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TRANSMITTAL LETTER FOR THE RESPONSE TO STATE OF NEW JERSEY DEPARTMENT  
OF ENVIRONMENTAL PROTECTION COMMENTS ON PHASE 1 UNDERGROUND  
STORAGE TANK REMEDIAL INVESTIGATION REPORT FOR VARIOUS SITES NWS EARLE  
NJ  
3/5/1997  
BROWN AND ROOT ENVIRONMENTAL



# Brown & Root Environmental

993 Old Eagle School Road, Suite 415  
Wayne, PA 19087-1710

(610) 971-0900  
FAX: (610) 971-9715

BRPH/51-3-7-10

March 5, 1997

Mr. Brian Helland, Code 1812  
Senior Environmental Engineer  
Northern Division  
Naval Facilities Engineering Command  
10 Industrial Highway Mail Stop 82  
Lester, Pennsylvania

Reference: CLEAN Contract No N62472-90-D-1298  
Contract Task Order No. 206

Subject: Response To Comments  
Phase I UST RI Report for Various UST Sites  
NWS Earle, Colts Neck, New Jersey

Dear Mr. Helland:

Brown & Root (B&R) Environmental is providing the following response to the New Jersey State Department of Environmental Protection's (NJDEP's) January 17, 1997 comments on the subject report. Despite the general importance of the NJDEP's comments, we suggest incorporation of this letter into the case file, in-lieu of submission of a revised report.

### General Comments:

1. *A narrative should be included to discuss the effectiveness of the EMFLUX sampling as a screening tool for the direct-push soil samples. For example, soil sample SS-1810 for AOC R-6/7 showed a TPH concentration of 2700 ppm when the corresponding EMFLUX samples showed non-detect. Please explain.*

### **Response:**

There is no direct correlation between EMFLUX® soil gas results and soil or groundwater sample results. An indirect correlation may be theoretically demonstrated by mathematically converting the soil gas concentrations to corresponding soil or groundwater concentrations. B&R Environmental used EMFLUX® data along with other known site data to select locations for direct-push soil and groundwater samples. B&R Environmental considered EMFLUX® as a field screening tool only and the position of soil and groundwater sample locations were not determined based solely on the EMFLUX® results.

We attributed the apparent conflicting results to variations in analytical methods for soil gas samples and direct-push soil and groundwater samples, variations in surface conditions, the presence of non-target hydrocarbons, and high levels of target compounds. These factors were unique to each AOC and each sample location. Since EMFLUX® was a screening tool, describing these factors and then evaluating each individually, seemed beyond the scope of the RI Report. As a case in point and referring to NJDEP's example of SS-1810 at AOC R-6/7, we offer the following explanation:

Soil sample SS-1810 indicated TPH at 2,700 mg/kg, yet the nearest corresponding EMFLUX soil gas sample location indicated non-detect. The soil sample TPH results were determined using analytical test Method 418.1, which inherently identifies a wide range of light and heavy-end hydrocarbons, including non-petroleum (non-target contaminant) hydrocarbons. TPH results by Method 418.1 alone may not differentiate between target and non-target hydrocarbons. The EMFLUX® soil gas analysis on the other-



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hand targeted petroleum-related hydrocarbons. Volatile organic compound (VOC) analysis also performed on soil sample SS-1810 indicated no target VOCs, which indirectly correlates with the EMFLUX® results.

Ultimately, we conclude that EMFLUX® technology is an acceptable screening method. However, it appears more suited for delineating low-level target compound contamination where surface conditions are similar throughout the aerial extent of the study area.

2. *Section 2.5.8 - It would be inappropriate at this time to recommend natural attenuation as the chosen remedy since the groundwater contamination has yet to be delineated.*

**Response:**

B&R Environmental will install and sample four additional permanent monitoring wells as part of the proposed groundwater investigation to evaluate natural attenuation. The monitoring wells will be placed at strategic locations based on the previously reported groundwater flow direction and the data generated during the RI. These efforts are expected to further define the up-gradient and down-gradient extent of contamination. If the potential for natural attenuation is demonstrated, the necessity to confirm the side-gradient boundaries of the contamination will be evaluated and additional investigation may be performed if necessary.

B&R Environmental trusts that this information adequately addresses the NJDEP's comments. Please do not hesitate to contact me at 610-971-0900 if you have any additional questions.

Sincerely,

Richard J. Gorrell  
Project Manager

RJG/dhn

- c: Lawrence Burg, (NWS Earle)  
John Trepanowski, P.E. (B&R Environmental)  
Michael Turco, P.E., DEE (B&R Environmental)  
Russell Turner, (B&R Environmental)