



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
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1 CONGRESS STREET, SUITE 1100  
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March 26, 2001

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

Re: Round 10 - Groundwater Monitoring Report for the Defense Reutilization and Marketing Office at the Naval Submarine Base - New London in Groton, CT

Dear Mr. Evans:

EPA reviewed the *Round 10 Groundwater Monitoring Report for Defense Reutilization and Marketing Office*, dated March 2001, with particular attention to conformance with the Groundwater Monitoring Plan [1], the execution of the sampling round, the completeness of the documentation, and any indications of unexpected trends in contaminant concentrations. The report provides a brief overview of the site, a description of field activities involved in the tenth round of monitoring, and results of sampling and analysis from sampling performed in December 2000. Detailed comments are provided in Attachment A.

The field activities and laboratory analyses reported in the document follow the Groundwater Monitoring Plan [1]. The monitoring program continues in routine fashion.

The Groundwater Monitoring Report (GMR) provides a complete record of data collected in Round 10; water levels (Appendix C), field parameters (Appendix E), and the laboratory data sheets (Appendix G) are included. The dissolved oxygen data needs to be reviewed for indications of instrument errors, recording errors, etc. Additional discussion is provided in the specific comment.

No interpretation of the data is offered, as is the intent of the GMR; interpretation is deferred to the annual report. The Round 10 data report does highlight exceedances, if detected, of primary and secondary monitoring criteria as adopted in the Groundwater Monitoring Plan. No exceedances of primary monitoring criteria were found; scattered exceedances of secondary criteria were encountered, principally among inorganic elements.

Detections of contaminants in exceedance of monitoring criteria appear to be sporadic. No exceedances of the primary criteria were found. A few, relatively low-level exceedances of

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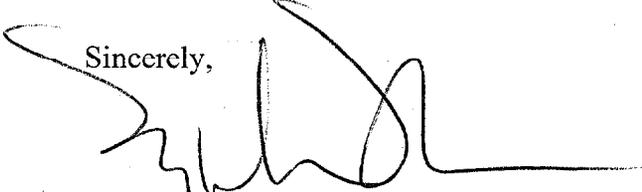
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secondary criteria were detected. There were no unexpected detections in this round of sampling. A brief summary and discussion of exceedances follows:

- ▶ Bis(2-ethylhexyl)phthalate exceeded the secondary criterion (5.9  $\mu\text{g/L}$ ) in one well: 6MW1S (25  $\mu\text{g/L}$ ).
- ▶ Arsenic exceeded the secondary criterion (0.14  $\mu\text{g/L}$ ) in two wells: 6MW10D (7.1  $\mu\text{g/L}$ ), and 6MW11D (8.2  $\mu\text{g/L}$ ).
- ▶ Copper exceeded the secondary criterion (2.4  $\mu\text{g/L}$ ) in two wells: 6MW9S (19  $\mu\text{g/L}$ ) and 6MW11S (12.7  $\mu\text{g/L}$ ).
- ▶ Zinc exceeded the secondary monitoring criterion (81  $\mu\text{g/L}$ ) in three wells: 6MW9S (151 J  $\mu\text{g/L}$ ), 6MW11S (299 J  $\mu\text{g/L}$ ), and 6MW11D (86.8 J  $\mu\text{g/L}$ ).

I look forward to working with you and the Connecticut Department of Environmental Protection to complete the remediation at the Defense Reutilization and Marketing Office. Please do not hesitate to contact me at (617) 918-1385 should you have any questions.

Sincerely,



Kimberlee Keckler, Remedial Project Manager  
Federal Facilities Superfund Section

Attachment

cc: Mark Lewis, CTDEP, Hartford, CT  
Dick Conant, NSBNL, Groton, CT  
Jennifer Stump, Gannett Fleming, Harrisburg, PA

## ATTACHMENT A

Page            Comment

Appendix E    Review of the sampling schedule (*see* table below) indicates that two individuals were generally working simultaneously, and by implication, with two flow-through cells. The exception is on 12/18, when one individual (RDM) apparently sampled 6MW2S and 6MW9S simultaneously (6MW2S was pumped from 0830 to 1005 hours; 6MW9S was pumped from 0917 to 1002 hours), evidently again using two flow-through cells. For every one of the pairs of wells that were purged and sampled at the same time, there is one set of field parameters that appears to be suspect. In particular, 6MW6D (sampled on 12/15), 6MW10S (sampled on 12/16), 6MW11D (sampled on 12/17), and 6MW1S (sampled on 12/19) all exhibit extremely high DO (>18 mg/L), at levels virtually impossible to reach in groundwater. It is also noted that the DO reading tended to drift upward over the purge period in most of these cases; the readings did not stabilize. Furthermore, the ORP measured at the same time as these extremely high DO values was low in every case (-345 to 7.1 mV), a somewhat contradictory result. On the day that one individual sampled two wells simultaneously (12/18), well 6MW9S exhibits the unlikely combination of high DO (9.16 mg/L) and low ORP (17.8 mV). While this combination is not impossible (*e.g.*, redox couples may not be in equilibrium), it is unusual. There is a strong suggestion in these data that one of the two flow-through cells used suffered from electrode fouling, poor calibration, electronics instability, or some other problem. The flow-through cell should be inspected and calibrated carefully in future sampling rounds, and the data should be reviewed for indications of instrument errors, recording errors, *etc.* Field personnel should be instructed to record results that appear to be spurious. These data are important to develop an understanding of the transport of inorganics at the site.

If two or more instruments are being used in the same program, a clear instrument ID should be noted on the field sheets so that later issues with respect to reliability can be determined.

well ID	date	time	sampled by	DO (mg/L)	ORP (mV)
6MW6S	12/15/00	0838	FCW	7.44	64.7
6MW6D	12/15/00	0930	RDM	18.78	-24.5
6MW10D	12/16/00	0720	FCW	6.58	-243
6MW10S	12/16/00	0722	RDM	22.7	-345.0

6MW11S	12/17/00	0825	FCW	0.16	-269
6MW11D	12/17/00	0825	RDM	29.53	-101.0
6MW2S	12/18/00	0930	RDM	0.52	14
6MW9S	12/18/00	1005	RDM	9.16	17.8
6MW2D	12/19/00	1035	FCW	0.01	-358
6MW1S	12/19/00	1035	RDM	18.85	7.1

## REFERENCE

- [1] Brown and Root Environmental, "Groundwater Monitoring Plan for Defense Reutilization and Marketing Office, Naval Submarine Base, New London, Groton, Connecticut," February 1998.