STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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October 17, 2002

Mr. Orlando Monaco
Department of Navy
Engineering Field Activity-Northeast
Code 1823/OM
10 Industrial Highway, Mailstop 82
Lester, PA 19113-2090

Re: Site 9, 2001 Annual Report Monitoring Events 18 & 19
Naval Air Station, Brunswick

Dear Mr. Monaco:

The Maine Department of Environmental Protection (MEDEP) has reviewed the draft report entitled "2001 Annual Report, Monitoring Events 18 & 19, Site 9 Neptune Drive Disposal Area, dated August 2002, prepared by EA Engineering, Science and Technology. Based on that review MEDEP has the following comments and issues.

General Comments:

1. Vinyl chloride and total 1,2-dichloroethene trends have continued upward throughout 2001, continuing a trend began in early 1999. (When plotting trends, MEDEP uses the maximum concentration measured from all diffusion samplers in MW-NASB-069). MEDEP's concern is unchanged from that expressed in our Monitoring Event 19 comment letter of July 25, 2002 (Comment 1). MEDEP is looking forward to presenting our concerns at the next technical meeting (October 22, 2002). (NR)

2. The specific method that the Navy has used in selecting concentration values to plot in the VOC graphs (Appendix A) should be standardized and explained in the text. For wells where several data sets are collected per event, (i.e., primary set of multiple diffusion samples at different depths, duplicate set of diffusion samples - not necessarily all depths, and one or two low-flow samples) the selection criteria should be agreed upon by the stakeholders. It looks like the plotted values in the 2001 report are some kind of derived average. MEDEP proposes that the highest value at each well be used, unless it is obviously an outlier. Our rational is that volatilization in the field and lab may reduce solvent concentrations, but field and lab procedures (except cross-contamination) are unlikely to add solvent concentration to a sample. (ED/MTG)

Specific Comments:

3. Section 2.2.3, Vinyl Chloride/Total Dichloroethene Ratio, p. 2-2, 2nd sentence:

"A decreasing concentration of total DCE (parent compound) and an increasing concentration of vinyl chloride (daughter product) indicated the rate of the dechlorination processes increasing."

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Table in text characterizes the vinyl chloride to DCE ratio for MW-NASB-069 as "increasing" (p. 2-3).

The accuracy of these statements depends on what laboratory concentrations were selected for plotting (See comment 2 above). While the Navy's graph for MW-NASB-069 in Appendix A could support this statement, a graph of the highest concentrations for each event shows nearly the same increases in both parent and daughter compounds in the last two years. Such a 1:1 relationship implies to MEDEP that the parent dechlorination process has not yet peaked, and that the source of DCE has not decreased appreciably. This interpretation is based on the graph titled "A Decay Profile of Trichloroethyene" in the EPA's Ground Water monitoring Series CERI-87-8, page 60.

MEDEP recommends that the Navy develop a mutually agreeable approach to comparing this data. (MTG)

4. Section 2.2.3, Vinyl Chloride/Total Dichloroethene Ratio, p. 2-3, 2nd paragraph:

   The last sentence reads "...may be a contributing factor in vinyl chloride spikes that have been observed a MW-NASB-069 beginning in 1997". The term "spike" indicates a long thin sharp pointed reading caused by abrupt changes in concentration therefore the word "spikes" do not appear to apply and should be replaced with "continual buildup". (ED)

5. Section 2.4, Visual Inspection, p. 2-5, last sentence:

   "Copies of the site inspection reports are provided in the reports for Monitoring Events 18 and 19."

   The Navy should consider developing a field form to be filled out during the inspections and included in the Appendices. The condition of the pond gauges should be part of this inspection and included in each monitoring events. (RR)

6. Figure 2-2, Interpreted Potentiometric Surface Elevations, 30 October 2001:

   The 41.0-foot contour runs very close to the north side of the lower pond, which had a gauged elevation of 36.16 feet. As pointed out in MEDEP's comments on Monitoring Event 19, this contour should be shown back away from the edge of the pond. There are no data to support such a large implied groundwater gradient. This report should not be finalized until concensus is reached on this matter. (ED & MTG)

7. Figure 2-5, Sum of vinyl chloride and 1,2-dichloroethene, total concentration, 1995-2001:

   It would be helpful in the comparison of the trend lines to make the vertical (Y-axes) scales identical. (ED)

8. Section 3.1.1, Water Level Gauging Program, p. 3-1, 1st para:

   "Based on seven rounds of gauging data collected from monitoring wells at the Navy Exchange Service Station (NEX), the interpreted flow pattern upgradient of Site 9 is to the southwest."

   MEDEP appreciates that the Navy is including the upgradient groundwater conditions at the NEX with respect to Site 9 conditions, due to the potential linkage between sites. However the above report statement does not serve this purpose as it should, because if groundwater flowed straight southwest from the NEX it would not encounter Site 9. However, in actuality,

the flow lines curve to the southeast over a distance of approximately 500 feet, and enter Site 9. Please rephrase. (ED)

9. Section 3.1.2, Volatile Organic Compound Concentrations, p. 3-2, 3rd bullet:

"Although the specific reason for the increase in vinyl chloride concentrations cannot be identified conclusively, non-detections for vinyl chloride are noted at monitoring wells near the impoundment ponds (MW-NASB-072, MW-NASB-074, and MW-NASB-075)..."

A strong likelihood exists that vinyl chloride contamination is passing under the well screen of MW-NASB-076 (or in its neighborhood), and has not migrated into the MW-NASB-075/MW-NASB-074/MW-NASB-072 area since the detention ponds altered groundwater flow regime so that discharge is directed away from the upper pond in favor of the lower pond. Thirteen feet of sandy material occurs below the bottom of the screen in MW-NASB-076. In that the vinyl chloride is found at considerable depth just above the clay in MW-NASB-069, a potential escape route to surface water is present here. MEDEP is looking forward to discussing this concern at our October technical meeting. (RR/MTG)

10. Section 3.1.2, Volatile Organic Compound Concentrations, p. 3-3, 2nd bullet:

Another possible explanation for explaining the predominant occurrence of 1,2-DCE in the "central portion of Site 9" (and little elsewhere) is that the parent compound (TCE, PCE) may be entering this area from the west along a narrow depression in the clay surface, which may connect with the MW-NASB-069 clay depression. MEDEP will discuss this concept in detail at the October technical meeting. (MTG)

11. Section 3.1.2, Volatile Organic Compound Concentrations, p. 3-3, 3rd bullet:

With the exception of wells MW-NASB-076 and MW-NASB-080, the use of "spikes" to characterize variation in graphed long-term concentrations is not warranted. Although a precise definition of a "spike" is difficult to establish, most well graphs do not show large abrupt changes in contaminant concentrations. MEDEP suggests substituting the term *"elevated levels"* for "spikes'. (ED)

12. Section 3.1.2, Volatile Organic Compound Concentrations, p. 3-3, last bullet:

"Monitoring wells in the long-term monitoring network appear to be well positioned to assess changes in vinyl chloride concentrations north of the impoundment ponds. Therefore, if elevated concentrations of vinyl chloride were to occur in areas downgradient of MW-NASB-069, the existing monitoring well network is likely to effectively track changes in groundwater concentration of VOCs."

The Department does not agree with these statements. (See comment 9 above.) (RR/MTG)

13. Section 3.1.3, Surface Water Sampling Program, p. 3-4, Bullet:

"The decrease in VOCs at the surface water sampling location is likely due to volatilization and dilution of VOCs in the unnamed stream."

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Another likely explanation is that a narrow plume of migrating VOCs that used to 'squarely' intersect the location of SW-010 now has shifted farther north along the unnamed stream. A gradual adjustment in discharge location could be the result of the filling of the detention ponds, and an apparent shift in the groundwater flow lines, as interpreted from recent year contour maps. As the Navy knows, the DEP is uncomfortable with having only one surface water monitoring station. MEDEP looks forward to discussing this the October technical meeting. (RR/MTG)

14. Section 3.2, Recommendations, p. 3-5, 4th Bullet:

The Navy is proposing that the number of parameters for laboratory analysis be reduced for Site 9, apparently by totally dropping semi volatile organic compound analytes. These analytes were determined after much discussion between the agencies and the BASCE representative and should be reevaluated based on that original reasoning and subsequent data. (MTG)

Thank you for the opportunity to review this report. If you have any questions or comments please call me at (207) 287-7713.

Respectfully,

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