



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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ANGUS S. KING, JR.
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MARTHA KIRKPATRICK
COMMISSIONER

May 23, 2000

Mr. Arthur Coccoli
Code 1821 AC
Department of the Navy, Northern Division
Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop 82
Lester, PA 19113-2090

Re: 1999 Annual Report, Monitoring Events 14 & 15
Site 9 Neptune Drive Disposal Site
Naval Air Station, Brunswick, Maine

Dear Mr. Coccoli:

Thank you for the Navy's response to comments on the 1999 Annual Report, Monitoring Event 14 and 15, Site 9. The Maine Department of Environmental Protection (MEDEP or Department) has reviewed the response to comments, prepared by EA Engineering, Science and Technology. Based on that review the Department has the following revision (clarification) to its comment #5.

5. **Summary and Conclusions, Sections 3.1.1 and 3.1.2, Pages 2 and 3, Water Level Gauging Program, Section 3.1.1, Page 2, Top of Page**—These dissolved oxygen concentrations measured during 1999 suggest that the ground-water geochemistry at Site 9 is not being affected by the operation of the remedial system at the Naval Exchange Service Station.

Ground-Water Monitoring and Sampling Program, Section 3.1.2, Pages 2 and 3, 2nd and 3rd Bullets—Samples of Site 9 ground water have not reported significant concentrations of VOCs that would be commonly found in gasoline, which suggests impacts at Site 9 may be limited to potential impacts on site dissolved oxygen or Eh conditions.

The Department disagrees with the first statement, and partially disagrees with the second statement. The presence of impacts to dissolved oxygen concentrations would be expected to noticeably alter ground-water geochemistry. Although BTEX compounds are virtually absent at wells MW-NASB-8, MW-NASB-9, and MW-NASB-10, diesel range organics are present in MW-NASB-9 and MW-NASB-10.

Only 110 ft upgradient of MW-NASB-9, well MW-NASB-226 had a gasoline range

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688
RAY BLDG., HOSPITAL ST.

BANGOR
106 HOGAN ROAD
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769-2094
(207) 764-0477 FAX: (207) 764-1507

organics concentration of 2,300 µg/L in December 1999. Total BTEX concentration at MW-NASB-226 was 1,600 µg/L.

It is our interpretation that oxygenated ground water at the Navy Exchange Service Station is migrating into Site 9 where higher than normal oxygen levels have caused more biodegradation of DCE to vinyl chloride than had been occurring (which would explain the 1998-1999 increasing trend). With the exception of MW-NASB-080 (which changed from low to moderate levels of dissolved oxygen in 1999), all other wells in the middle of Site 9 have shown either zero or very low oxygen concentrations. All wells with near normal oxygen concentrations farther downgradient are located within 100 ft of the impoundment drainage. It seems likely that the combined effect of shallowness of the ground water near the ponds and a probable state of exhausted dechlorination (having run its course just upgradient) would promote a recovery of oxygen in ground water downgradient of Building 201.

Navy Response—We disagree with the interpretation noted in this comment that the addition of oxygen upgradient of Site 9 at NEX is likely to increase biodegradation. It is more likely that chlorinated solvent compounds will under go dechlorination in anaerobic conditions. It should be noted that many site conditions could be responsible for the volatile organic compounds trends observed in Site 9 ground water, and a dissolved oxygen concentration. The observations noted in this comment are one possible explanation, although other factors may explain these observed trends.

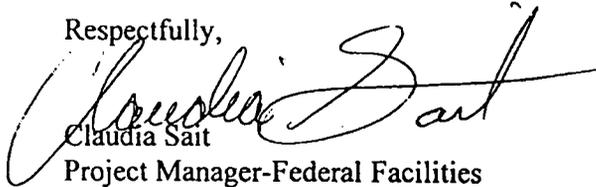
MEDEP Clarification---- MEDEP agrees that dechlorination is more likely under anaerobic conditions. Because we were talking about degradation of BTEX and DCE in the same paragraph, the intended relationship was not correctly expressed. Please substitute our revision given below for the 3rd paragraph in DEP's original comment. Only the first two sentences have been changed.

"It is our interpretation that oxygen-depleted ground water at the leading edge of the Navy Exchange Service Station fuel plume is migrating into Site 9 where the anaerobic water is causing an increased rate of dechlorination of DCE to vinyl chloride. Thus, the long-term oxygen depletion thought to be caused by BTEX degradation at the NEX could explain the 1998-1999 increasing vinyl chloride concentration trend downgradient. With the exception of MW-NASB-080 (which changed from low to moderate levels of dissolved oxygen in 1999), all other wells in the middle of Site 9 have shown either zero or very low oxygen concentrations. All wells with near normal oxygen concentrations farther downgradient are located within 100 ft of the impoundment drainage. It seems likely that the combined effect of shallowness of the ground water near the ponds and a probable state of exhausted dechlorination (having run its course just upgradient) would promote a recovery of oxygen in ground water downgradient of Building 201."

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MEDEP apologizes for the confusion. 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

Cf: File
Larry Dearborn-DEP
Anthony Williams-BNAS
Michael Barry-EPA
Carolyn LePage-LePage Environmental
Ed Benedikt
Al Easterday-EA