



**STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION**



**BUREAU OF WATER MANAGEMENT
PERMITTING, ENFORCEMENT & REMEDIATION DIVISION
FEDERAL REMEDIATION PROGRAM**

via e-mail and US Mail

September 22, 1998

Mr. Mark Evans
U.S. Department of the Navy
Northern Division, Naval Facilities Engineering Command, Code 1823
10 Industrial Way, Mail Stop 82
Lester, PA 19113-2090

Re: Navy's Responses to State Comments Regarding Draft *Ground Water Monitoring Plan for Area A Landfill*, Naval Submarine Base- New London, Groton, Connecticut

Dear Mr. Evans:

The Department has received and reviewed the Navy's letter dated July 29, 1998. That letter provided the Navy's responses to the State's June 24, 1998 Comment letter on the Draft *Ground Water Monitoring Plan for Area A Landfill* at the Naval Submarine Base New London in Groton.

Most of the State's concerns have been satisfactorily addressed in the Navy's comment letter. However, three issues remain outstanding.

The first remaining issue concerns the length of time during which ground water monitoring will be conducted. The State's concerns regarding this issue are outlined below in General Comment 4. The second remaining issue concerns the use of the aquatic life criteria listed in the State's Water Quality Standards as surface water protection criteria. The State's concerns regarding this issue are outlined in General Comment 5. The third remaining issue concerns the Navy's proposal to use an upgradient domestic well to establish background concentrations in ground water. The State's concerns regarding this issue are listed below in specific Comment 26.

I look forward to our conference call on Thursday September 24 to discuss these issues.

This letter uses the same numbering system for comments as in the Navy's July 24 letter.

General Comments

4. The Navy's response is not acceptable. I wish to reiterate that under the Solid Waste management Regulations, groundwater monitoring may be required for 30 years following closure. The Navy is "open to discuss longer than one year groundwater monitoring" under the solid waste

regulations. The Navy suggests extending groundwater monitoring to three years, with quarterly sampling during the first year and semi-annual sampling during the final year. The Navy states that "it is unlikely that the effects of bulk waste disposal are yet to be manifested". However, capping of the landfill was completed in 1997. Capping of the landfill has created a new hydrogeologic regime which is unlikely to have reached steady state conditions after one year. Several years worth of **quarterly** monitoring data are necessary to establish temporal trends before the data can be considered sufficiently robust to establish baseline conditions. At the end of the first five year review period under CERCLA, it would be appropriate to request modification of the required ground water monitoring program. One of the objectives of the monitoring program is to evaluate the continuing effectiveness of the landfill cap in reducing the impact of landfill wastes on ground water.

5. The Navy states that "it would be very difficult to evaluate exceedances" of surface water protection criteria based on the State's Aquatic Life Criteria because many of the resulting criteria are below any practical detection limits. It is not the State's intention to require the Navy to establish or comply with remediation criteria which are below practical detection limits. Section 22a-133k-3 (f)(4) of the Remediation Standard Regulations defines the steps which are required when, due to matrix interference effects, a criterion for a substance in groundwater is lower than the lowest concentration which can consistently and accurately be quantified in a specific sample without matrix interference effects. If, after taking the steps outlined in the regulation to deal with matrix interference effects, the applicable criterion is less than the lowest concentration which can consistently and accurately be quantified in a specific sample without matrix interference effects, the criterion shall be equal to the lowest quantity which can consistently and accurately be quantified without matrix interference effects.

Specific Comments

9. Please see the State's comments concerning the Navy's response to General Comment 4.

19. The Navy states in the Response to Specific Comment 16 that wells 2LMW7S, 2LMW8S, and 2LMW3S, which are screened across the boundary between fill and dredge spoil, or fill and alluvium, will be eliminated from the monitoring program. In the response to Specific Question 19, the Navy states that although these wells are screened across more than one stratigraphic unit, wells screened across both landfill material and dredge spoil will largely be representative of the groundwater potential of the landfill material. However, according to Table 3-1, well 2LMW8S is located at the fill/ alluvium interface. It is difficult to support, without specific data, an argument that hydraulic potential measured in any of these wells will be reflective of one stratigraphic unit or another. Since these wells will be eliminated from the monitoring program, data from them should not be used to construct maps of hydraulic potential.

20. Please see the State's comments concerning the Navy's responses to General Comment 5. Since ground water from the landfill discharges to the Area A Wetland (a fresh water wetland), the aquatic

life criteria specified in Appendix D of the Water Quality Standards apply in lieu of the surface water protection criteria. In cases where the resulting criteria is below the lowest achievable detection limit, the criteria will be equal to that detection limit. Regardless of whether the aquatic life criteria are considered "first tier" or "second tier" criteria for ground water, the Navy will be required to comply with them.

22. Section 5.2.2 lists contaminants of concern which were selected because they were detected at concentrations which exceed the pollutant mobility criteria. The text states that "these chemicals will be monitored to insure that they are not adversely impacting groundwater...". The Navy's response refers the reader to Table 5-1, which lists only the surface water protection criteria. The Navy should specify how they will decide that contaminants are "adversely impacting groundwater" due to pollutant mobility concerns. Since the aquatic life criteria of the State's Water Quality Standards apply in this situation, they should be listed in Table 5-1, rather than the surface water protection criteria. Where necessary, the aquatic life criteria listed in Appendix D should be adjusted to account for detection limits which are greater than the aquatic life criteria.

25. In the first paragraph of the response, the Navy suggests a three year ground water monitoring program, with sampling performed on quarterly basis the first year and semiannually in the following two years. As explained more fully in the State's responses to General Comment 4, this is not acceptable.

In the second paragraph, the Navy states that they believe the Connecticut Water Quality Standards "should only be considered as secondary monitoring criteria". Regardless of whether the Navy considers the aquatic life criteria of the Water Quality Standards to be primary or secondary criteria, they still apply as ground water criteria under the Remediation Standard Regulations.

26. The Navy's response is not acceptable. A domestic well located ½ mile upgradient from the landfill cannot be used to establish background concentrations under the Remediation Standard Regulations. I wish to reiterate that under the Remediation Standard Regulations, a background concentration in ground water is determined "(A) at the **nearest location** upgradient of and unaffected by the release; or (B) if such release occurred at or created a ground-water divide, at the **nearest location** representative of ground water quality unaffected by the release" (emphasis added). The concentrations of lead, zinc, and copper detected in this well suggest the effects of metals leaching from the building's plumbing system, rather than reflecting natural ground water quality. In addition, no records are presented regarding the construction, depth, etc. of the residential well. An upgradient monitoring well located in close proximity to the landfill must be used to establish background levels of contaminants in ground water.

28. The Navy's response is not acceptable. Please see the State's comments regarding the Navy's response to General Comment 4.

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If you have any questions regarding this letter, please contact me at (860) 424-3768.

Sincerely,



Mark R. Lewis
Senior Environmental Analyst
Federal Remediation Program
Permitting, Enforcement & Remediation Division
Bureau of Water Management

cc: Kymberlee Keckler, US EPA New England, Federal Facilities Section
Jeff Sullivan, NSBNL Environmental Department
Corey Rich, TiNUS Environmental