



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

J.F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203-2211

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NSB NEW LONDON  
5090.3a

December 4, 1992

Deborah Stockdale, RPM  
U.S. Department of the Navy  
Northern Division  
10 Industrial Highway  
Code 1823, Mail Stop 82  
Lester, PA 19113-2090

RE: Review of Draft Work Plan - Fuel Farm UST Remedial  
Investigation, September 1992

Dear Ms Stockdale:

The purpose of this letter is to transmit EPA's comments on the proposed efforts to characterize the extent of contamination within the environment posed by current and historical contents of the fuel farm at the Navy Sub Base - New London.

As you can see, EPA comments focus on the need for the Navy to conduct a comprehensive sampling and analysis effort. In particular, the EPA believes that the contamination within the soils and groundwater at the Fuel Farm may be caused by various unknown contaminants. Therefore, the analysis of the soils and groundwater samples should include, at a minimum, the analytes within the Target Compound List/Target Analyte List (TCL/TAL).

Attached you will find EPA's comments on the draft workplan. EPA's comments consist of general and specific comments; these comments are numbered for future reference. The Navy should review these comments and provide EPA with a Response to Comments. Upon successful resolution of any outstanding issues with regard to work to be performed, a draft final workplan should be submitted which incorporates previously generated data and incorporates the proposed investigations.

If you have any questions regarding these comments, you should feel free to call me at (617) 573-9614.

Sincerely,

Andrew F. Miniuks, Geologist  
Federal Facilities Superfund Section

Attachments

cc. Carol Keating, EPA  
William Mansfield, NSBNL  
Dale Weiss, TRC  
Paul Jameson, CTDEP



GENERAL COMMENTS

1. Expand the proposed analysis for soils and groundwater to include the analytes listed in a full TCL/TAL, due to the nature of the products stored in this area. Contaminants other than petroleum-related compounds may have been stored and/or released in this area. These contaminants could include chlorinated solvents, polynuclear aromatic hydrocarbons, and degradation products from the releases. OK
2. The Navy should perform a ground penetrating radar survey in this area to determine the depths of the drainage pipes and the location of possible unknown pipes. OK
3. Modify the Work Plan to include sediment sampling from the unnamed stream and at the storm drain outfall. OK
4. Provide a summary of all previous sampling data in the revised Work Plan. Briefly
5. The Navy should first determine the groundwater flow directions, then reevaluate the proposed Hydropunch sample locations, since many of these depend on knowing the existing flow directions at the site. OK
6. A conceptual site model should be developed in the Work Plan. The model should address groundwater elevation changes caused by the tidal influences of the Thames River, develop a preliminary understanding of groundwater flow directions, and postulate source areas and contaminant migration pathways. OK
7. The Navy should install a monitoring well at the Goss Cove outfall to evaluate groundwater parameters of the Tank Farm and possible contamination from storm drainage water. OK
8. The Navy should install a monitoring well on the south side of Crystal Lake Road between H-8 and H-10 to determine groundwater quality and flow direction. OK
9. Modify the Work Plan to include the gathering of Hydropunch and soil boring samples at the confluence of the 30" PCMP pipe and the 48" RCP pipe, east of Goss Cove. OK
10. A preliminary understanding of the bedrock geology in the area should be presented in the Work Plan to help interpret source areas and pathways. OK

Address  
X-sect of  
bedrock  
6. <sup>sex</sup>  
of Geology

11. Modify the Work Plan to include, at a minimum, the collection of quarterly groundwater level measurements at all water level monitoring points. This data is necessary to help determine potential seasonal variations in water table elevations and groundwater flow direction(s). OK
12. ~~Modify the Work Plan to incorporate the results of the fuel line testing before sampling tasks begin to determine the integrity of the lines and possible source locations. inconclusive.~~  
~~The drainage systems should be investigated as a source area, since it is not water tight and has historically contained contaminants.~~ *Disregard*  
*Disregard Already included.*
13. The "old fuel lines" referred to in the text are not portrayed on a figure and it is not clear whether they have been removed. Clarify the status of these lines in the Work Plan. OK
14. A visual inspection of the interior of the fuel tanks should be performed prior to any sampling to determine which underdrain system is in use for each tank. OK
15. Hydraulic fluid was recovered on five separate occasions in 1990 at the outfall pipe at Goss Cove. Therefore, hydraulic fluid should be one of the primary constituents at this site. *No hydraulic fluid stored in fuel farm*
16. Modify the Work Plan to include the procedure for disposal of contaminated soil, groundwater, drilling muds, well development fluids, and PPE during all phases of the RI. OK
17. The Work Plan should state the procedures to be followed if an unknown underground pipe is breached during RI field investigations. OK
18. Groundwater sampling must include standard water quality measurements of pH, temperature and conductivity to aid in data evaluation and further RI procedures. OK
19. ~~The Work Plan states that the present "drainage system appears to have been installed with perforated metal corrugated pipe (PMCP) to depress the water table by allowing groundwater to collect and discharge into Goss Cove." Also stated is the fact the underground tanks are being decommissioned and that a new drainage system has been designed to replace the old system. Modify the Work Plan to incorporate any possible changes in the groundwater table, and the effects on migration pathways, as this may change the focus of any future RI work.~~ *Disregard*

*Clarify underdrain system.*

*No pop up valves on drawings.*

*Trench drains shown.*

SPECIFIC COMMENTS

1. Page 1-2, p1 Illustrate the fuel oil loading rack on Figure 2. OK
2. Page 1-2, p4 Illustrate the pier and Building 79 on Figure 2. OK
3. Page 1-3, p5 Describe which tank drainage system is believed to be in use for the various tanks. OK

4. Page 1-4, p3 ~~Describe the tank decommissioning procedures which were used for tanks OT-4/OT-5 and OT-6. If soil sampling was conducted during any of these procedures, provide the sampling and analytical results.~~

~~If these tanks are still in the ground, describe the actions the Navy plans on taking to comply with the current standards regulating the decommissioning of Underground Storage Tanks (USTs).~~

*Disregard*

5. Page 1-5, p8 Revise the Work Plan to include the published references which were used to determine the site geology. OK

6. Page 1-6, p1 The site hydrology has not taken into account the tidal influences of the Thames River. OK

Correlate the groundwater elevation measurements to the tidal cycle or the resulting water level maps will be misleading. In addition, include a map of the groundwater elevation data in the Work Plan.

*Contaminating*

7. Page 1-6, p4 Provide the results and recommendations from the Fuss and O'Neil (F&O) Investigation from 1989. Describe the fate of tanks OT-4/OT-

~~7/OT-8 and OT-9. If the F&O report recommends that these tanks be decommissioned, then incorporate soil sampling for TCL/TAL analytes in order to define the extent of contamination due to hazardous wastes and/or hazardous constituents in the tank decommissioning procedures.~~

*Disregard*

8. Page 2-2, p3 ~~Provide the results from the hydraulic testing of the existing fuel lines that extend from the pier to the UST farm. The draft Work Plan indicated that the lines were scheduled to be tested by a contractor in late June/early July 1992.~~ *Disregard*
9. Page 2-2 ~~Describe the proposed procedures that the Navy would use to notify EPA if one or more TCL/TAL analyte is detected during the Underground Storage Tank Sampling as specified in Task 2.~~ *Disregard*
10. Page 2-3
- The Work Plan proposes a soil gas survey along the old and new diesel underground pipelines. Describe any limitations to this field screening method (i.e., low temperature, clay lenses within the soils, man-made objects, etc.) which would limit the usefulness of this data. Include in this description proposed modifications to the sampling method which would be used to overcome the potential interferences. *OK*
- Describe how the temperature and the low volatility of diesel fuels has been considered in the proposed sampling procedure. Include in this response, if applicable, a description of the methods for determining the aerial extent of No. 6 fuel oil in the environment. *OK*
11. Page 2-3, p2 Clarify in this paragraph the use of Building 332 and the condition and location of the old pipelines. *OK*
12. Page 2-5, Section 2.5
- Modify this section to include a description of the proposed methods to determine the rate and direction of groundwater flow. *OK*
- Indicate the direction of groundwater flow on all maps and diagrams and provide, in tabular form, the data which was used in this determination. *OK*

13. Page 2-6, p2 Include a map summarizing previous sampling results in the Work Plan to help ensure that proper sampling locations have been selected. Hydropunch samples H2-1 and H2-2 may miss the dissolved gasoline plume from the NEX station or oil migration near ERM-7.

OK

The Navy should take three (3) additional hydropunch samples between H2-2 and ERM-2, H2-2 and H2-1, and east of H2-1, respectively to help adequately characterize this area.

OK

14. Page 2-6, p7 TB-4 is referred to as upgradient; however this is inconsistent with the proposed groundwater flow direction discussed in the Hydrology section. Clarify this discrepancy.

OK

15. Page 2-7, p1 Although H4-2 will aid in addressing potential groundwater impacts related to spills or leaks at the northeast corner of the old and new diesel oil lines, it is not clear that this is an upgradient sample. The Navy should install an additional monitoring well at the northern side of OT-4 as completed or planned at all additional USTs at the site.

OK

16. Page 2-7, p3 The Navy has proposed to test "selected" oily samples from Tanks OT-5 and OT-6 for the presence of PCBs. Since PCBs are a known contaminant in this area, all soil samples gathered from the area adjacent to Tank OT-5 should be analyzed for PCBs.

OK

Provide the proposed criteria that would be used to determine if the soil samples taken from other areas would be submitted for PCB analysis. All oily samples should be analyzed

OK

17. Page 2-7, p3 Present in tabular form within the Work Plan the groundwater data used to make the flow direction assumptions.

OK

18. The Navy should implement an expanded soil sampling in this area (i.e., ERM 25-28, the oil wastewater containment tank, oil/water separator and OT-10 the waste oil storage tank) prior to the placement of any monitoring wells or conducting hydropunch activities.

5 Do field screening only  
in vicinity of  
o/w sep, upper 2ft  
no composites  
no HDD  
Field GC, PCB Screen =

19. Expand the proposed analysis for ERM-25, 26 and 27 to include pesticides, PCBs and a full TCL/TAL scan, due to the nature of the products stored in this area. OK
20. Include a discussion of the potential source of PCB contamination at OT-5 and the disposal/removal practices at this UST in order to help determine the possible migration pathways and the focus of the sampling efforts. The suspected sources of PCB contamination include leakage from the tank and surficial spills. OK
21. Incorporate soil borings around the loading area into the Work Plan to evaluate whether this is a source of contamination. OK
22. Page 2-7, p5 *Do what they can w/in scope.* The Navy repeatedly describes the analytical results of previous investigations and analyses in qualitative terms. This type of information is not very useful. The final draft workplan should include a complete description of the analytical results from all previous investigations in this area. This information could include the analytical method used for each of the media, the detection limits achieved during the analyses, the list of analytes and the concentrations of each of the analytes. OK
23. Page 2-7, p5 As stated above, groundwater levels must be re-evaluated due to tidal influences of the Thames River. The location of the proposed hydropunch groundwater samples H7-1, 2 and 3 should be reevaluated after a determination of the groundwater flow directions. If a more accurate preliminary groundwater flow model is not possible due to the local underground drainage system, then the Navy should undertake an expanded Hydropunch sampling effort. OK
24. Modify the Work Plan to determine the nature and extent of soil contamination around MW-1. OK
25. Page 2-8, p1 Describe how the locations of the Hydropunch samples have considered the groundwater flow direction. OK

26. Page 2-8, p1 Groundwater flow to the northwest in the vicinity of the tank does not agree with the theory the Navy has presented regarding groundwater level depression, with respect to the underground drainage pipes. Please explain this apparent discrepancy. OK
27. Include in the Final Work Plan a hypothesis on why the groundwater is flowing in a northwest direction (reflecting currently proposed updated groundwater data) and why MW-12 is dry. OK
28. As stated earlier, the Navy should install a monitoring well in the southeast corner of this site directly north of H-7 to aid in the determination of groundwater flow directions and quality in this area. OK
29. Page 2-8, p2 The Navy has indicated that more than 2 feet of floating oil has been found in Well MW-7. If this is an accurate statement, then the Navy should immediately implement steps to stabilize the migration of this material (e.g. installation of extraction/scavenger wells).
30. Page 2-8, p6 Some of the proposed locations for the Hydro-punch groundwater samples in the vicinity of Tank OT-8, such as H8-3, may be affected by the nearby fuel lines. OK
- The Navy should move the Hydropunch sampling locations to areas which are less likely to be affected by the fuel lines.
31. Page 2-8, p6 The Navy should gather an additional Hydro-punch sample in the southeast of MW-7 between the diesel and salt water pipe to determine flow direction and obtain a groundwater sample from near the diesel lines. OK
32. The Navy should install a monitoring well in the southeast corner, interior of the pipeline and directly north of H-7, to aid in both the short-term hydrogeologic conditions at this site and the long term RI monitoring and evaluations. OK

33. Page 2-10, p3 The Navy has proposed to screen for the presence of volatile organic compounds (VOCs) using a Micro Tip II Photoionization Detector (PID). Describe the appropriateness and strength of the detector lamp in electron volts (eV). ok
34. Describe the field methods which will be used to determine the aerial extent of contamination caused by No. 6 Fuel Oil. ok
35. Describe the sensitivity of the PID and the Organic Vapor Meter (OVM) to colder weather temperatures. Include in this description how the Navy will compensate, if necessary, for the potential loss in sensitivity of these field methods (e.g., sampling soil headspace within a field trailer, etc.). ok
36. Page 2-11, p3 When the Hydropunch II is used in the hydrocarbon sampling mode as proposed, the sample is exposed to potential debris and water leakage from the entire length of the drive pipe above it. The Navy must state the QA/QC procedures intended for all Hydropunch sampling activities, especially those low-level, sensitive sampling. ok
37. Modify the procedures to be used when the Hydropunch II is used in the hydrocarbon sampling to include measuring and recording the depth to groundwater. ok
38. Page 2-12, p1 Modify the Work Plan to include the grouting of the screen and drive point at the surface. ok
39. Page 2-12, p3 Describe in the Work Plan the composition of the well screens. ok  
*↳ for hydropunch*
40. Page 2-13, p1 The Navy has proposed to sample the existing contents of the tanks and then, based on the analytical results, evaluate the need for additional analyses at other sampling points. This proposed method for determining the list of analytes will not adequately address the historical contents and potential historical releases of the tank's contents.

- Modify the analytical methods to include a full list of TCL/TAL parameters to confirm or deny the presence of hazardous materials in the source area(s). OK
41. Page 2-13, p2 Monitor background water level fluctuations in a nearby well during slug testing to quantify the effect of tidal induced water level changes. Otherwise, the slug tests may not yield accurate results. OK
42. Page 2-14 *Show NEX Plume & any other hnts.* Modify the workplan to include the preparation of a map of the study area. This map would visually describe the distribution of contaminants, with contours of the chemical concentrations and the aerial. The vertical extent of contamination should be demonstrated through cross-sections. OK
43. Page 2-14, p1 The EPA concurs with the Navy that collection of surface water samples at the unnamed stream, prior to the stream entering the tank farm, will help determine whether contaminated surface water is entering the tank farm from an unidentified source(s). OK
44. Sampling results obtained from the outfall may not uniquely indicate contaminants entering the stream since the outfall serves as the end point for several contaminant pathways. However, the stream is channeled through the same drainage system as the Tank Farm and sampling the outlet will not determine if petroleum is entering the stream within the tank farm. Revise this statement in the Final Work Plan. OK
45. Indicate the locations of the surface water samples on Figure 2. OK
46. Page 6-1, p2 Revise the Work Plan to reference the Compendium of Superfund Field Operations Methods. OK
47. Page 6-1, p3 Revise the Work Plan to ensure that, in accordance with EPA guidance, no well screen should exceed 10 feet. OK
48. Page 6-8, p4 Revise the Work Plan to ensure that all data validation will be performed according to EPA - Region I Standards. OK

49. Figure 2

The location of the Goss Cove outfall does not appear to be correct and should be reevaluated. *ok*

50.

Indicate the locations of the surface water samples on Figure 2. *ok*