

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



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January 6, 2000

Mr. Emil Klawitter
Code 1823 EK
Department of the Navy, Northern Division
Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop 82
Lester, PA 19113-2090

Re: Site 9, Monitoring Event 15, September 1999
Naval Air Station, Brunswick, Maine

Dear Mr. Klawitter:

The Maine Department of Environmental Protection (MEDEP or Department) has reviewed the report entitled Monitoring Event 15-September 1999; Site 9: Neptune Drive Disposal Site, dated November 1999, prepared by EA Engineering, Science and Technology. Based on that review the Department has the following comments and issues.

General Comments:

1. This event's VOC data illustrates the importance of comparing the current event concentrations with trends and historical data. The Department reviewed these new data in this fashion, and has attached a graph of concentrations versus time for MW-NASB-069. What the graph shows is that the rising trends for both vinyl chloride and total 1,2-dichloroethene have continued in dramatic fashion, with the September 1999 concentrations being more than double the previous highs (November 1998 event). The DCE concentration of the duplicate sample is nearly at the MCL and MEG of 70 µg/L. Most significantly, vinyl chloride is approximately 25 times greater than its MCL at this location and over 300 times its MEG.

The Department recognizes that MW-NASB-069 is not the typical monitoring well at Site 9 in that it draws groundwater from a deep elongated depression in the top of the underlying clay. The screens of other monitoring well at Site 9 are shallower, and most are located outside the clay trough. Because vinyl chloride and 1,2- DCE are

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undoubtedly daughter products of PCE and/or TCE, which are sinkers in aquifers due to their specific gravity being significantly greater than water, it is not surprising that MW-NASB-069 is much more contaminated than other Site 9 wells.

The increasing trends of vinyl chloride and DCE, in combination with very low dissolved oxygen and relatively high manganese, suggests that natural biodegradation of parent compounds is occurring and apparently has accelerated. A postulated reason for this accelerated breakdown is that the chemical side-effects (e.g., anaerobic state) of fuel contaminant remediation at the NEX (immediately upgradient) have migrated downgradient in the shallow system, and have promoted increased reductive dehalogenation of chlorinated compounds trapped in the uppermost clay layer as a residual from old solvent releases.

In light of the above trend, the Department has growing concerns that contaminant levels may eventually increase in the Site 9 pond sediments, and possibly in pond water. The point at which the Department will need more subsurface contaminant information in order to continue to support the Natural Attenuation with Monitoring remedy may be fast approaching. Therefore, the Navy should seriously consider making plans to install several new monitoring wells to better define and track this apparent top-of-clay VOC plume, and assume that last year's concentration trend will not soon reverse. MEDEP is ready to assist the Navy in such an endeavor. This should be a topic of discussion at the next technical meeting.

2. The Department again recommends qualifying the head measurements for NASB-074 as "affected by a deeper screen placement", and not using NASB-074 measurements for contouring on future maps. (See MEDEP Comment 3 for the 1998 Annual Report). The Navy needs to better justify not taking this action, if the requested change is not implemented.

Specific comments:

3. Introduction, Section 1.1, page 1, 4th para:

Temporal trends and other observations based on data collected during bi-annual monitoring (April, September, and October) will be presented in the Annual Report for 1999.

In the last sentence, the information in the parenthesis should read "*(April and September/October)*" so that it is clear that monitoring is bi annual.

4. Sampling Activities, Section 1.4.1, page 3, bullets:

- a.) The reduction in dissolved oxygen may be largely a function of the nearly doubling of water temperature at the time of sample collection at SW-010 and LT-

901 during Monitoring Event 15. Also, Eh readings were much lower (approaching zero), and suggest that these environments have become more anaerobic than in the past.

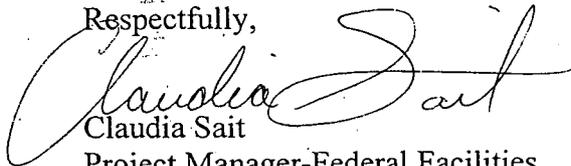
b.) It is even more interesting that Table 8 shows a pH of 2.08 for the leachate seep. If real, this water poses a human health hazard, as it would be quite corrosive. All prior pH readings have exceeded a value of 6. This reading needs to be checked as soon as possible – before the next monitoring event in April. If a similar value is obtained, the Department recommends that an investigation be undertaken to identify the source of low pH, and that analyses for dissolved metals be reinstated. Please keep the Department informed of the Navy's intent to resample and the sampling timeframe.

5. Summary of Analytical Results for Sediment Sample, Table 11:

The Department notes that total 1,2-dichloroethene was found at low levels (7 µg/L) in the sediment at SED-10, instead of vinyl chloride and trichloroethene that was detected during Monitoring Event 14. It appears that contaminant type is fluctuating between parent compound and various daughter breakdown compounds. No response needed.

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

Respectfully,



Claudia Sait

Project Manager-Federal Facilities
Bureau of Remediation & Waste Management

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MW-NASB-069

