



STATE OF MAINE

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March 7, 1994

Mr. Fred Evans
Project Manager, Code 1821
Department of the Navy, Northern Division
Naval Facilities Engineering Command
10 Industrial Highway, Mailstop 82
Lester, Penn. 19112-2090

RE: Draft Final Long Term Monitoring Plan Building 95, Sites 1 and 3 and Eastern Plume, Brunswick Naval Air Station, Brunswick, Maine

Dear Fred:

The Department has received and reviewed the Draft Final Long Term Monitoring Plan for Building 95, Sites 1 and 3 and Eastern Plume, dated January, 1994. The Department's comments are provided below.

General Comments

1. The Department requests that the Navy consider alternative environmental statistical software to the GRITS/STAT program. The GRITS/STAT program is difficult to use and the data outputs are not very flexible. The Department recommends an alternative software package like the MONITOR program, which meets USEPA and MEDEP requirements.

Specific Comments

2. Page 1-1, Section 1.1, Purpose and Scope, second paragraph. This section should more clearly explain that the remedial action proposed for the Eastern Plume in the Interim ROD addresses only the management of migration of contaminants in groundwater. The action does not address the source of contamination. Long term monitoring for the Eastern Plume is intended to serve a different purpose than long term monitoring for Sites 1 and 3 and Building 95.

3. Figure 3-2:
SW/SED and seep location located on Figure 3-2 are labeled differently from those presented in the Draft RI Report (Figure 6-27). Are the proposed locations the same as those sampled during the RI? If so, please provide a table that cross references the

locations so that the analytical data can be evaluated. If they are not in the same locations, please provide justification for moving each sample site.

4. Additional sampling points:

All monitoring wells in the vicinity of Sites 4, 11, and 13 should be included in the LTMP. Sample locations MW-303, P-102, MW-314A, MW-314B, MW-315A, MW-315B, and P-119 should be added to the proposed long term monitoring plan. These data points are required to accurately assess the effectiveness of remedial actions outlined in the RODS.

Navy Responses to Draft Comments

5. The methods proposed for groundwater sampling must be further evaluated. The data quality objectives should include an understanding of how the sampling methods will be evaluated. Dissolved oxygen is a sensitive field parameter that should be measured along with turbidity, specific conductance, temperature, and pH.

6. Scientific literature has shown that monitoring dissolved oxygen during well purging is important. Dissolved oxygen results are useful in understanding the chemistry of the groundwater. Research has demonstrated that data reduction of inorganic results can indicate the quality of data being collected. Anion cation balance diagrams are useful in determining the basic chemistry of the groundwater and evaluating laboratory results. Modification of sampling methods and laboratory procedures will be needed if the ions are not in equilibrium. Inorganic ion diagrams have been produced in the past at BNAS. Using these diagrams in the future can demonstrate how the groundwater chemistry has changed during remedial efforts.

7. It appears that the long term monitoring plan for the Eastern Plume and Sites 1 and 3 is based on five incomplete rounds of sampling. Many of the monitoring wells have been sampled only one time, the most times that any well has been sampled has been four times. This data does not appear to present an accurate picture of pre-remedial conditions on which to base the effectiveness of the remedial actions.

8. Based on a cursory review, it appears that only 10 of the proposed long term sampling points have been sampled three or more times. The Navy has stated that the minimum data requirements for parametric data analysis are on the order of 4 data sets and 7 data sets for non-parametric data. None of the existing wells have sufficient data to support non-parametric data analysis. Only three of the proposed sampling points have 4 rounds of data that may support parametric data analysis. Please explain.

9. Summary tables of all previous sampling rounds must be included in this report.

10. Information on flow paths and expected travel times from Sites 1 and 3 to the downgradient monitoring points should be included in this Report. This information is required to ensure that the samples collected are temporally and spatially separate.

- 11.. Figure 5: Interpretive Groundwater Surface Contour Map in the Numerical Modeling Report. The contour map must overlay a base map that shows all pertinent information including: all existing wells, buildings, Operable Units, etc..
12. Figure 3-2: The legend of Figure 3-2 must be updated. The legend must include extraction wells. "New" monitoring wells is not accurate unless new wells are proposed. The Figure must show all existing monitoring wells, some wells around Site 9 are missing.
13. The Department agrees with the Navy that the data collected after remedial actions are complete should be compared to data collected before remedial actions begin. However, the Department believes that the data collected to date is incomplete. Efforts should focus on strengthening the pre-remediation groundwater database. Sampling should begin as soon as possible. Once the flow paths and travel times have been reviewed, decisions can be made on sampling frequency. It may be possible to collect groundwater samples that are spatially separate in a short time period.

Please call me at 207-287-2651, if you have any questions or would like to arrange a meeting to discuss these comments.

Sincerely,



Nancy Beardsley
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