

**Classification Exception Area  
Documentation  
for  
Building S-106B**

**Naval Weapons Station Earle  
Colts Neck, New Jersey**



**Northern Division  
Naval Facilities Engineering Command**

**Contract No. N62472-90-D-1298  
Contract Task Order 0206**

**May 1998**



**Brown & Root Environmental**

**A Division of Halliburton NUS Corporation**

**CLASSIFICATION EXCEPTION AREA DOCUMENTATION**  
for  
**BUILDING S-106B**  
**NAVAL WEAPONS STATION EARLE,**  
**COLTS NECK, NEW JERSEY**

**COMPREHENSIVE LONG-TERM**  
**ENVIRONMENTAL ACTION - NAVY (CLEAN) CONTRACT**

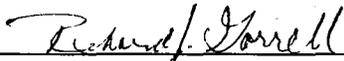
Submitted to:  
Northern Division  
Environmental Branch, Code 18  
Naval Facilities Engineering Command  
10 Industrial Highway, Mail Stop No. 82  
Lester, Pennsylvania 19113

Prepared and Submitted by:  
Brown & Root Environmental  
600 Clark Avenue, Suite 3  
King of Prussia, Pennsylvania 19406-1433

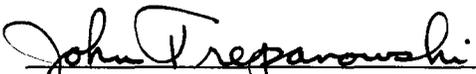
Contract No. N62472-90-D1298  
Contract Task Order 0206

May 1998

PREPARED BY:

  
RICHARD J. GORRELL  
PROJECT MANAGER  
BROWN & ROOT ENVIRONMENTAL  
KING OF PRUSSIA, PENNSYLVANIA

APPROVED BY:

  
JOHN J. TREPANOWSKI, P.E.  
PROGRAM MANAGER  
BROWN & ROOT ENVIRONMENTAL  
KING OF PRUSSIA, PENNSYLVANIA

## TABLE OF CONTENTS

### SECTION

<b>1.0</b>	<b>INTRODUCTION.....</b>	<b>1-1</b>
1.1	INTRODUCTION.....	1-1
1.2	BACKGROUND.....	1-1
<b>2.0</b>	<b>CLASSIFICATION EXCEPTION AREA INFORMATION.....</b>	<b>2-1</b>
2.1	ADMINISTRATIVE INFORMATION.....	2-1
2.2	SITE LOCATION AND CEA DESCRIPTION.....	2-1
<b>3.0</b>	<b>CONTAMINANT FATE AND TRANSPORT ANALYSIS.....</b>	<b>3-1</b>
<b>4.0</b>	<b>PROPOSED GROUNDWATER MONITORING PROGRAM.....</b>	<b>4-1</b>
4.1	OBJECTIVES.....	4-1
4.2	PROPOSED MONITORING PROGRAM.....	4-1

### APPENDICES

<b>A</b>	<b>Correspondence, NJDEP to NORTHDIV, December 2, 1997, Comments on the Focused Investigation and Remedial Action Work Plan for Building S-106 B.....</b>	<b>A-1</b>
<b>B</b>	<b>Electronic Deliverables.....</b>	<b>B-1</b>

### FIGURES

<u>NUMBER</u>		<u>PAGE</u>
2-1	Site Location Map.....	2-2
2-2	Proposed CEA Boundary.....	2-3

## **1.0 INTRODUCTION**

### **1.1 INTRODUCTION**

Brown and Root (B&R) Environmental prepared this classification exception area (CEA) documentation package for Northern Division (NORTHDIV) Naval Facilities Engineering Command (NAVFAC) under the Comprehensive Long-Term Environmental Action - Navy (CLEAN) Contract Number N62472-90-D-1298, Contract Task Order (CTO) No. 0206. The purpose is to present the information required to establish a CEA based on a natural attenuation remediation alternative for dissolved-phase groundwater contamination from a No. 2 fuel oil discharge that occurred from a former 1,000-gallon underground storage tank (UST) located at the southeastern corner of former Building S-106B at the Naval Weapons Station (NWS) Earle. This CEA documentation was prepared in response to the New Jersey Department of Environmental Protection's (NJDEP) December 2, 1997 comments on the Focused Investigation and Remedial Action Work Plan prepared by B&R Environmental and submitted to the Navy in September, 1997. Refer to Appendix A for a copy of NJDEP's comment letter.

### **1.2 BACKGROUND**

Brown & Root Environmental performed a Phase I Remedial Investigation (RI) at the site in 1996. The direct push groundwater investigation performed during the RI revealed benzene levels above the NJDEP Groundwater Quality Standards (GQS) in two groundwater samples acquired east and northeast of the former 1,000 gallon No. 2 fuel oil UST. The sample locations were within 40 feet the UST grave. As a result of these findings, a focused investigation was conducted to confirm the groundwater flow direction, determine the extent of the apparent benzene contamination, and assess site conditions to justify natural attenuation as an appropriate remedial action. The focused investigation for the site included the installation and sampling of groundwater from six permanent monitoring wells. Laboratory analysis of these samples identified no fuel oil-related compounds in the groundwater at levels above the GQSs. The results of the focused investigation were reported in the Focused Investigation and Remedial Action Work Plan described in the preceding section of this CEA document.

## 2.0 CLASSIFICATION EXCEPTION AREA INFORMATION

### 2.1 ADMINISTRATIVE INFORMATION

Site Name/Location: Building S-106B, Naval Weapons Station Earle; Colts Neck, New Jersey.

Site Identification Number: Spill Case Number 90-05-09-1324

NJDEP Case Manager: Bob Marcolina

Site Contact Person: Lawrence Burg

Lead Program: NJDEP-Bureau of Federal Case Management

### 2.2 SITE LOCATION AND CEA DESCRIPTION

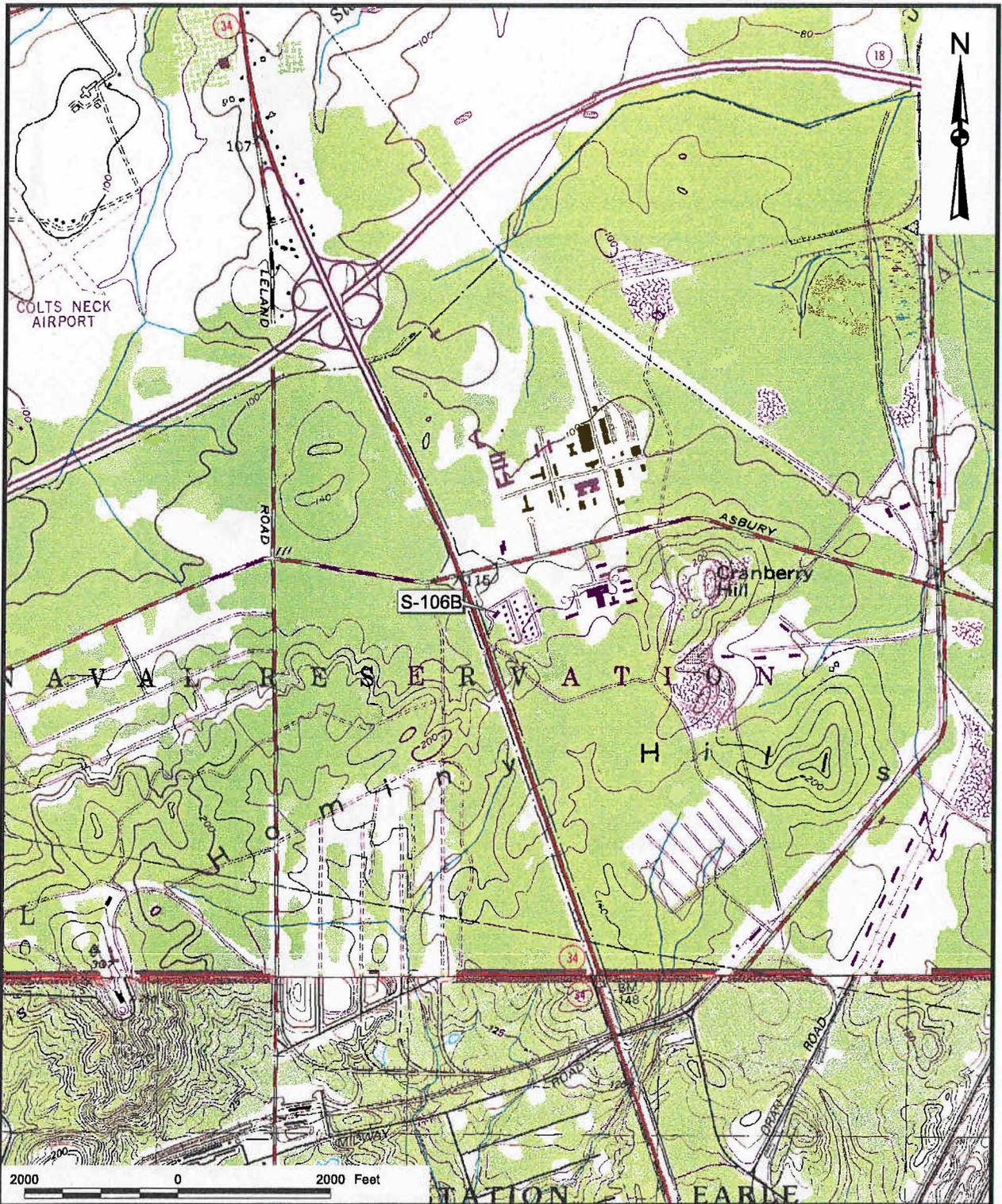
The area of concern is located at the mainside area of the NWS Earle facility (Figure 2-1). According to the Colts Neck Township Tax Office, the entire mainside area is designated as Block 56, Lot 1. Historically the area of concern has been used for residential housing. The affected area may be described as a parcel formerly containing a 1000 gallon fuel oil UST associated with former building S-106B. The proposed CEA boundaries and surface features are presented on Figure 2-2. The approximate center of the proposed CEA is located at the intersection of latitude 40° 15' 48.2" and longitude 74° 09' 38.2".

Aquifer/formation impacted: Kirkwood-Cohansey/Kirkwood

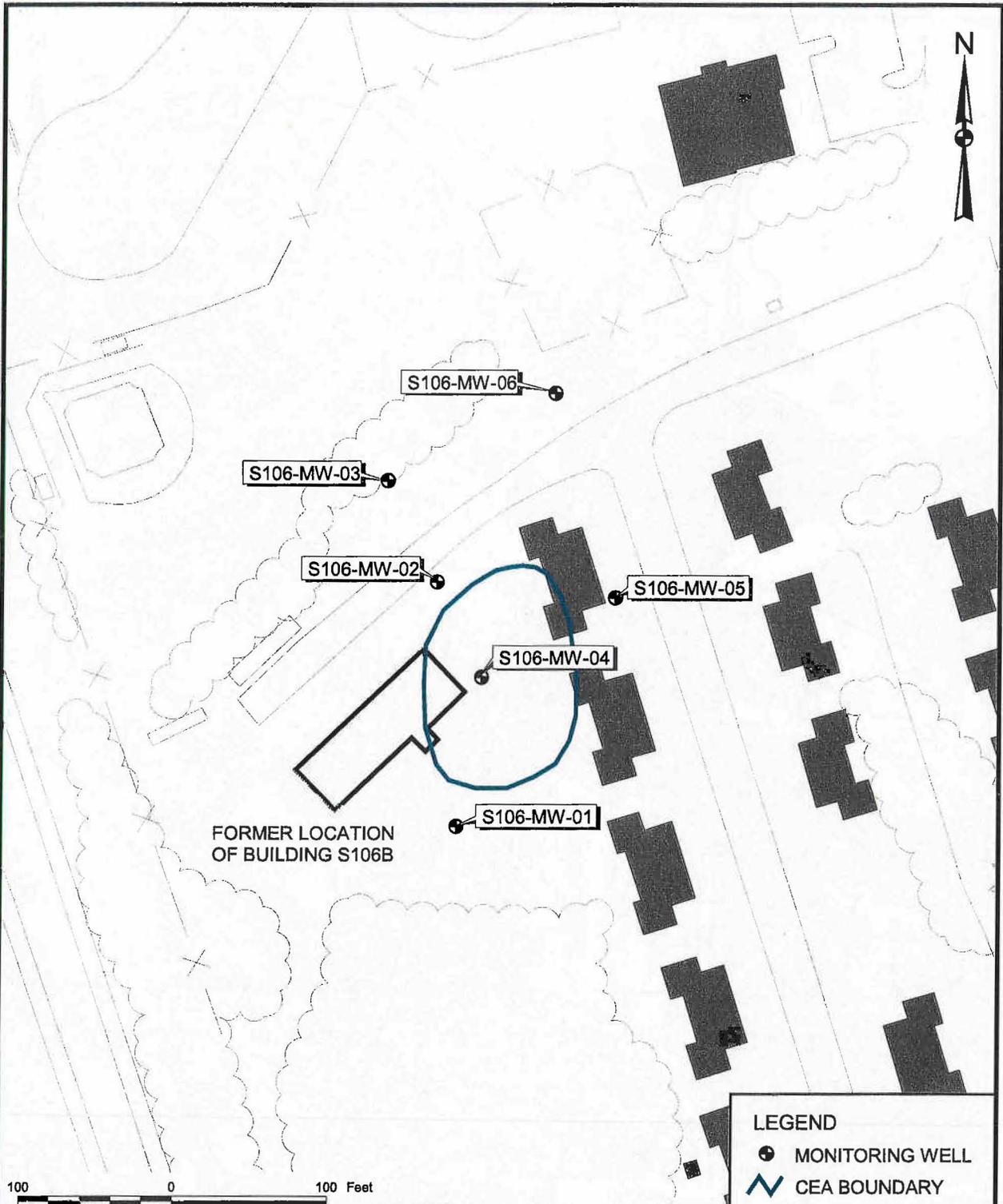
Aquifer Classification: Groundwater for the Mainside area of the NWS Earle facility is classified as Class II-A.

Contaminants exceeding applicable NJDEP GQS: Benzene was identified at two locations during the Phase I RI at levels above the GQSs. Chloroform and bromodichloromethane were identified during the focused groundwater investigation in one monitoring well, at levels above NJDEP GQS, however these compounds are believed to be associated with the long-term historical discharge of chlorinated drinking water from leaking water supply systems and not associated with the UST under investigation.

Projected longevity of the CEA: 1 year.



DRAWN BY S. TABLER CHECKED BY <i>MBS</i> COST/SCHEDULE-AREA SCALE AS NOTED	DATE 4/28/88 DATE 4/20/88	<b>Brown &amp; Root Environmental</b>  SITE LOCATION MAP - AOC S-106B CTO 206 - CEA DOCUMENTATION NWS EARLE COLTS NECK, NEW JERSEY	CONTRACT NUMBER N62472-90-D-1298 APPROVED BY _____ APPROVED BY _____ DRAWING NO. FIGURE 2-1	OWNER NO. _____ DATE _____ DATE _____ REV 0
--	------------------------------------	---	--	--



**LEGEND**

- MONITORING WELL
- ▭ CEA BOUNDARY

<b>DRAWN BY</b> S. TABLER	<b>DATE</b> 4/28/98	<b>Brown &amp; Root Environmental</b>	<b>CONTRACT NUMBER</b> N62472-90-D-1298	<b>OWNER NO.</b> —
<b>CHECKED BY</b> <i>[Signature]</i>	<b>DATE</b> 4/30/98		<b>APPROVED BY</b> —	<b>DATE</b> —
<b>COST/SCHEDULE-AREA</b>		<b>PROPOSED CEA BOUNDARY</b> <b>AOC S-106B</b> <b>NWS EARLE</b> <b>COLTS NECK, NEW JERSEY</b>	<b>APPROVED BY</b> —	<b>DATE</b> —
<b>SCALE</b> AS NOTED			<b>DRAWING NO.</b> FIGURE 2-2	<b>REV</b> 0

### 3.0 CONTAMINANT FATE AND TRANSPORT ANALYSIS

Details related to the contaminant fate and transport analysis are presented in the Focused Investigation and Remedial Action Work Plan (RAWP) for Building S-106B prepared by B&R Environmental and submitted to the Navy September 1997.

The fate and transport model used for the prediction of plume migration of dissolved BTEX compounds for the site was the Bioscreen Natural Attenuation Decision Support System, published by the Technology Transfer Division of the Air Force Center For Environmental Excellence, June 1996. The Bioscreen software is based on the Domenico (1987) three-dimensional analytical solute transport model and has been adapted to provide three model types representing transport with no decay, transport with first-order decay, and transport with "instantaneous" biodegradation reaction.

Review of the groundwater analytical results and modeling results presented in the RAWP indicates that currently, hydrocarbon constituent concentrations are decreasing within the impacted area. Additionally, modeling results indicate that concentrations of petroleum hydrocarbon related contaminants should continue to decrease over time. Based on the most recent round of sampling, no petroleum hydrocarbon compounds occur in groundwater at levels exceeding the NJDEP GQS's. Concentrations of all other petroleum hydrocarbon compounds are currently below NJDEP GQS's.

## **4.0 GROUNDWATER MONITORING PROGRAM**

### **4.1 OBJECTIVES**

The following groundwater monitoring program is proposed to document the migration, degradation, and attenuation of target constituents at the site. The proposed program consists of a short-term monitoring effort to identify current contamination and future decreasing contaminant trends and to provide assurance that non-compliances will be identified and reported in a timely manner.

### **4.2 PROPOSED MONITORING PROGRAM**

The proposed monitoring program consists of the following:

- Confirmatory short-term monitoring: Institute sampling of groundwater from the following existing monitoring wells on a quarterly basis: S106-MW-01, S106-MW-02, S106-MW-03, S106-MW-04, S106-MW-05, and S106-MW-06. This effort will be conducted for a minimum of four quarters to establish historical flow and contaminant concentration data to document contaminant concentrations below NJDEP GQS and decreasing contaminant trends.
- Laboratory analysis: Laboratory analysis will be conducted for BTEX compounds via EPA Method 8021A by a New-Jersey-certified Laboratory.
- Field Analysis: Dissolved oxygen, pH, and temperature will be measured using field instruments and recorded for all groundwater samples.
- Reporting: Short term groundwater monitoring reports will be submitted to NJDEP on an annual basis. The report will include a tabulation of all sample results received during the reporting period pursuant to N.J.A.C. 7:26E-3.13(c)3 and will provide a brief narrative summarizing the data and presenting conclusions. In the event a non-compliance with the RAWP is identified (i.e., hydrocarbons detected above NJDEP GQS or in a downgradient compliance well), NJDEP will be notified as soon as possible after detection.

**APPENDIX A**

**CORRESPONDENCE, NJDEP TO NORTHDIV, DECEMBER 2, 1997, COMMENTS  
ON THE FOCUSED INVESTIGATION AND REMEDIAL ACTION WORK PLAN  
FOR BUILDING S-106 B**



## State of New Jersey

Christine Todd Whitman  
Governor

Department of Environmental Protection

Robert C. Shinn, Jr.  
Commissioner

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED  
NO: P 479 208 769

DEC - 2 1997

Brian Helland  
Northern Division  
Naval Facilities Engineering Command  
10 Industrial Highway, Mail Stop 82  
Lester, PA 19113

Copy to:  
NWS Earle, L. Burg  
B+R, P. Gorrell

Dear Mr. Helland:

Re: Focused Investigation and  
Remedial Action Work Plan for  
Building S-106B  
Naval Weapons Station Earle  
Colts Neck Twp., Monmouth Co.

The New Jersey Department of Environmental Protection (Department) has reviewed the above referenced report, prepared by Brown & Root Environmental on behalf of the Naval Weapons Station Earle, dated September 1997. The report is approved in its present form. The Department concurs with Brown & Root's recommendation of natural attenuation with monitoring. However a Classification Exception Area (CEA) must be established in conjunction with the natural attenuation remedy. The following information is required for the Department to establish the CEA:

- 1) Lot and block numbers of impacted properties

**NOTE:** Site boundaries can define the CEA perimeter if no offsite contamination is expected to occur for the duration of the CEA.

- 2) The CEA boundaries depicted on a USGS 7.5 minute quadrangle map;
- 3) Proposed locations for sentinel wells with a monitoring schedule.

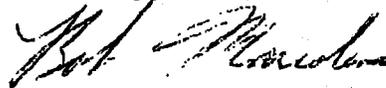
This information is required as a separate submittal in order for the Department to enter this information on their Geographic Information System (GIS).

- 4) There appears to be a problem of laboratory contamination associated with the analytical data, such as the presence of acetone and

methylene chloride. This problem has been discussed with Brown and Root on pervious submittals. If this problem persists, the Department will insist on the submittal of Brown & Roots sampling procedures and the laboratory SOPs for SVOC and VOC analysis.

If you have any questions, please call me at (609)-633-7327.

Sincerely,



Bob Marcolina, Case Manager  
Bureau of Federal Case Management

c: Rick Gorrell, Brown & Root Environmental

OPTIONAL FORM 99 (7-90)

**FAX TRANSMITTAL**

# of pages > 2

To <b>Rick Gorrell</b>	From <b>Brian Holland</b>
Dept./Agency <b>B+R</b>	Phone # <b>610-595-0567 x124</b>
Fax # <b>491-9647</b>	Fax # <b>0555</b>

**APPENDIX B**  
**ELECTRONIC DELIVERABLES**