



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION



April 16, 1993

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

Re: Action Memorandum, Naval Submarine Base New London (NSBNLON)

Dear Ms. Stockdale:

Staff of the Permitting, Enforcement and Remediation Division of the Connecticut Department of Environmental Protection have reviewed the document titled "Action Memorandum for Building 31 Naval Submarine Base New London" (Action Memo), dated April 1993. The Action Memo was prepared by Halliburton NUS Corporation on behalf of the Northern Division Naval Facilities Engineering Command (NORTHDIV).

The Action Memo details the Navy's proposed remedial measures to be implemented at Building 31 at the Naval Submarine Base New London (NSBNL). It is our understanding that the proposed remedial measures would consist of excavating contaminated soil, mixing the soil with a cementitious material and placing the soil/cement mixture in the excavation within the confines of the building. In areas where utility lines will be located, excavated soil will be removed from the site and properly disposed.

Connecticut's standards for leaving contaminated soil in place require that, based on the results of a toxicity characteristic leaching procedure (TCLP) analysis, the TCLP leachate not exceed drinking water standards. In addition, the State's promulgated Water Quality Standards prohibit the placement of materials in GA goal groundwater areas that could be a source of pollution to those groundwaters. For this reason we have grave reservations regarding the viability of the proposed measures.

The State has several concerns regarding the durability of a soil/cement mixture within the subsurface environment beneath Building 31. Tidally influenced water table fluctuations causing wetting and drying cycles, exposure to saline groundwater, and potential freeze thaw cycles may contribute to the degradation of the soil/cement mixture and thereby severely compromise the encapsulating properties of the mixture.

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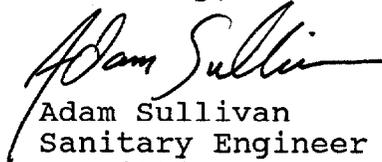
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The State recommends that either a comprehensive pre-design study be performed to evaluate the feasibility of solidification within a marine influenced subsurface environment, or that NORTHDIV consider an alternative approach to minimize the environmental impact of the contaminated soil beneath Building 31.

The attachment to this letter contains comments pertaining to the Action Memo. If you have any questions please contact me at (203) 566-5486.

Sincerely,



Adam Sullivan
Sanitary Engineer I
Permitting, Enforcement and
Remediation Division
Bureau of Water Management

cc: Carol Keating, USEPA
William Mansfield, Navy
Willis Isner, Halliburton NUS Corporation

ATTACHMENT

Comments Pertaining to the "Action Memorandum for Building 31 Naval Submarine Base New London", Dated April 1993

General Comments:

1. Pre-Design Studies

As noted in the cover letter to this attachment, the State has several concerns regarding the durability of a soil/cement mixture within the tidally influenced subsurface environment beneath Building 31. Due to factors such as periodic wetting and drying, freeze/thaw cycles, and exposure to saline groundwater, the soil/cement mixture will be prone to mechanical and structural degradation which may ultimately mobilize encapsulated contaminants to the environment.

The State believes that the feasibility of implementing solidification technology at this site has not been thoroughly evaluated and, therefore, may prove to be inappropriate for this time-critical removal action. Numerous data gaps must be addressed before this technology is considered. Existing data gaps include but are not limited to the following:

- a) bench scale testing to determine the strength of the soil/cement mixture (unconfined compressive strength, confined compressive strength, etc.);
- b) index and physical properties of subsurface soil (grain size, moisture content, density, etc.);
- c) freeze/thaw durability (ASTM D4842);
- d) wet/dry durability (ASTM D4843);
- e) evaluation of the deleterious effects of saline water to the soil/cement mixture;
- f) evaluation of the compatibility of the soil-waste matrix vis a vis solidification agents (i.e. will the presence of volatile or semi-volatile organic compounds inhibit setting or curing reactions).

2.) Leachability

Provisions should be made for determining the leachability of the soil/cement mixture to ensure that the solidified matrix is capable of meeting all applicable and relevant or appropriate requirements (ARARs) and To Be Considereds (TBCs).

3). Clean Up Levels

The Action Memo specifies that the clean-up level for the time-critical removal action will be 500 ppm for lead based on mass analysis. The site is located in an area with a groundwater classification of GB/GA. As such the State will require that the clean up level achieve 50 ppb based on the toxicity characteristic leaching procedure (TCLP).

SPECIFIC COMMENTS

4) Page 3-3 Section 3.1.2, Actual or Potential Contamination of Drinking Water

The groundwater classification of the site is misstated as GA/GB. Please revise the text to state that the groundwater classification at the site is GB/GA.

5) Page 5-1 Section 5.1.1.1, Excavation, Onsite and Offsite Solidification

a) All soil removed from the site must be handled in accordance to federal, state, and local regulations. All appropriate permits and approvals must be secured by NORTHDIV prior to offsite solidification and disposal.

b) It is estimated that the solidification process will increase the volume of soil to be placed within the building by 15%. The Action Memo states that the excess solidified soil could be uniformly distributed within the building to accommodate the excess volume. If this option is appropriate, it is estimated that the floor would be raised approximately 4.5" from its existing elevation. Further, it is stated that if this option is inappropriate "clean" soil from within the building could be removed and placed elsewhere within the NSBNL site.

Any soil excavated from the building must be thoroughly characterized prior to placement within the NSBNL site. In addition, the Action Memo must clearly state "clean" soil criteria.

Connecticut's criteria for re-use of soil from contaminated sites is that the soil be "non-detect" upon mass analysis for the identified contaminants.

c) The Field Sampling Plan and Quality Assurance/Quality Control Plan which will be prepared during the design phase must be submitted to the DEP for review and comment.