

N60200.AR.003080
NAS CECIL FIELD, FL
5090.3a

FIRST SEMI-ANNUAL FIRST YEAR GROUNDWATER MONITORING LETTER REPORT FOR
BP WELLS SITE NAS CECIL FIELD FL
9/20/2001
TETRA TECH NUS INC

Document Tracking No. 01JAX0115

September 20, 2001

Project Number 3996

Mr. David Grabka
Remedial Project Manager
Technical Review/Federal Facilities
Naval Facilities Engineering Command
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Reference: Clean Contract No. N62467-94-D-0888
Contract Task Order No. 0168

Subject: Groundwater Monitoring Report, 1st Semi-Annual, 1st Year (April 2001)
BP Wells Site
Naval Air Station Cecil Field
Jacksonville, Florida

Dear Mr. Grabka:

Tetra Tech NUS, Inc. (TtNUS) is pleased to submit this semi-annual Groundwater Monitoring Letter Report for the referenced Contract Task Order (CTO) for the BP Wells Site. This groundwater monitoring report was prepared for the U.S. Navy Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) under the Comprehensive Long-term Environmental Action Navy (CLEAN) Contract Number N62467-94-D-0888. The objective of this task is to monitor groundwater associated with this site semi-annually. The guidance document for this report is Chapter 62-770.690, Florida Administrative Code (FAC). The sampling program was accomplished in general accordance with the Monitoring Only Plan (MOP) Approval Order signed by the Florida Department of Environmental Protection (FDEP) on August 31, 2000 (Attachment A). The information in this report was presented and discussed at the July 2001 BCT meeting.

This report summarizes the field operations and analytical results for the subject site for the sampling event conducted April 2001. Figure 1 shows the location of the site. The work was performed in general accordance with the Base-wide Generic Work Plan Volumes I and II (TtNUS, 1998).

FIELD OPERATIONS

Figure 1 shows the location of the BP Wells Site. Groundwater measurements were collected on April 11, 2001, from six monitoring wells on site. The depth to water in the monitoring wells ranged from 6.69 to 7.89 feet (ft) below top of casing (btoc). Based on these measurements, the

direction of groundwater flow is to the southeast. Table 1 provides the water table elevation data. Figure 2 depicts the groundwater contours.

Groundwater samples were collected from the two monitoring wells listed in the MOP (CEF-BP-1S and CEF-BP-6S) on April 11, 2001. Sampling was conducted in general accordance with the Base-wide Generic Work Plan Volumes I and II (TtNUS, 1998). Following collection, the groundwater samples were placed on ice and shipped under chain of custody to Accutest Laboratories in Orlando, Florida for analysis. The samples were analyzed for the contaminants of concern (COCs) 1,2,4-trimethylbenzene (TMB), 1,3,5-TMB, and total xylenes using United States Environmental Protection Agency (USEPA) Method SW846 8260B per the Natural Attenuation Monitoring Plan Approval Order in Attachment A.

RESULTS

The analytical report (Attachment B) indicates that the action levels for 1,2,4-TMB and xylenes, as defined by the FDEP MOP order, were exceeded in the groundwater sample from monitoring well CEF-BP-1S. The analytical results for this event are summarized in Table 2. Figure 3 shows the analytical results. Thus, in accordance with the Approval Order, the well was resampled on May 22, 2001.

The results of the resampling were slightly higher than the first event – the concentrations of 1,2,4-TMB and xylenes were still greater than the action levels. These results are also included on Table 2 and Figure 3. The concentrations in CEF-BP-1S are significantly greater than those observed in the last sampling event (March 2000), but the April/May 2001 results are less than those originally observed in October 1999.

The laboratory reported that no COCs were detected in the groundwater sample from CEF-BP-6S.

Table 3 summarizes the historical sampling data.

CONCLUSIONS and RECOMMENDATIONS

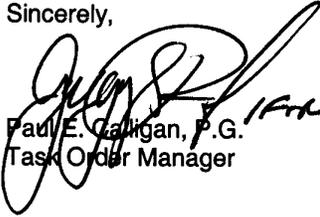
The TMB and xylene concentrations from monitoring well CEF-BP-1S have increased since the March 2000 sampling event. However, based on observed variations in 1999 to 2000, this result may be due to seasonal variation. No COC increases were observed in the downgradient well CEF-BP-6S.

At this time, there is limited historical data to evaluate long-term trends. TtNUS recommends continuing semi-annual monitoring of groundwater in accordance with the FDEP MOP order and FAC 62-770.

Mr. David Grabka
FDEP
September 20, 2001 – Page 3

If you have any questions with regard to this submittal, please contact me at (850) 385-9866 extension 24.

Sincerely,


Paul E. Calligan, P.G.
Task Order Manager


Mervin W. Dale, P.G.
Florida Professional Geologist
P.G. No. 0001917



PEC/lm

Attachments (7)

cc: N. Ugolini, SOUTHDIV
D. Vaughn-Wright, USEPA
D. Wroblewski, TtNUS (cover letter only)
M. Perry, TtNUS (unbound)

Mr. David Grabka
FDEP
September 20, 2001 – Page 4

bcc: M. Dale, TtNUS
J. Logan, TtNUS
R. Simcik, TtNUS (Bookcase File)
J. Johnson, TtNUS (Information Repository)

TABLES

TABLE 1**WATER TABLE ELEVATION DATA
BP WELLS SITE MONITORING REPORT
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA**

| Monitoring Well Identification | Well Depth (feet, btoc) | Top-of-Casing Elevation (feet, msl) | April 11, 2001 | |
|--------------------------------|-------------------------|-------------------------------------|-----------------------------|-----------------------------------|
| | | | Depth to Water (feet, btoc) | Water-Level Elevation (feet, msl) |
| CEF-BP-1S | 14.72 | 71.28 | 6.69 | 64.59 |
| CEF-BP-2S | 14.48 | 71.78 | 7.10 | 64.68 |
| CEF-BP-3S | 14.57 | 72.38 | 7.89 | 64.49 |
| CEF-BP-4S | 14.75 | 72.28 | 7.86 | 64.42 |
| CEF-BP-5I | 34.39 | 71.63 | 7.05 | 64.58 |
| CEF-BP-6S | 14.20 | 71.87 | 7.36 | 64.51 |

Notes:

btoc - below top of casing.

msl - mean sea level.

TABLE 2

**SUMMARY OF RESULTS - APRIL 2001 EVENT
BP WELLS SITE MONITORING REPORT
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA**

| Well Sample date Well Depth, Feet bgs | CEF-BP-1S 04/11/01 15 (Contaminated Well) Sample | CEF-BP-1S 04/11/01 15 (Contaminated Well) Duplicate | CEF-BP-1S 05/22/01 15 (Contaminated Well) | CEF-BP-6S 04/11/01 14 (Perimeter Well) | MOP Approval Order Action Levels for Contaminated Well/Perimeter Well | MOP Approval Order Year 1 Milestone | FDEP FAC 62-777 GCTL |
|---|--|---|--|---|--|---|----------------------------|
| Volatile Organic Compounds (ug/L) | | | | | | | |
| 1,2,4-TRIMETHYLBENZENE | 148 | 144 | 156 | 2 U | 100/10 | 45 | 10 |
| 1,3,5-TRIMETHYLBENZENE | 39.5 | 49.9 | 53.8 | 2 U | 100/10 | 16 | 10 |
| XYLENES, TOTAL | 439 | 432 | 634 | 6 U | 200/20 | 100 | 20 |

NOTES:

- 1 - Bold indicates concentrations greater than MOP Action Level.
- 2 - U - not detected at detection limit shown
- 3 - GCTL - Groundwater Cleanup Target Level

TABLE 3

**SUMMARY OF POSITIVE VOC DETECTIONS IN GROUNDWATER
BP WELLS SITE MONITORING REPORT
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA
PAGE 1 OF 3**

| Well | CEF-BP-1S | | | | | | |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | 10/99 | 02/03/00 | 03/27/00 | 03/27/00 | 04/11/01 | 04/11/01 | 05/22/01 |
| Sample date | | | | | | | |
| Well Depth, Feet bgs | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | | | Sample | Duplicate | Sample | Duplicate | |
| Volatile Organic Compounds (ug/L) | | | | | | | |
| 1,2,4-TRIMETHYLBENZENE | 1200 | 45.9 | 49.5 | 39.7 | 148 | 144 | 156 |
| 1,3,5-TRIMETHYLBENZENE | 400 | 16.1 | 17.9 | 13.5 | 39.5 | 49.9 | 53.8 |
| BENZENE | 1 U | 0.56 J | 1 U | 1 U | | | |
| ETHYLBENZENE | 350 | 20.9 | 20 | 15 | | | |
| TOLUENE | 400 | 38.5 | 36.6 | 30.1 | | | |
| XYLENES, TOTAL | 1890 | 114 | 101 | 86 | 439 | 432 | 634 |

Notes:

- 1 - Bold indicates concentrations greater than FDEP criteria.
- 2 - J - indicates an estimated value.
- 3 - U - not detected at detection limit shown.
- 4 - Blank means analysis was not performed.
- 5 - ug/L - micrograms per liter
- 6 - bgs - below ground surface
- 7 - 10/99 results by Golder Associates

TABLE 3

SUMMARY OF POSITIVE VOC DETECTIONS IN GROUNDWATER
 BP WELLS SITE MONITORING REPORT
 NAVAL AIR STATION CECIL FIELD
 JACKSONVILLE, FLORIDA
 PAGE 2 OF 3

| Well | CEF-BP-2S | | | CEF-BP-6S | |
|--|--------------------------|-----------------------------|----------------|----------------|----------------|
| | 02/03/00 15 Sample | 02/03/00 15 Duplicate | 03/27/00 15 | 03/27/00 14 | 04/11/01 14 |
| Volatile Organic Compounds (ug/L) | | | | | |
| 1,2,4-TRIMETHYLBENZENE | 1 U | 1 U | 1 U | 1 U | 2 U |
| 1,3,5-TRIMETHYLBENZENE | 1 U | 1 U | 1 U | 1 U | 2 U |
| BENZENE | 1 U | 1 U | 1 U | 1 U | |
| ETHYLBENZENE | 1 U | 1 U | 1 U | 1 U | |
| TOLUENE | 1 U | 1 U | 1 U | 1 U | |
| XYLENES, TOTAL | 3 U | 3 U | 3 U | 3 U | 6 U |

Notes:

- 1 - Bold indicates concentrations greater than FDEP criteria.
- 2 - J - indicates an estimated value.
- 3 - U - not detected at detection limit shown.
- 4 - Blank means analysis was not performed.
- 5 - ug/L - micrograms per liter
- 6 - bgs - below ground surface
- 7 - 10/99 results by Golder Associates

TABLE 3

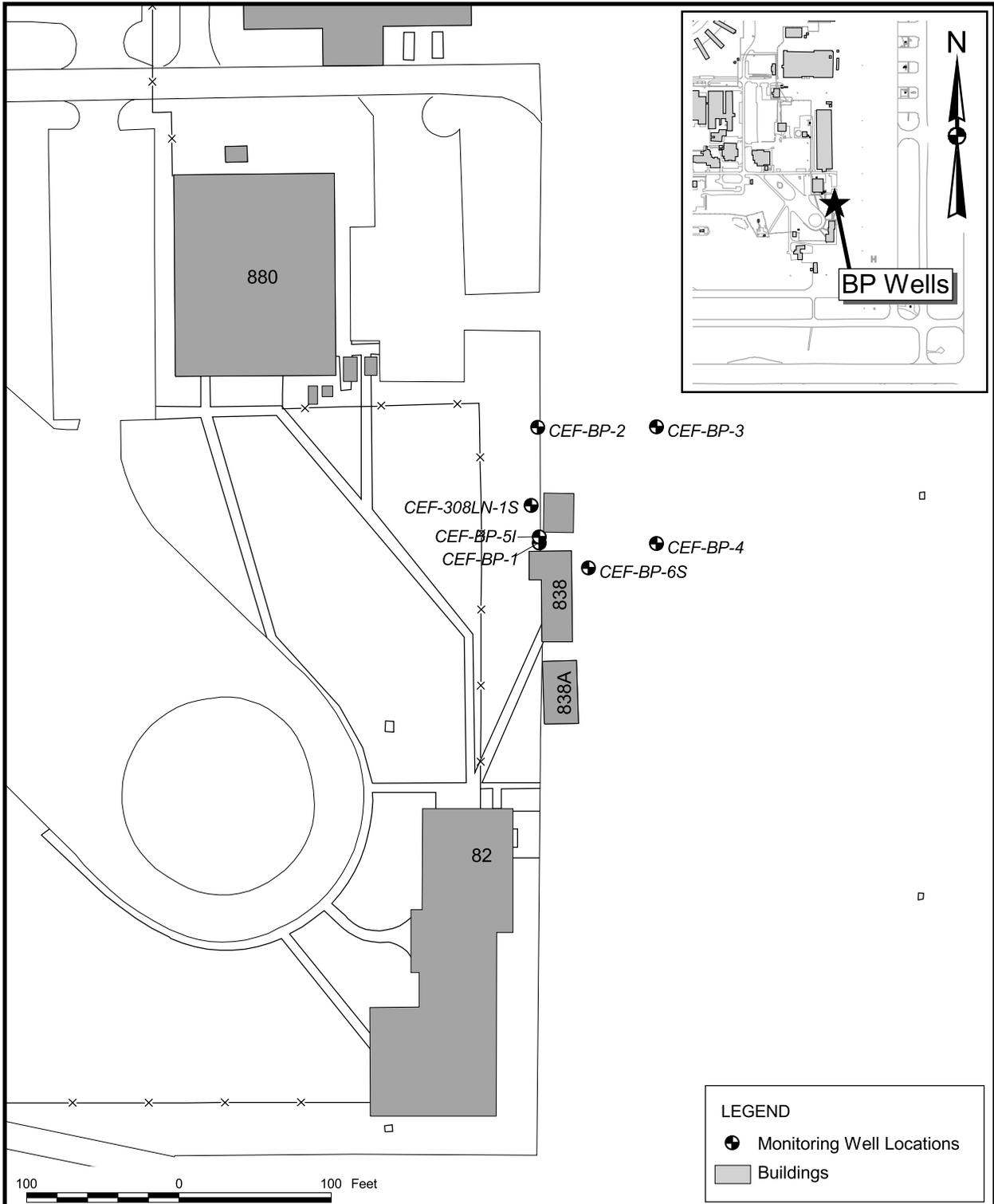
**SUMMARY OF POSITIVE VOC DETECTIONS IN GROUNDWATER
BP WELLS SITE MONITORING REPORT
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA
PAGE 3 OF 3**

| Well | CEF-BP-3S | CEF-BP-4S | CEF-BP-5I | CEF-308LN-1S | MOP Approval Order | FDEP |
|--|-----------|-----------|-----------|--------------|----------------------|------------|
| Sample date | 03/27/00 | 03/27/00 | 03/27/00 | 03/27/00 | Action Levels for | FAC 62-777 |
| Well Depth, Feet bgs | 15 | 15 | 35 | 14 | Contaminated | GCTL |
| | | | | | Well/Perimeter Wells | |
| Volatile Organic Compounds (ug/L) | | | | | | |
| 1,2,4-TRIMETHYLBENZENE | 1 U | 1 U | 1 U | 1 U | 100/10 | 10 |
| 1,3,5-TRIMETHYLBENZENE | 1 U | 1 U | 1 U | 1 U | 100/10 | 10 |
| BENZENE | 1 U | 1 U | 1 U | 1 U | none | 1 |
| ETHYLBENZENE | 1 U | 1 U | 1 U | 1 U | none | 30 |
| TOLUENE | 1 U | 1 U | 1 U | 1 U | none | 40 |
| XYLENES, TOTAL | 3 U | 3 U | 3 U | 3 U | 200/20 | 20 |

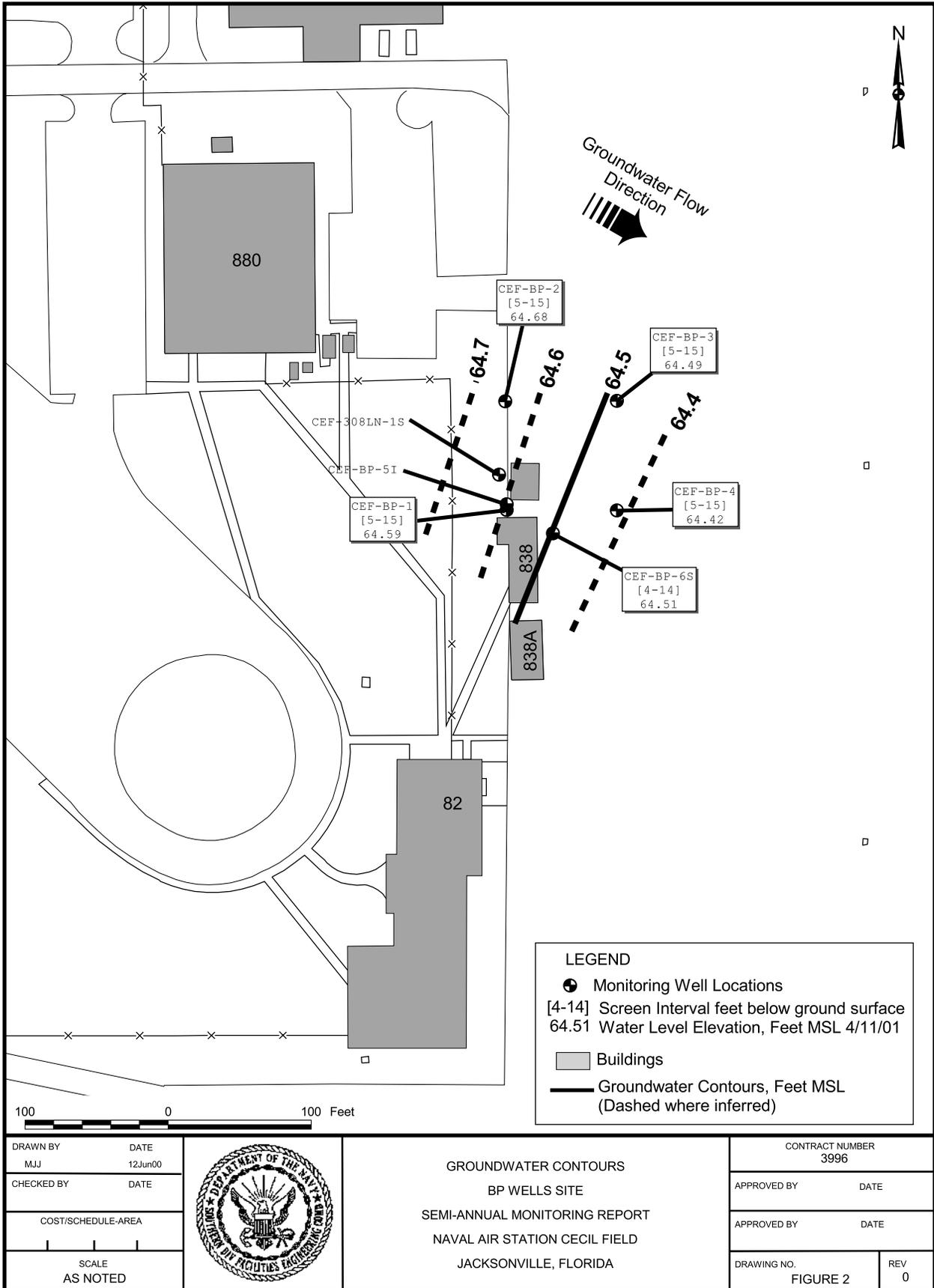
Notes:

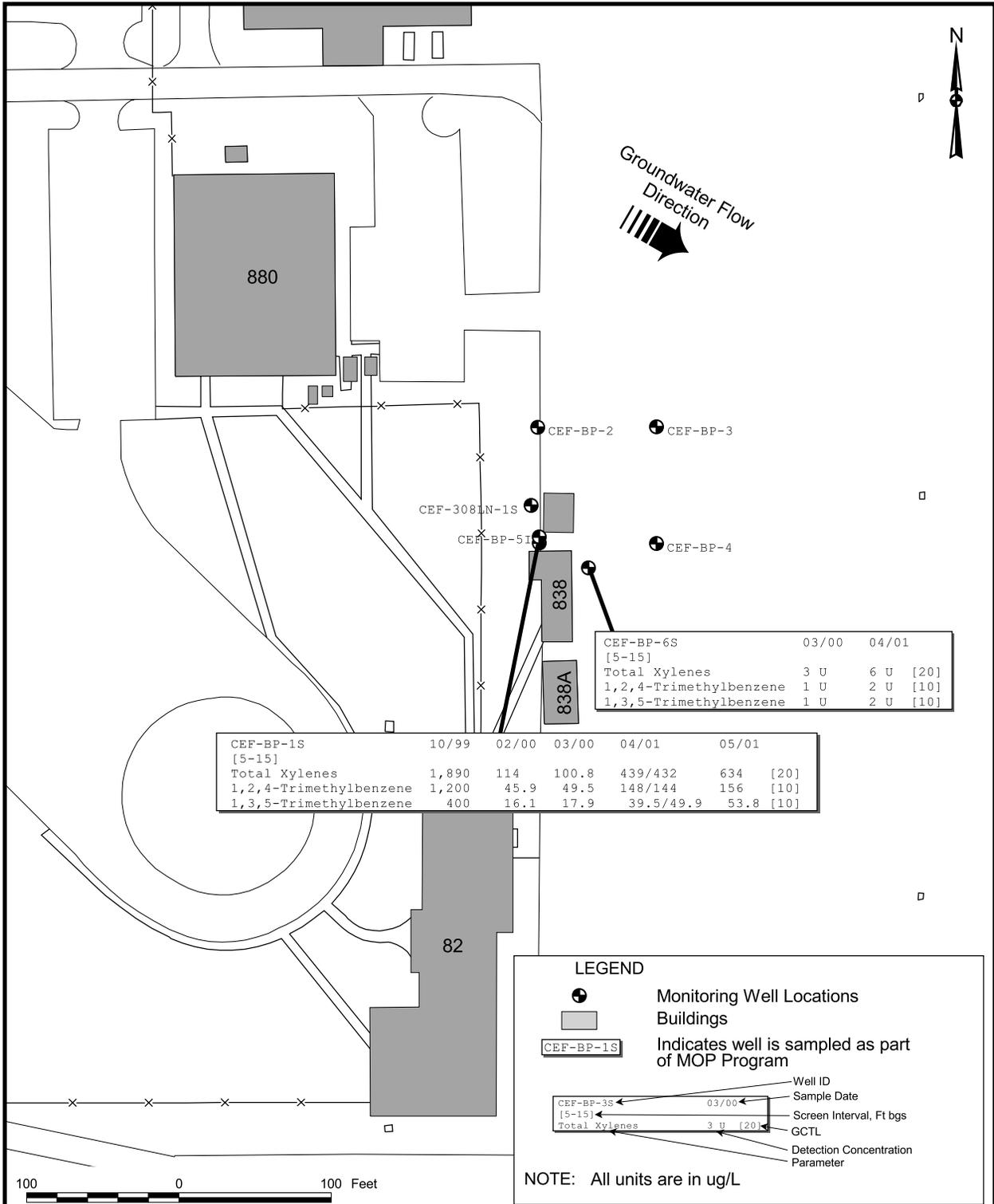
- 1 - Bold indicates concentrations greater than FDEP criteria.
- 2 - J - indicates an estimated value.
- 3 - U - not detected at detection limit shown.
- 4 - Blank means analysis was not performed.
- 5 - ug/L - micrograms per liter
- 6 - bgs - below ground surface
- 7 - 10/99 results by Golder Associates

FIGURES



| | | | | |
|--|---|---|---|--|
| DRAWN BY MJJ CHECKED BY COST/SCHEDULE-AREA SCALE AS NOTED | DATE 12Jun00 DATE DATE DATE |  | SITE LOCATION MAP BP WELLS SITE SEMI-ANNUAL MONITORING REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA | CONTRACT NUMBER 3996 |
| | | | | APPROVED BY APPROVED BY DRAWING NO. FIGURE 1 |





| | | | | |
|--------------------|-------------------|---|-------------------------|----------|
| DRAWN BY MJJ | DATE 12Jun00 | <p>MONITORING WELL RESULTS BP WELLS SITE SEMI-ANNUAL MONITORING REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA</p> | CONTRACT NUMBER 3996 | |
| CHECKED BY | DATE | | APPROVED BY | DATE |
| COST/SCHEDULE-AREA | SCALE AS NOTED | | APPROVED BY | DATE |
| | | | DRAWING NO. FIGURE 3 | REV 0 |

ATTACHMENT A
MONITORING ONLY PLAN APPROVAL ORDER



Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

August 31, 2000

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Commanding Officer
Mr. Nick Ugolini, Code 1843
SOUTHNAVFACENGCOM
Post Office Box 190010
North Charleston, SC 29419-9010

RE: Site Assessment Report and Monitoring Only Proposal for BP
Wells Area, Naval Air Station Cecil Field, Florida.

Dear Mr. Ugolini:

I have reviewed the Site Assessment Report and Monitoring Only Proposal for Natural Attenuation dated August 2000 (received August 22, 2000), submitted for this site. Based upon my review and comments, the enclosed Monitoring Only Plan for Natural Attenuation was signed by Mr. Doug A. Jones, Chief, Bureau of Waste Cleanup.

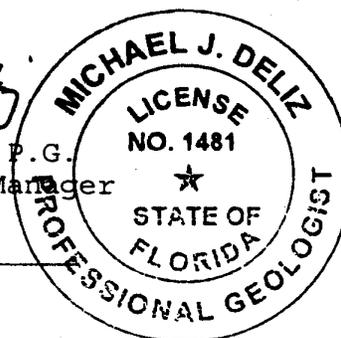
If I can be of any further assistance with this matter, please contact me at (850) 921-9991.

Sincerely,

Michael J. Deliz, P.G.
Remedial Project Manager

31-446-00

Date



CC: Debbie Vaughn-Wright, USEPA
John Flowe, City of Jacksonville
Scott Glass, SOUTHNAVFACENGCOM
Mark Speranza, TtNUS, Pittsburgh

TJB B JJC JJC ESN ESN

"Protect, Conserve and Manage Florida's Environment and Natural Resources"



Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

August 31, 2000

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Commanding Officer
Mr. Nick Ugolini, Code 1843
SOUTHNAVFACENGCOM
Post Office Box 190010
North Charleston, South Carolina 29419-9010

Subject: Natural Attenuation Monitoring Plan Approval Order
BP Wells Area
Naval Air Station Cecil Field, Florida

Dear Mr. Ugolini:

The Bureau of Waste Cleanup has completed the review of the Site Assessment Report Addendum and Natural Attenuation Monitoring Plan dated August 2000 (received August 22, 2000) submitted for this site. Pursuant to Rule 62-770.690, Florida Administrative Code (F.A.C.), the Department of Environmental Protection approves the Natural Attenuation Monitoring Plan. Pursuant to Rule 62-770.690(7), F.A.C., you are required to complete the monitoring program outlined below. The first sampling event should be performed within 60 days of receipt of this Natural Attenuation Monitoring Plan Approval Order (Order). Water-level measurements should be made immediately prior to each sampling event. The analytical results (laboratory report), chain of custody, cumulative summary table of the analytical results, site map(s) illustrating the most recent analytical results, and the water-level elevation information (cumulative summary table and most recent flow interpretation map), should be submitted to the Department within 60 days of sample collection.

| <u>Monitoring Wells</u> | <u>Contaminants of Concern</u> | <u>Frequency</u> | <u>Duration</u> |
|-----------------------------|---|------------------|-----------------|
| MWCEF-BP1S and CEF-BP-6S | Xylenes, 1,2,4-Trimethylbenzene, and 1,3,5- Trimethylbenzene | Semi-annual | Five Years |

If concentrations of chemicals of concern in any of the designated wells increase above the action levels listed below, the well or wells must be resampled no later than 30 days after the initial positive results are known. If the results of the resampling confirm the initial sampling results, then a proposal must be submitted, as described in Rule 62-770.690(7)(f), F.A.C.

"Protect, Conserve and Manage Florida's Environment and Natural Resources"

Printed on recycled paper.

Mr. Nick Ugolini
Page Two
August 31, 2000

Contaminated well:

CEF-BP-1S: 200 µg/l Xylene, 100 µg/l 1,2,4-Trimethylbenzene, and 100 µg/l 1,3,5-Trimethylbenzene

Perimeter well:

CEF-BP-6S: 20 µg/l Xylene, 10 µg/l 1,2,4-Trimethylbenzene, and 10 µg/l 1,3,5-Trimethylbenzene

The approved Remedial Action by Natural Attenuation monitoring period is 5 years. "Milestone" objectives should be established if monitoring is projected to take greater than one year. The following are the "milestone" objectives that will be used for annual evaluation of remediation progress by natural attenuation. An explanation of the progress relative to these milestone objectives, and the need for corrective action (if applicable), should be provided in the annual evaluation:

| | |
|------------------------------------|------------------|
| <u>Xylene</u> | <u>CEF-BP-1S</u> |
| End of year 1 | 100 µg/l |
| End of year 2 | 80 µg/l |
| End of year 3 | 55 µg/l |
| End of year 4 | 30 µg/l |
| End of year 5 | <20 µg/l |
| | |
| <u>1,2,4- Trimethylbenzene</u> | <u>CEF-BP-1S</u> |
| End of year 1 | 45 µg/l |
| End of year 2 | 40 µg/l |
| End of year 3 | 30 µg/l |
| End of year 4 | 20 µg/l |
| End of year 5 | <10 µg/l |
| | |
| <u>1,3,5- Trimethylbenzene</u> | <u>CEF-BP-1S</u> |
| End of year 1 | 16 µg/l |
| End of year 2 | 15 µg/l |
| End of year 3 | 14 µg/l |
| End of year 4 | 12 µg/l |
| End of year 5 | <10 µg/l |

If the applicable No Further Action criteria in Rule 62-770.680, F.A.C., are met at the end of the monitoring period, a Site Rehabilitation Completion Report, summarizing the monitoring program and containing documentation supporting the opinion that the cleanup objectives have been achieved, should be submitted as required in Rule 62-770.690(8), F.A.C. If the applicable No Further Action criteria in Rule 62-770.680, F.A.C., are not met following five years of

Mr. Nick Ugolini
Page Three
August 31, 2000

monitoring, then a report summarizing the monitoring program should be submitted, including a proposal as described in Rule 62-770.690(7)(g), F.A.C..

Legal Issues

The Department's Order shall become final unless a timely petition for an administrative proceeding (hearing) is filed under Sections 120.569 and 120.57, Florida Statutes (F.S.), within 21 days of receipt of this Order. The procedures for petitioning for a hearing are set forth below.

Persons affected by this Order have the following options:

If you choose to accept the above decision by the Department about the Site Assessment Report Addendum and Natural Attenuation Monitoring Plan you do not have to do anything. This Order is final and effective as of the date on the top of the first page of this Order.

If you disagree with the decision, you may do one of the following:

1. File a petition for administrative hearing with the Department's Office of General Counsel within 21 days of receipt of this Order; or
2. File a request for an extension of time to file a petition for hearing with the Department's Office of General Counsel within 21 days of receipt of this Order. Such a request should be made if you wish to meet with the Department in an attempt to informally resolve any disputes without first filing a petition for hearing.

Please be advised that mediation of this decision pursuant to Section 120.573, Florida Statutes (F.S.), is not available.

How to Request an Extension of Time to File a Petition for Hearing

For good cause shown, pursuant to Rule 62-110.106(4), F.A.C., the Department may grant a request for an extension of time to file a petition for hearing. Such a request must be filed (received) in the Department's Office of General Counsel at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, within 21 days of receipt of this Order. Petitioner, if different from Commanding Officer, SOUTHNAVENGCOM, shall mail a copy of the request to Commanding Officer, SOUTHNAVENGCOM at the time of filing. Timely filing a request for an extension of time tolls the time period within which a petition for administrative hearing must be made.

How to File a Petition for Administrative Hearing

A person whose substantial interests are affected by this Order may petition for an administrative hearing under Sections 120.569 and 120.57, F.S. The petition must contain the

Mr. Nick Ugolini
Page Four
August 31, 2000

information set forth below and must be filed (received) in the Department's Office of General Counsel at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, within 21 days of receipt of this Order. Petitioner, if different from Commanding Officer, SOUTHNAVENGCOM, shall mail a copy of the petition to Commanding Officer, SOUTHNAVENGCOM at the time of filing. Failure to file a petition within this time period shall waive the right of anyone who may request an administrative hearing under Sections 120.569 and 120.57, F.S.

Pursuant to Section 120.54(5)(b)4.a., F.S. (1998, Supp.), and Rule 28-106.201, F.A.C., a petition for administrative hearing shall contain the following information:

- a) The name, address, and telephone number of each petitioner, the name, address, and telephone number of the petitioner's representative, if any, the site owner's name and address, if different from the petitioner, the FDEP facility number, and the name and address of the facility;
- b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
- c) An explanation of how each petitioner's substantial interests are or will be affected by the Department's action or proposed action;
- d) A statement of the material facts disputed by the petitioner, or a statement that there are no disputed facts;
- e) A statement of the ultimate facts alleged, including a statement of the specific facts the petitioner contends warrant reversal or modification of the Department's action or proposed action;
- f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the Department's action or proposed action; and
- g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the Department to take with respect to the Department's action or proposed action.

This Order is final and effective as of the date on the top of the first page of this Order. Timely filing a petition for administrative hearing postpones the date this Order takes effect until the Department issues either a final order pursuant to an administrative hearing or an order responding to supplemental information provided pursuant to meetings with the Department.

Judicial Review

Any party to this Order has the right to seek judicial review of it under Section 120.68, F.S., by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice of appeal must be filed within 30 days after this Order is filed with the clerk of the Department (see below).

Mr. Nick Ugolini
Page Five
August 31, 2000

Questions

Any questions regarding the Department's review of your Site Assessment Report Addendum and Natural Attenuation Monitoring Plan should be directed to Michael J. Deliz, P.G. at (850) 921-9991. Questions regarding legal issues should be referred to the Department's Office of General Counsel at (850) 488-9314. Contact with any of the above does not constitute a petition for administrative hearing or request for an extension of time to file a petition for administrative hearing.

Sincerely,


Douglas A. Jones, Chief
Bureau of Waste Cleanup
Division of Waste Management

DAJ/mjd

cc: Scott Glass, SOUTHNAVFACENGCOM
Mark Speranza, TtNUS, Pittsburgh

FILING AND ACKNOWLEDGMENT
FILED, on this date, pursuant to
§120.52 Florida Statutes, with the
designated Department Clerk, receipt
of which is hereby acknowledged.

Minnie L. Robinson
Clerk

August 31, 2000
Date

ATTACHMENT B
GROUNDWATER ANALYTICAL REPORT

Sample Summary

Tetra Tech, NUS

Job No: F9420

Cecil Field CTO168

Project No: N3996WORK RELEASE 168CF-1

| Sample Number | Collected Date | Time By | Received | Matrix Code | Type | Client Sample ID |
|---------------|----------------|----------|----------|-------------|--------------|------------------|
| F9420-1 | 04/11/01 | 14:55 MD | 04/12/01 | AQ | Ground Water | CEF-BP-GW-1S-01 |
| F9420-2 | 04/11/01 | 12:12 MD | 04/12/01 | AQ | Ground Water | CEF-BP-GW-6S-01 |
| F9420-3 | 04/11/01 | 00:00 MD | 04/12/01 | AQ | Ground Water | CEF-BP-GW-DUP-01 |

Report of Analysis

| | |
|-----------------------------------|-------------------------|
| Client Sample ID: CEF-BP-GW-1S-01 | Date Sampled: 04/11/01 |
| Lab Sample ID: F9420-1 | Date Received: 04/12/01 |
| Matrix: AQ - Ground Water | Percent Solids: n/a |
| Method: SW846 8260B | |
| Project: Cecil Field CTO168 | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|--------|------------|----|----------|----|-----------|------------|------------------|
| Run #1 | C0003343.D | 1 | 04/17/01 | JG | n/a | n/a | VC157 |
| Run #2 | C0003362.D | 5 | 04/19/01 | JG | n/a | n/a | VC158 |

VOA TCL List

| CAS No. | Compound | Result | RL | Units | Q |
|-----------|------------------------|------------------|-----|-------|---|
| 95-63-6 | 1,2,4-Trimethylbenzene | 148 ^a | 10 | ug/l | |
| 108-67-8 | 1,3,5-Trimethylbenzene | 39.5 | 2.0 | ug/l | |
| 1330-20-7 | Xylene (total) | 439 ^a | 30 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|------------|-----------------------|--------|--------|---------|
| 1868-53-7 | Dibromofluoromethane | 99% | 96% | 80-120% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 104% | 98% | 80-120% |
| 2037-26-5 | Toluene-D8 | 97% | 102% | 80-120% |
| 460-00-4 | 4-Bromofluorobenzene | 95% | 97% | 80-120% |

(a) Result is from Run# 2

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: CEF-BP-GW-6S-01
 Lab Sample ID: F9420-2
 Matrix: AQ - Ground Water
 Method: SW846 8260B
 Project: Cecil Field CTO168

Date Sampled: 04/11/01
 Date Received: 04/12/01
 Percent Solids: n/a

| Run # | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|--------|------------|----|----------|----|-----------|------------|------------------|
| Run #1 | C0003361.D | 1 | 04/19/01 | JG | n/a | n/a | VC158 |
| Run #2 | | | | | | | |

VOA TCL List

| CAS No. | Compound | Result | RL | Units | Q |
|-----------|------------------------|--------|-----|-------|---|
| 95-63-6 | 1,2,4-Trimethylbenzene | ND | 2.0 | ug/l | |
| 108-67-8 | 1,3,5-Trimethylbenzene | ND | 2.0 | ug/l | |
| 1330-20-7 | Xylene (total) | ND | 6.0 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|------------|-----------------------|--------|--------|---------|
| 1868-53-7 | Dibromofluoromethane | 97% | | 80-120% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 97% | | 80-120% |
| 2037-26-5 | Toluene-D8 | 103% | | 80-120% |
| 460-00-4 | 4-Bromofluorobenzene | 104% | | 80-120% |

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: CEF-BP-GW-DUP-01
 Lab Sample ID: F9420-3
 Matrix: AQ - Ground Water
 Method: SW846 8260B
 Project: Cecil Field CTO168

Date Sampled: 04/11/01
 Date Received: 04/12/01
 Percent Solids: n/a

| Run # | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|--------|------------|----|----------|----|-----------|------------|------------------|
| Run #1 | C0003363.D | 5 | 04/19/01 | JG | n/a | n/a | VC158 |
| Run #2 | | | | | | | |

VOA TCL List

| CAS No. | Compound | Result | RL | Units | Q |
|-----------|------------------------|--------|----|-------|---|
| 95-63-6 | 1,2,4-Trimethylbenzene | 144 | 10 | ug/l | |
| 108-67-8 | 1,3,5-Trimethylbenzene | 49.9 | 10 | ug/l | |
| 1330-20-7 | Xylene (total) | 432 | 30 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|------------|-----------------------|--------|--------|---------|
| 1868-53-7 | Dibromofluoromethane | 96% | | 80-120% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 97% | | 80-120% |
| 2037-26-5 | Toluene-D8 | 101% | | 80-120% |
| 460-00-4 | 4-Bromofluorobenzene | 98% | | 80-120% |

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



TETRA TECH NUS, INC.

CHAIN OF CUSTODY

NUMBER CTO168-040901

PAGE 1 OF 1

CECIL FIELD

| | | | |
|--------------------------|-----------------------------|---|---|
| PROJECT NO: N3996 | SITE NAME: BP Wells Area | PROJECT MANAGER AND PHONE NUMBER: PAUL CALLIGAN 850 385 9899 | LABORATORY NAME AND CONTACT: ACCUTEST Harry Behrlich |
| SAMPLERS (SIGNATURE) | | FIELD OPERATIONS LEADER AND PHONE NUMBER: MERVIN DARE 904 281 0400 | ADDRESS: 4405 Vine Land Rd. C-15 |
| | | CARRIER/WAYBILL NUMBER: Fedex 8244 2558 5235 | CITY, STATE: ORLANDO, FL 32811 |

STANDARD TAT RUSH TAT

24 hr. 48 hr. 72 hr. 7 day 14 day

CONTAINER TYPE
PLASTIC (P) or GLASS (G) **G**

PRESERVATIVE USED

TYPE OF ANALYSIS
VOCs 5w546 6260B HCE

| DATE YEAR | TIME | SAMPLE ID | MATRIX | GRAB (G) COMP (C) | No. OF CONTAINERS | TYPE OF ANALYSIS | | | | | | COMMENTS | |
|-----------|------|-------------------|--------|-------------------|-------------------|------------------|--|--|--|--|--|----------|---|
| 4/11 | 1455 | LEF-BP-GW-15-01 | GW | G | 3 | 3 | | | | | | | Cool to 40c |
| 4/11 | 1212 | LEF-BP-GW-65-01 | GW | G | 3 | 3 | | | | | | | |
| 4/11 | - | LEF-BP-GW-DUPI-01 | GW | G | 3 | 3 | | | | | | | * Report only Total xylenes, 1,2,4 TRIMETHYL benzene, and 1,3,5 TRIMETHYL benzene Work Release 168CF-1 |

| | | | | | |
|------------------------|-----------------|--------------|----------------|------|------|
| 1. RELINQUISHED BY | DATE 4/11/01 | TIME 1630 | 1. RECEIVED BY | DATE | TIME |
| 2. RELINQUISHED BY | DATE | TIME | 2. RECEIVED BY | DATE | TIME |
| 3. RELINQUISHED BY | DATE | TIME | 3. RECEIVED BY | DATE | TIME |

COMMENTS N3996 TGO 050 110

Sample Summary

Tetra Tech, NUS

Job No: F9762

Cecil Field CTO168
Project No: BP Wells Area

| Sample Number | Collected Date | Time By | Received | Matrix Code | Type | Client Sample ID |
|---------------|----------------|----------|----------|-------------|--------------|------------------|
| F9762-1 | 05/22/01 | 10:45 RM | 05/23/01 | AQ | Ground Water | CEF-BP-GW-1S-01A |

Report of Analysis

Client Sample ID: CEF-BP-GW-1S-01A
 Lab Sample ID: F9762-1
 Matrix: AQ - Ground Water
 Method: SW846 8260B
 Project: Cecil Field CTO168

Date Sampled: 05/22/01
 Date Received: 05/23/01
 Percent Solids: n/a

| Run # | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|--------|-----------|----|----------|----|-----------|------------|------------------|
| Run #1 | B005234.D | 5 | 06/05/01 | JG | n/a | n/a | VB205 |
| Run #2 | | | | | | | |

VOA TCL List

| CAS No. | Compound | Result | RL | Units | Q |
|-----------|------------------------|--------|----|-------|---|
| 95-63-6 | 1,2,4-Trimethylbenzene | 156 | 10 | ug/l | |
| 108-67-8 | 1,3,5-Trimethylbenzene | 53.8 | 10 | ug/l | |
| 1330-20-7 | Xylene (total) | 634 | 30 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|------------|-----------------------|--------|--------|---------|
| 1868-53-7 | Dibromofluoromethane | 101% | | 80-120% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 107% | | 80-120% |
| 2037-26-5 | Toluene-D8 | 96% | | 80-120% |
| 460-00-4 | 4-Bromofluorobenzene | 98% | | 80-120% |

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

