

Please explain the rationale for comparing site sub-surface soils to background surface soil samples. It would seem more appropriate to compare to background sub-surface soil conditions.

7 **Executive Summary, Subsurface Soil:**
Page ES-13, 1st Paragraph, Last Sentence.

Please explain if it is possible that the high concentrations of lead in the subsurface soils, which were observed to have petroleum and staining odors, could have come from gasoline.

8 **Executive Summary, Ground Water**
Page ES-14, Storm Water, 1st Paragraph.

Please explain if the sewer pipe which runs from the catch basin on Taylor Drive and north through the central portion of the site to the bay is a combined sewer overflow. This could help to explain some of the findings at the outfall.

9 **List of Acronyms:**

NACIP needs to be defined.

10 **Section 1.2.1, NETC Description:**
Page 1-3, 1st Paragraph, Last Sentence.

"Long Island Sound" should be Rhode Island Sound.

11 **Section 1.2.3, History of Response Actions:**
Page 1-10, Top of Page.

Since this list includes ROD's for other aspects of NETC the ROD for McAllister Point Landfill should also be listed here.

12 **Section 1.3.1, Site Location and Description:**
Page 1-12.

Please explain why the child day-care facility was relocated off the Island in January, 1994.

13 **Section 1.3.2, Site History:**
Page 1-12, 2 nd Paragraph.

The Site History section does not adequately address the operation of the Fire Fighter Training Area. The report should note the type of fuels used at the site, (heavy oils, waste oils, etc.) the type of materials used to extinguish the fires, oil handling (were dikes placed to limit runoff, etc.) oil/water separator operation and other pertinent information concerning potential sources of

contamination at the site. In addition, the report should note whether the central mound at the site was created from the destruction of the fire fighter training structures, or whether off site debris was brought to the site.

14 **Section 1.3.2, Site History:**
Page 1-12, 2 nd Paragraph.

"Underground piping carried the water/oil mixtures to the buildings and from the buildings to the oil/water separator."

During a number of Project Manager and TRC meetings the State has indicated that information from engineering drawings, such as the underground piping network, holding tanks, specifics of the oil/water separator, etc. for the site should be included in the Phase II RI. This information and appropriate plans must be included in the report in order to adequately address potential sources of contamination at the site, such as, the oil sludge found in the clay pipes during the excavation of test pit 1.

15 **Section 1.3.2.1 Aerial Photographs and Maps:**
Page 1-12, 3 rd Paragraph.

This section of the report discusses structures visible on aerial photographs for the site. The report should note whether stained soil is visible on these photographs.

16 **Section 1.3.3, Previous Site Investigations:**
Page 1-13, 2nd Paragraph.

Figure 1-6 should be Figure 1-7.

17 **Section 1.3.2.1, Old Fire Fighter Site Background:**
Page 1-14, 2 nd Paragraph.

"Figure 1-6 shows an aerial photograph taken of the site in May of 1944."

Figure 1-6 provides useful information concerning the location of structures at the site, (it is assumed that photographs will be substituted for the photostat in the final RI Report). Enlargement of other aerial photographs should be submitted in the report if the condition of the site changed from 1946 (location of buildings or structures changed, stained soil patches are present, etc.).

18 **Section 1.3.4, Human Health Assessment:**
Page 1-15:
If this human health Assessment considered both present and future site use scenarios, please explain why Scenario 1 (Child Care Center) did not consider ingestion of ground water.

19 **Section 2.2.1, Seismic Refraction Results:**
Page 2-3, 4 th Paragraph.

"Based on the seismic refraction results, the depth to bedrock beneath the site varies between approximately 6 and 27 feet below ground surface."

The report should include a bedrock profile figure based upon the seismic survey results. This will allow a comparison between the monitoring wells results and the seismic survey results.

20 **Section 2.2.1, Seismic Refraction Results:**
Page 2-3, 4 th Paragraph.

"Based on the seismic profile, there appears to be a shallow basin present in the bedrock surface at the center of seismic line number 1 and along seismic line number 2."

The report should note whether any bedrock monitoring wells were placed in this shallow basin to investigate potential pooling of NAPLs.

21 **Section 2.2.2, Electromagnetic Conductivity Survey:**
Page 2-5, EM-31 Survey Results.

Please note what material the storm sewer line is made of.

22 **Section 2.2.2, EM-1 Survey Results:**
Page 2-5, 1 st Paragraph.

This section of the report discusses the results of the EM-31 survey.

The report should also include a figure showing the results of this survey.

23 **Section 2.3, Soil Gas Investigation:**
Page 2-6, 2nd Paragraph.

Please locate SG-2 on Figure 2-4. The Figure does not show its location.

24 **Section 2.2.2, Magnetometer Survey Results:**
Page 2-6, 3 rd Paragraph.

This section of the report deals with the results of the magnetometer survey.

These results should also be present in a figure.

25 **Section 2.3.1, Soil Gas Methodology:**
Page 2-8, 2 nd Paragraph.

"These compounds were chosen to evaluate the presence of fuel product, or petroleum-based solvents."

BTEX analysis has limited utility in the investigation of heavy oil contamination. The oil sludge observed in the clay pipes and the staining observed in the vicinity of the mounds appeared to be associated with heavy oils. Therefore, the report should note the limitations of the soil gas survey and comment on the potential heavy oil contamination at the site.

26 **Section 2.3.1, Soil Gas Results:**
Page 2-9, 2 nd Paragraph.

This section of the report discusses the results of the soil gas survey.

The survey was conducted during a period of heavy precipitation. The report should note whether the precipitation had any affect on the survey, for example were saturated conditions encountered during the survey.

27 **Section 2.3, Soil Gas Results:**
Page 2-9, 2 nd Paragraph.

"The soil gas survey conducted at the Old Fire Fighting Training Center did not identify the source of the upgradient contamination observed in the form of SVOCs in soil at an upgradient boring (MW-5) during Phase I exploration activities or the source of the subsurface-petroleum-related contamination reportedly observed in the utility trenches on this area of the site."

The RI is a public document, therefore the report should explain how a soil gas survey for VOC would provide information concerning SVOC contamination.

28 **Section 2.5.2.2, Field Measurements and Observations:**
Page 2-15, 3 rd Paragraph.

"No volatile organic readings were detected in either of these borings, and only the 10-12 foot interval from B-15 was noted to have a petroleum odor."

Significant petroleum contamination was observed in test pits to the south an west of these borings. The report should note this and comment on the lack of observed contamination in the borings.

29 **Section 2.6.1, Overview of Investigation:**
Page 2-18, 3 rd Paragraph.

"Due to the nature of the fine grained geologic material around many of the monitoring well screens, visual clarity was not obtainable at each location."

The State of Rhode Island Groundwater Regulations require that the filter pack be sized to minimize the amount of fine material from entering the well. The State requests justification for the selection of the filter pack material use at the site, that is, the size of the filter pack material was based upon sieve test analysis, etc.

30 **Section 2.6.2, Field Measurements and Observations:**
Page 2-20, 3 rd Paragraph.

This section of the RI reports the temperature, pH, specific conductance, redox, and salinity ranges observed in the groundwater monitoring wells.

The report should discuss the significance of the observed ranges.

31 **Section 2.6.1, Overview of Investigation:**
Page 2-19, 1 st Paragraph.

This section of the report indicates that a test was conducted for NAPL. The report should indicate whether the test was done for both LNAPL and DNAPL. In addition, the Phase II RI is a public document. Therefore, the report should note that NAPL are materials which are found either on the bottom or floating on the top of the water column.

32 **Section 2.7.1 Field Measurements and Observations:**
Page 2-23, 1st Paragraph.

Please explain how the asphalt fragments would have been washed from the

shoreline into the sewer outfall since it would seem that the asphalt should be on the island and not in the bay.

33 **Section 3.3.6, Site Groundwater Hydrology:**
Page 3-19, Paragraph 3.

This section of the report addresses ground water hydrology at the site. For completeness the report should note the observed depth to groundwater obtained during the Phase II Investigation and compare it to the results obtained from the Phase I Investigation. In addition, tables should be created which list the observed depth to water for all of the studies.

34 **Section 3.3.6, Site Ground Water Hydrogeology:**
Page 3-21, Vertical Hydraulic Gradients, 1st and 3rd Paragraphs.

The statements *"Tidal information for the dates that water levels were measured indicates that on both dates water levels were collected within two hours of low tide."* and *"The water levels measured on ..... February 22, 1994 were measured nearly at low tide,....."* while technically correct seem inconsistent since the first statement implies that water levels were measured approximately two hours either before or after low tide and not at low tide while the second statement implies that the water levels were measured very close to low tide. Please clarify these statements.

35 **Section 3.3.6, Site Groundwater Hydrology:**
Page 3-22, 3 nd Paragraph.

"The calculated average horizontal hydraulic gradients, along with hydraulic conductivity and effective porosity values, were used to calculate average linear ground water velocity values at the site."

The report should include in an appendix all the values and the calculations for the above parameters. In addition, the report should compare the values obtained from the Phase I investigation to the values obtained during the Phase II Investigation.

36 **Section 3.3.7, Area Water Use:**
Page 3-24, Paragraph 2.

The location of known public ground water supply wells and surface water reservoirs within the NETC Newport vicinity are shown on Figure 3-10."

The report should note whether community as well as noncommunity water supply wells were included in the above reference, (non community wells includes wells used at restaurants, schools etc.).

37 **Section 3.3.7, Area Water Use:**
Page 3-24, Paragraph 5.

The location, depth and yield of private bedrock wells in the Newport and Prudence Island Quadrangles are shown on Figures 3-12 and 3-13 as obtained from the IAS report."

The above referenced figures are based upon an old USGS Study, and as such should be clearly referenced. The report should also note that the depicted wells locations do not include all the wells located on Aquidneck Island. Finally, RIGIS maps are available which would delineate areas of public and private water use. These maps should be used to access potential targets in the area.

38 **Section 4.1, Soil Assessment:**
Page 4-3, 2 nd Paragraph.

"Site specific background surface soil concentration were established on the basis of the soil quality for off-site samples SS-29, SS-30, SS-31 and MW6-1."

The background soil sample locations in this section are different from the ones delineated in Table 4-3, Comparison of Observed Soil Sample Concentrations Ranges of Elements To Background and Published Results. *"Site background ranges obtained from surface soil samples SS-18, SS-19, SS-20 and from surface soil samples collected from monitoring well borings MW-14R, MW-15 R and MW-16R."*

Please make the appropriate modifications to the report.

39 **Section 4.1, Soil Assessment:**
Page 4-3, 2 nd Paragraph.

This section of the report discusses the background sample locations. The report should provide historic information on these sample locations.

40 **Section 4.1, Soil Assessment:**
Page 4-3, 3 rd Paragraph.

"Contaminant-comparison levels have also been developed for VOCs and SVOCs, as a means of evaluating the relative contamination of the samples with respect to the associated groups of chemical compounds."

In addition to the above, the concentrations of VOCs and SVOC should be compared to the background sample locations. A table, similar to 4-8, should

be created for these compounds.

41 **Section 4.1., Volatile Organic Compounds, Subsurface Soils:**
Page 4-5, 1 st Paragraph.

"Only (1) oily sludge sample was collected from a subsurface pipe discovered during the test pit investigation and analyzed for TCL, VOCs and GC fingerprint in an attempt to identify the fuel type associated wit the sludge sample. However, the GC fingerprint was unsuccessful."

The GC fingerprint would have provided useful information concerning the type of oil at the site. However, the sample should have been run for TPH in order to determine the level of TPH contamination at the site. The report should indicate why the sample was not run for TPH.

42 **Section 4.1., Volatile Organic Compounds, Subsurface Soils:**
Page 4-5, 1 st Paragraph.

"In addition, both of these samples were collected at the depth of the ground water table and were noted to have a petroleum-like odor."

Analysis for VOC and SVOC may not be indicative of petroleum contamination. Therefore, these samples should have been run for TPH. The report should indicate why TPH analysis was not performed on these samples.

43 **Section 4.1.2, Semi-Volatile Organic Compounds, Subsurface Soils:**
Page 4-9, 2 nd Paragraph.

This section of the report discusses the contamination observed in the test pits.

Depending upon the nature of the TPH contamination, analysis of VOC/SVOC may have limited utility in TPH investigations. Therefore, considering the limitations of these analysis, and the obvious TPH contamination the report should note why the samples were not run for TPH, in addition to, the specified parameters.

44 **Section 4.1.2, Semivolitile Organic Compounds (SVOCs):**
Page 4-9, Subsurface Soils, 3rd Paragraph.

It is stated that 22 subsurface soil samples exceed CaPAH concentrations of 1 ppm. Figure 4-2 only shows 18 such locations but does not include the test pits of which there are six locations. This would add up to 24 locations. Please clarify.

45 **Section 4.1.2, Semivolitile Organic Compounds (SVOCs):**
Page 4-10, Subsurface Soils, 1st Paragraph.

It is stated the highest concentration of a phthalate compound was detected in sample B03-3 (12-14' interval). This information is not contained in Table 4-3 (Subsurface Soil Sample Summary Table).

46 **Section 4.1.2, Semi-Volatile Organic Compounds, Subsurface Soils:**
Page 4-11, 2 nd Paragraph.

"A map showing the elevated subsurface soil SVOC results is presented as Figure 4-2."

Figure 4-2 is very useful for depicting SVOC contaminated areas at the site. It may be worthwhile to provide cross section contamination distribution figures. In the Phase I RI report cross section figures were provided which depicted surface and subsurface SVOC, VOC PCB and pesticide distribution at the site. These figures were extremely useful for depicting contaminant levels at the site. Similar figures should be created for VOC, SVOC PCBs and metals using the Phase II data and should be included with the Phase I figures in the report.

47 **Section 4.2.2, Semivolatile Organic Compounds (SVOCs):**
Page 4-19, 3 rd Paragraph.

"The groundwater from all but one of these wells, MW-11R, had a noticeable petroleum-like odor."

The report should indicate why petroleum type odors were detected in the monitoring wells, yet low levels of SVOCs and VOCs were detected. These wells should be analyzed for TPH, as this would provide useful information for an ecological risk assessment.

48 **Section 4.2.4, Inorganic Compounds:**
Page 4-22, 1 st Paragraph.

"Although filtered or dissolved metals groundwater analysis is not typically accepted for comparison to ground water standards, this data along with the associated turbidity information should be considered when evaluating the ground water date."

The report is a public document, therefore this section should indicate why

filtered samples are normally not run at a site. In addition, the report should discusses the significance, if any of the filter vs non filter samples with respect to the ecological risk assessment.

49 **Section 4.3.4, Inorganics:**
Page 4-25, 2nd Paragraph.

As justification for stating that this water sample was impacted by harbor waters please provide a table which delineates the typical concentrations of the noted constituents in sea water.

50 **Section 5.2, Conclusions:**
Page 5-7, 2nd Paragraph.

Please note at what elevation the underground piping is at which was used to convey petroleum products as well as its relationship to the water table.

51 **Section 5.2, Conclusion:**
Page 5-7, 4 th Paragraph.

"Ground water samples results indicate that the past activities at the site have only slightly impacted the site ground water."

This section of the paragraph indicates that site activities had a minimum impact on groundwater. In the latter half of the paragraph the report notes that petroleum odors were detected at the site. The report is a public document, therefore this section should be modified. The report should note that petroleum odors were detected at the site and petroleum staining was observed in soil samples taken from the site. However, the groundwater and soil samples were not analyzed for TPH. Analysis for VOC and SVOC may not be indicative of TPH contamination (this is due to the fact that a limited number of VOC and SVOCs are analyzed for in these test). Therefore, TPH contamination may exist at the site.

52 **Table 1-1, Item 5:**

If the Melville North Area is a FUDS then it should be bolded. Please correct.

53 **Table 2-5, Well Development Parameters:**

Please explain why the pH values range from 10 to 12 for well MW-2D while all the other wells have pH values that range from neutral to acidic.

54 **Table 4-2, Surface Summary Soil Data:**

Sample location FF-SS-3 is a background surface soil location. Please explain why the SVOC concentration is so high in relation to the other sample locations(Of forty samples only nine have higher concentrations).

55 **Table 4-3, Comparison of Observed Soil Sample Concentrations Ranges of Elements To Background and Published Results**

The report should indicate if the reported ranges include Phase I data. If this is not the case a separate table should be included for this data.

56 **Figure 1-5, 1943 Facility Design Map.**

The figure should identify the two cross hatch structures in the center of the site.

57 **Figure 1-6, Coasters Harbor Island May 1, 1944 Aerial Photograph.**

The four structures west of the large concrete pad/asphalt pavement area should be identified. In addition, the report should identify the large structures which extend from the northwestern portion of the site, west across what is now Taylor Drive.

58 **Figures 1-7 and 2-5:**

Please locate SS-7.

59 **Figure 3-1, Surface Water Quality Map of Narragansett Bay:**

Please use the Water Quality Standards map of 1990 to determine the water quality classification of water. The figure as currently shown has incorrectly classified water at a number of locations.