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STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

January 13, 1992

Deborah Stockdale
Environmental Restoration Branch
Naval Facilities Engineering Command
10 Industrial Way (Mail Stop 82)
Lester, PA 19113-2090

Re: Naval Submarine Base New London (NSBNL)
Groton/Ledyard, Connecticut

Comments on the Draft Phase II Remedial Investigation Work Plans, dated November 1992.

Dear Ms. Stockdale:

The draft work plans for the Phase II Remedial Investigation and Field Sampling Plan have been reviewed by staff from the Permitting, Enforcement and Remediation Division (PERD) of the Connecticut Department of Environmental Protection (DEP). The work plans were prepared for the NSBNL facility by Atlantic Environmental Services, Inc., on behalf of the Northern Division Naval Facilities Engineering Command in Lester, Pennsylvania. The following are comments based on a review of these work plans.

General Comments:

1. Soil samples were obtained and analyzed from an active Pistol Range located adjacent to the Area A Downstream site in 1990. It is our understanding that these soil samples were obtained because the NSBNL was contemplating construction of a parking lot on top of the firing range. Based on the elevated concentrations of lead detected in the soil from the Toxicity Characteristic Leachate Procedure (TCLP), any excavated soil from this site would be classified as a hazardous waste under the Resource Conservation and Recovery Act (RCRA). This area must be further evaluated within the proposed Phase II Area A Downstream investigation to determine if groundwater is being impacted from the high concentrations of lead detected in the soil. At a minimum, this would involve installation of upgradient and downgradient monitoring wells in order to analyze the groundwater for Target Analyte List (TAL) inorganics, specifically lead.

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2. A question was brought up at the last joint Technical Review Committee (TRC)/Public Meeting held in December, 1992 asking if the State Department of Health Services (DOHS) maintained a database containing exposure limits (risk reference doses (RfDs) and/or carcinogenic potency factors (CPFs)) for compounds that were more or less restrictive than federal or other recognized industry limits. The DOHS Division of Environmental Epidemiology & Occupational Health was contacted following the meeting and indicated that they do not maintain a database with exposure limits different from that obtained from standard sources.

   However, DOHS does compile Health Risk Determinations in response to requests for evaluating potential drinking and cooking and/or bathing and showering risks from the use of polluted wells. As established under Section 22a-471 of the Connecticut General Statutes, Health Risk Determinations are used in establishing action levels and are applicable to all private water supplies where there are no established standards.

3. It is recommended that Sections 7.0 and 8.0 of the Phase II Remedial Investigation work plan be combined with the Field Sampling Plan and QA/QC work plan, respectively. It appears that most of the information contained in these sections is duplicated in the Field Sampling Plan and QA/QC work plans.

4. Appendix C contains a memo from Menzie-Cura & Associates, Inc. to Atlantic Environmental Services, Inc. The memo describes the potential target remediation levels for contaminated soils for the following contaminants: polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), DDTR and lead. These target levels were developed based on calculations derived from the risk assessment conducted as part of the remedial investigation/feasibility study (RI/FS). It is important to include within this work plan and the feasibility study all calculations used to determine each clean-up level. These calculated clean-up levels need to be documented and compared to federal and state Applicable or Relevant and Appropriate Requirements (ARARs) and To Be Considers (TBCs) as these may require more stringent clean-up standards.

5. Section 5.3.4 (Characterization of the Estuarine Environment of the Thames River) of the Phase II Remedial Investigation work plan describes the tasks that will be conducted under the ecological study to characterize the Thames River in the vicinity of the NSBNL. It would be of benefit to include a map or figure identifying the commercial shellfisheries along the Thames River to the north and south of the NSBNL. It is our understanding that the member towns on the TRC committee maintain this information.

6. It is recommended that the contaminants or compounds of potential concern for those sites where soil and/or groundwater contamination has been detected be contoured and plotted on site maps. This task could be either incorporated within this work plan or added after completion of the Phase II investigation. This information will aid in visualizing the nature and extent of contamination for each site and assist in remedial efforts during the feasibility study.

7. Performance of a base-wide measurement and contouring of groundwater elevations from monitoring wells at the NSBNL was requested by EPA and agreed to by the Navy and DEP several months ago. It was decided that the water table measurements should be conducted within a very short time-frame to avoid errors from using existing seasonal data. No task has been incorporated within these work plans to accomplish this requirement. Please clarify if this task will be accomplished within the framework of these investigations.

8. All analytical results to date for boron that has been detected in surface and ground waters should be flagged and footnoted within this report. The footnote should indicate that the analytical results for boron may be inaccurate due to lab error.

DRAFT WORK PLAN PHASE II REMEDIAL INVESTIGATION comments:

9. Page 16, **Supplemental Step I Investigation** - Include an explanation within this section as to why Supplemental Step I investigations are not being conducted as part of this work plan for the CBU Drum Storage Area and the Over Bank Disposal Area Northeast (OBDANE) sites.

10. Page 23, **Nature and Extent of Contamination** - The second paragraph should note that 1,1-dichloroethene was detected at 1 ppb and that 1,1-dichloroethane was detected at 30 ppb for the Torpedo Shops site.

11. Page 25, **Goss Cove Landfill** - Define the saturated thickness and perpendicular cross sectional length used in calculating the groundwater flow velocity at the Goss Cove Landfill. This data was supplied for the DRMO site on page 47 and for the Lower Subase site on page 51.

12. Page 33, **Weapons Center** - It is unclear where Building 524 is located. Please depict its location on Figure 2-12.

13. Page 43, **Residential Well Analytical Results** - The top paragraph on this page noted that boron was found in all residential wells above the USEPA health advisory of 600 ppb. This paragraph should be revised to reflect the following information; 1) that the validity of the initial three rounds of sampling data analyzed by N.E.T. Atlantic was found to be unreliable due to lab error, 2) that supplemental sampling conducted by the Navy and DEP in August 1992 found boron levels well below the USEPA health advisory, and 3) that a separate draft Plan of Action and/or Field Sampling Plan to further evaluate boron will be contingent on whether future sampling of residential homes surrounding the NSBNL confirms previous analytical data.

14. Page 119, **Rubble Fill at Bunker A-86** - Methoxychlor at 370 ppb in the soil exceeds the State Drinking Water Standard of 100 ppb. Therefore, it is not correct to state that no chemical-specific ARAR/TBC values were exceeded during the Step I investigation performed at this site. The DEP guidance for soil clean-up would apply as a TBC value for this site.

15. Page 120, **Table 6-2** - It is noted that chemical-specific ARAR/TBC values exceeded during the Step I investigations are presented in Table 6-2. Boron should be flagged in this table and elsewhere due to the possibility of erroneous lab data.

16. Page 128, **Risk Assessment** - It is noted in the second sentence on the top of page 128 of the Human Health Risk Assessment section that no potable water supply wells exist in the potentially affected downgradient areas for the Area A site. It is premature to note this until monitoring well data is obtained southeast of the Area A landfill. Should groundwater be found to be migrating in a southeasterly direction, several residential wells could be affected downgradient of this site. This statement should be clarified.

17. Page 3, **References** - Reference to "USEPA, 1988. Contract Laboratory Program Statement of Work for Inorganics Analysis. 7/88." should be noted only once.

18. Page 2, **Appendix C** - In developing a maximum target cleanup level for PCBs in surface soils, Menzie-Cura & Associates, Inc. selected a level of 10 mg/kg. It was incorrectly noted that this level is consistent with levels that have been used in Connecticut and other states to guide remediation efforts. It should be noted that 10 mg/kg is consistently applied only at GB classified areas in Connecticut. The NSBNL is located in a GA classified area and PCB clean-up in GA areas must attain a level of 2 mg/kg.

DRAFT FIELD SAMPLING PLAN, QA/QC PLAN AND HEALTH AND SAFETY PLAN comments:

19. Page 5, **Supplemental Step II Investigations** - The last sentence in the second paragraph should be revised to note that the investigation for determining the source of boron may not be conducted. The investigation will be dependent on the results obtained from the first quarterly round of sampling proposed for the residential homes.

20. Page 16, **Sample Headspace Screening for VOCS** - This section noted that data obtained from the screening of soil samples in the field with a photoionization detector or flame ionization detector will not be used "qualitatively". Substitute quantitatively for qualitatively.

21. Page 20, **Monitoring Well Construction** - It is unclear how a 1-gallon per minute or greater flow rate will be determined in the field during bedrock drilling. Please clarify.

22. Page 25, **Rubble Fill at Bunker A-86** - A test boring will be advanced through the rubble fill at bunker A-86 to evaluate potential surficial contamination as part of the Step II investigation. Although it is not stated, it should be indicated that a visual inspection of the rubble fill will be conducted during the test boring to characterize the contents.

23. Page 32, **Table 4-9** - It appears that the location of the deep monitoring well 7MW2D is depicted on Figure 4-4 as side-gradient of the north leachfield system, rather than down-gradient (see Table 4-9). Monitoring well 7MW2D should be depicted and installed downgradient of the existing monitoring well 7MW2S in order to monitor the quality of groundwater downgradient of the leachfield. In addition, monitoring well 7MW3D should be moved further west of its presently depicted location on Figure 4-4 in order to characterize groundwater downgradient of the south leachfield system.

24. Page 32, **Table 4-9** - Based on data contained in the Goldberg-Zoino & Associates, Inc (GZA) report located in Appendix A, mineral spirits up to 11,000 mg/kg were detected in the area around the waste Otto fuel sump and tank. Total petroleum hydrocarbon (TPH) analysis must be included along with the other proposed analysis for those test borings and wells installed near the former underground Otto fuel tank. In addition, it should be noted within this section whether any visible contamination was evident and samples taken from the tank grave during closure of this tank.

25. Page 30, **Torpedo Shops** - It is noted on this page that a soil gas survey will be conducted at specified grid points in areas surrounding the Torpedo Shop buildings and storage areas. It is advised that methane be analyzed as well as volatile organic compounds (VOCs) during the soil gas survey. The October 1989 analytical results from the GZA report revealed that methane was detected in the auger cuttings for GZ-1 and GZ-3 up to 9.5 ppm adjacent to Building 450. It is not clear where and/or why the methane is being generated, but screening is recommended due to the proximity of the buildings.

26. Page 34, **Figure 4-4** - It does not appear that surface water sample location 7SW1 is depicted on Figure 4-4. Please correct.

27. Page 38, **Table 4-11** - It is recommended that methane monitoring be conducted in addition to the proposed air sampling for VOCs within and around the Nautilus Museum Building. Monitoring of methane is also recommended during installation of monitoring wells 8MW6S&D due to proximity to the museum.

28. Page 57, **Area A Landfill** - It is noted that detection of PCB concentrations at or above 10 ppm in any or all of the borings drilled within or around the concrete pad will prompt the initiation of supplemental boring(s) to better delineate the outermost extent of contamination. State clean-up levels for PCB-contaminated soils to 10 ppm is consistently applied only to areas with a GB groundwater classification. The NSBNL is located in an area with a groundwater classification of GB/GA or GA. DEP will require that PCB-contaminated soils be remediated to 2 ppm at the NSBNL. In addition, core samples should be obtained from the concrete pad to determine whether PCBs are leaching from the pad into the subsurface and potentially contributing to groundwater contamination.

29. Page 58, **Area A Landfill** - It is noted that bedrock monitoring wells 2WMW21D, 2LMW20D, 2LMW19D and 2DMW23D will be installed to a minimum open hole depth of approximately 100 feet below the surface of the bedrock. This depth was chosen so that groundwater samples collected from these wells would be representative of, and comparable to, those collected from residential wells located off the NSBNL. It is recommended that continuous packer testing and sampling at a specified interval be conducted for one or more of the proposed deep monitoring wells to identify high yielding water bearing zones and any potential contamination. The selected deep bedrock well(s) should then be screened at the appropriate depth based on highest yields. The residential wells located off the NSBNL are most likely not screened, thus it would be more reasonable to screen at those intervals where the highest yields are obtained within the bedrock as this will be representative of the primary source of water to the residential wells.

30. Page 58, **Area A Landfill** - The first paragraph on this page indicates that select residential wells will be "measured" twice. This seems inconsistent with proposals to sample and measure water tables of off-site residential homes on a quarterly basis for a period of one year. Please clarify.

31. Page 58, **Area A Landfill** - It is noted that the pump well proposed within the northwest section of the Area A Landfill site will be screened approximately 40 feet throughout the entire saturated thickness of the overburden aquifer. It should be explained where the four proposed observation wells will be located and whether they will also be screened the full length to measure average hydraulic heads in the overburden.

32. Page 58, **Area A Wetland** - The section covering the Area A wetland should note that proposed sediment sample locations are depicted on Figure 4-7, not Figure 4-8.

33. Page 59, **Area A Wetland** - It is noted that the deep bedrock monitoring well 2WMW5D will be installed to the depth of the first water bearing zone of fracture concentrations. Explain in this section how the water bearing zone will be determined.

34. Page 59, **Area A Wetland** - It may be more reasonable to measure the water table for each Area A Wetland well on a quarterly basis in conjunction with residential wells.

35. Page 61, **Area A Downstream/OBDA** - The third paragraph notes that sediment and surface water samples located at the groundwater seeps into North Lake will be sampled and analyzed for TCL parameters. This action is being taken to determine if any upgradient, contaminated groundwater may be impacting the lake. With this in mind, it is recommended that a limited soil gas survey and subsurface sampling be performed at monitoring well 2DMW15S. Phase 1 investigations found TCE, PCE and other compounds at elevated levels within subsurface soils at this location. This area is located just upgradient of North Lake and should be further investigated to define the extent of contamination. The non-detect analytical results of the groundwater from this well is not sufficient justification for discontinuing any further characterization at this location.

36. Page 63, **Defense Reutilization and Marketing Office (DRMO)** - Explain the rationale for replacing existing upgradient monitoring wells 6MW5S&D with wells 6MW6S&D at the DRMO site. In addition, test boring 6TB4 should be converted into a monitoring well to analyze groundwater in this area. Remediation of this area may be required due to the high soil gas and subsurface soil sample contaminant concentrations detected in this area from the Phase I investigation.

If you have any question with the above comments, please call me at (203) 566-5486.

Sincerely,

Paul Jameson

Paul Jameson
Senior Environmental Analyst
Permitting, Enforcement and
Remediation Division
Bureau of Water Management

cc: Andrew Miniuks, EPA
Carol Keating, EPA
William Mansfield, NSBNL
Jennifer Kertanis, DOHS