N60200.AR.003465
NAS CECIL FIELD, FL
5090.3a

SECOND SEMI-ANNUAL SECOND YEAR GROUNDWATER MONITORING LETTER REPORT FOR BUILDING 80 TANK 80 NAS CECIL FIELD FL

10/23/2002

TETRA TECH NUS INC

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Document Tracking Number 03JAX0010

October 23, 2002

Project Number N4093

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

Reference: Clean Contract Number N62467-94-D-0888
Contract Task Order Number 0209

Subject: Groundwater Monitoring Report, 2nd Semi-Annual, 2nd Year (June 2002)
Building 80, Tank 80
Naval Air Station Cecil Field
Jacksonville, Florida

Dear Mr. Grabka:

Tetra Tech NUS, Inc. (TtNUS) is pleased to submit this semi-annual Groundwater Monitoring Report for the referenced Contract Task Order (CTO) for the Building 80, Tank 80. 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, Florida Administrative Code (FAC). The sampling program was accomplished in general accordance with the Natural Attenuation Monitoring Plan (MONA) Approval Order signed by the Florida Department of Environmental Protection (FDEP) on September 30, 1999 (Attachment A) and as modified by an FDEP e-mail message dated October 26, 2001 (Attachment B).

This report summarizes the fieldwork and analytical results for the subject site for the six months preceding the sampling event conducted in June 2002. The work was performed in general accordance with the Base-wide Generic Work Plan Volumes I and II (TtNUS, 1998). The location of the site is presented on Figure 1.

FIELD OPERATIONS

On June 18, 2002, water level measurements were recorded from each of the site's monitoring wells prior to sample collection. The depth to water ranged from 6.85 feet (ft) below top of casing (btoc) (CEF-80-14S) to 7.32 ft btoc (CEF-80-15S). The depth-to-water measurements, along with top-of-casing elevations, were used to calculate groundwater elevations.

Groundwater samples were collected from five shallow monitoring wells (CEF-80-08S, CEF-80-09S, CEF-80-14S, CEF-80-15S, and CEF-80-16S) on June 18, 2002 (Figure 1). Following collection, the samples were placed on ice and subsequently shipped under chain-of-custody to Accutest Laboratories in Orlando, Florida. The laboratory analyzed the samples for purgeable aromatics by U.S. Environmental

Protection Agency (USEPA) Method SW846 8260B and polynuclear aromatic hydrocarbons (PAHs) by USEPA Method SW846 8310.

RESULTS

Groundwater elevation data from this event and the previous sampling event are shown on Table 1. The groundwater flow direction with elevation data is shown on Figure 2. Based on the data, the inferred general direction of groundwater flow is to the west-northwest.

Compounds of concern (COCs) reported by the laboratory for the groundwater samples collected for this sampling event were compared to FDEP Groundwater Cleanup Target Levels (GCTLs) and Natural Attenuation Default Source Concentrations (NADSCs). The data and comparable standards are indicated on Table 2 and the results are illustrated on Figure 3. For this sampling event, groundwater analytical results indicated three COCs (naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene) slightly exceeding their respective GCTLs, but were below their respective NADSCs. A copy of the laboratory report for the June 18, 2002 sampling event is provided as Attachment C.

CONCLUSIONS and RECOMMENDATIONS

The previous sampling event held in December 2001 reported a south-southwesterly groundwater flow direction. Following comparison with this latest groundwater flow map, which indicates a west-northwesterly flow direction, it appears that there is a general seasonal shift in the flow direction of the site.

The analytical results for this sampling event (Table 2) indicate that the groundwater COCs have rebounded slightly in the source well to concentrations similar to the September 2000 event. Though the levels of COCs for naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene have exceeded their respective GCTLs by an average of 13 micrograms per liter (µg/L), the concentrations are still below the second year's milestone objectives by 17 µg/L or more.

Since the petroleum contamination persists at concentrations above GCTLs and the current set of five wells appears to be necessary to monitor the contaminant plume, TtNUS recommends continued monitoring for another year.

If you have any questions in regard to this submittal, please feel free to contact me at (813) 806-0202.

Sincerely,

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

Mervin W. Dale, P.G.
Florida Professional Geologist
P.G. Number 0001917

PC/md

Attachments (8)

cc: W. Hansel, SOUTHDIV
D. Vaughn-Wright, USEPA
D. Wroblewski, TtNUS (cover letter only)
M. Perry, TtNUS (unbound)
Project File – CTO 0209

TABLES

Table 1
Water Table Elevation Data

Semi-Annual Groundwater Monitoring Report
Building 80, Tank 80
Naval Air Station Cecil Field
Jacksonville, Florida

Monitoring Well Identification	Well Depth (ft, btoc)	Top-of-Casing Elevation (ft, msl)	September 25, 2000		March 6, 2001		December 14, 2001		June 18, 2002	
			Depth to Water (ft, btoc)	Water-Level Elevation (ft, msl)	Depth to Water (ft, btoc)	Water-Level Elevation (ft, msl)	Depth to Water (ft, btoc)	Water-Level Elevation (ft, msl)	Depth to Water (ft, btoc)	Water-Level Elevation (ft, msl)
CEF-80-08S	13.10	78.58	3.48	75.10	6.50	72.08	4.87	73.71	7.12	71.46
CEF-80-09S	14.00	78.64	3.84	74.80	6.49	72.15	4.84	73.80	7.1	71.54
CEF-80-14S	14.70	78.57	3.22	75.35	6.38	72.19	4.28	74.29	6.85	71.72
CEF-80-15S	12.95	78.54	NA	NA	NA	NA	4.67	73.87	7.32	71.22
CEF-80-16S	12.88	78.83	NA	NA	NA	NA	5.05	73.78	7.03	71.80

Notes: msl = mean sea level
NA = not applicable

Table 2
Summary of Detections in Groundwater

Semi-Annual/Annual Groundwater Monitoring Report
Building 80, Tank 80
Naval Air Station Cecil Field
Jacksonville, Florida

Compounds Detected	Source Area Well				Perimeter Monitoring Wells			
	CEF-80-14S				CEF-80-08S			
	9/25/2000	3/6/2001	12/14/2001	6/18/2002	9/25/2000	3/6/2001	12/14/2001	6/18/2002
PAHs (USEPA Method 8270C) (µg/L)								
Acenaphthene	2.3	7.1	<4.4	NA	<1	<1	<4.0	NA
Fluorene	2.8	6	<2.2	NA	<1	<1	<2.0	NA
Benzo(a)pyrene	<0.2	<0.2	<0.22	<0.20	<0.2	<0.2	<0.20	<0.20
1-Methylnaphthalene	**34**	**69**	<2.2	**32.4**	<1	<1	<2.0	<2.0
2-Methylnaphthalene	**34**	**84**	<2.2	**34.1**	<1	<1	<2.0	<2.0
Naphthalene	**62**	**93**	<2.2	**32.6**	<1	<1	<2.0	<2.0
Phenanthrene	1.7	3.6	<2.2	NA	<1	<1	<2.0	NA
Volatile Organic Compounds (USEPA Method 8260B) (µg/L)								
1,1-Dichloroethane	1.4	<1	NA	NA	1.4	<1	NA	NA
Benzene	**5.8**	**2.8**	<1.0	<1.0	0.68J	<1	<1.0	<1.0
Chlorobenzene	3.5	<1	<2.0	NA	9.1	1.8	<2.0	NA
Methyl-tert-butyl ether	<10	<10	<2.0	NA	<10	<10	<2.0	NA
Trichloroethene	0.64J	<1	NA	NA	<1	<1	NA	NA
Methylene chloride	<5	<5	NA	NA	<5	<5	NA	NA
Ethylbenzene	7.5	<1	<2.0	<1.0	<1	<1	<2.0	<1.0

See notes at end of table

Table 2
Summary of Detections in Groundwater

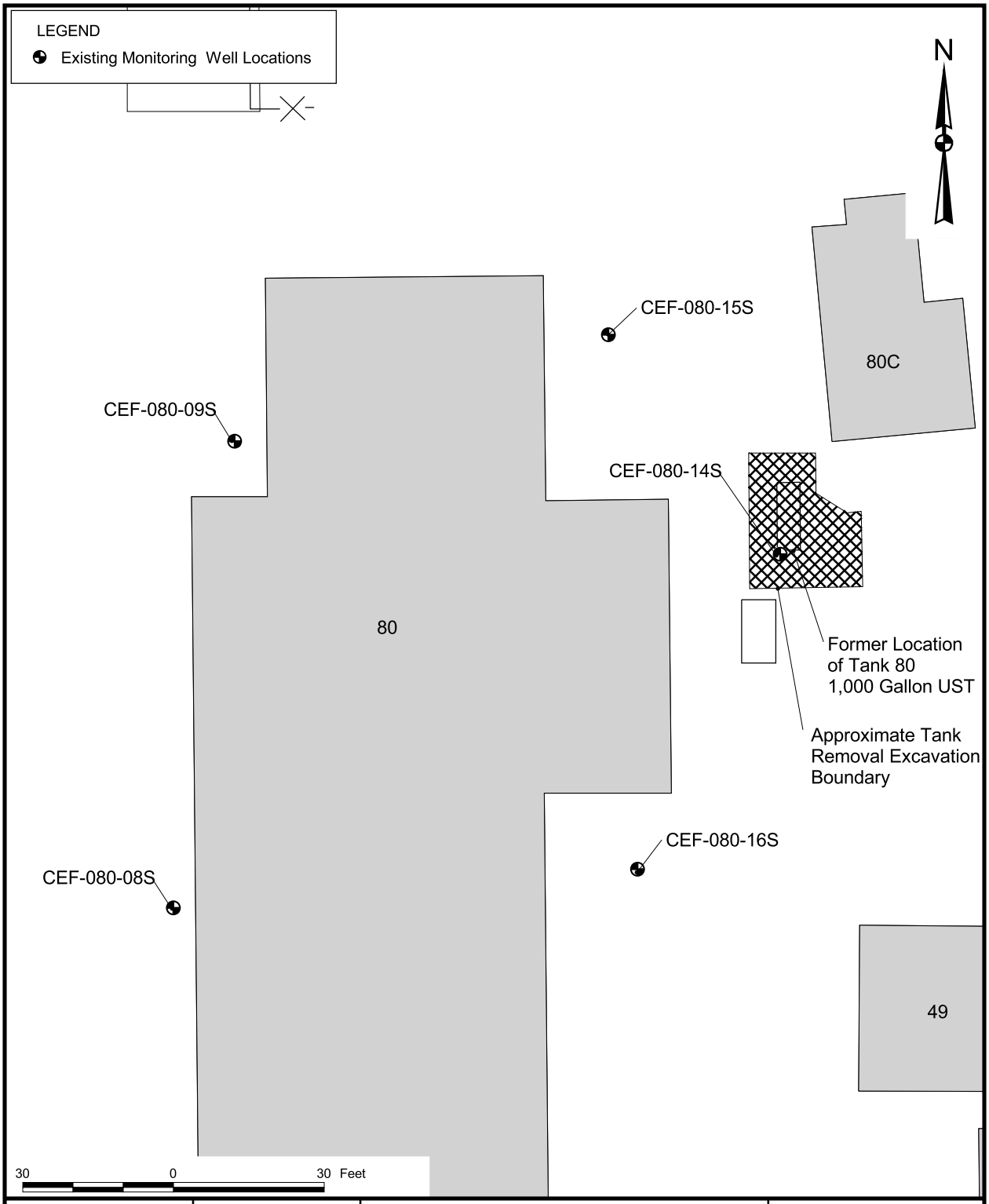
Semi-Annual Groundwater Monitoring Report
Building 80, Tank 80
Naval Air Station Cecil Field
Jacksonville, Florida

Compounds Detected	Perimeter Monitoring Wells								Milestone Objectives at End of Second Year for CEF-80-	NADSC/ GCTL[1, 2]
	CEF-80-09S				CEF-80-15S		CEF-80-16S			
	9/25/2000	3/6/2001	12/14/2001	6/18/2002	12/14/2001	6/18/2002	12/14/2001	6/18/2002		
PAHs (USEPA Method 8270C) (µg/L)										
Acenaphthene	<1	<1	<4.0	NA	<4.4	NA	<4.4	NA	None	200/20
Fluorene	<1	<1	<2.0	NA	<2.2	NA	<2.2	NA	None	2800/280
Benzo(a)pyrene	<0.2	<0.2	<0.20	<0.19	<0.22	<0.22	<0.22	<0.20	0.21	20/0.2
1-Methylnaphthalene	<1	<1	<2.0	<1.9	<2.2	<2.2	<2.2	<2.0	80	200/20
2-Methylnaphthalene	<1	<1	<2.0	<1.9	<2.2	<2.2	<2.2	<2.0	55	200/20
Naphthalene	<1	<1	<2.0	<1.9	<2.2	<2.2	<2.2	<2.0	50	200/20
Phenanthrene	<1	<1	<2.0	NA	<2.2	NA	<2.2	NA	None	2100/210
Volatile Organic Compounds (USEPA Method 8260B) (µg/L)										
1,1-Dichloroethane	<1	<1	NA	NA	NA	NA	NA	NA	None	700/70
Benzene	0.5J	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	None	100/1
Chlorobenzene	<1	<1	<2.0	NA	<2.0	NA	<2.0	NA	None	1,000/100
Methyl-tert-butyl ether	<10	<10	<2.0	NA	<2.0	NA	<2.0	NA	None	500/50
Trichloroethene	<1	<1	NA	NA	NA	NA	NA	NA	None	300/3
Methylene chloride	<5	3.6J	NA	NA	NA	NA	NA	NA	None	500/5
Ethylbenzene	<1	<1	<2.0	<1.0	<2.0	<1.0	<2.0	<1.0	30	300/3

Notes:
[1]GCTLs based on Chapter 62-770, FAC.
[2]NADSC as promulgated in Chapter 62-770.690.

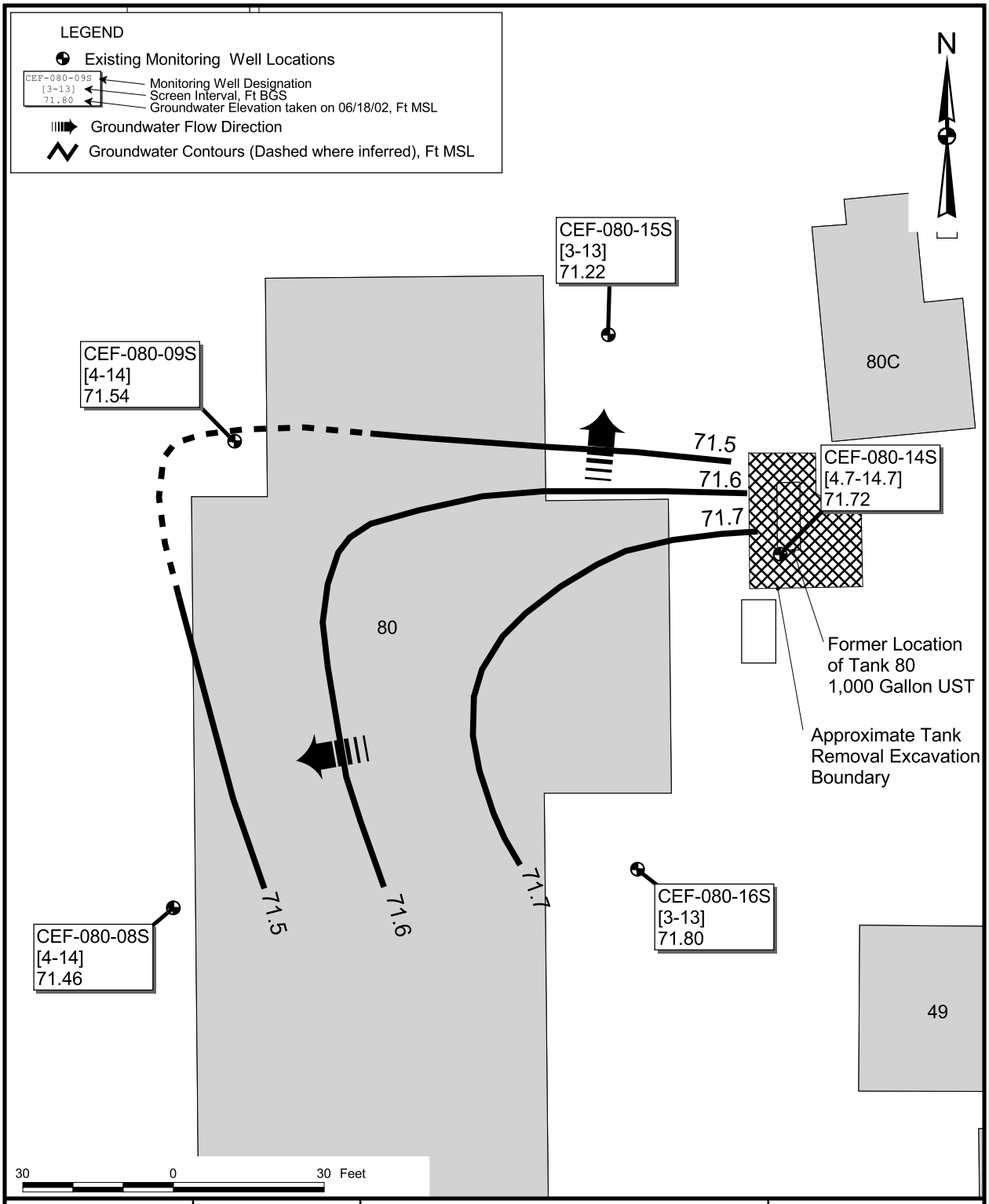
NA = not analyzed
J = estimated
< = less than
Bold indicates values exceeding NADSC or GCTL milestones.

FIGURES



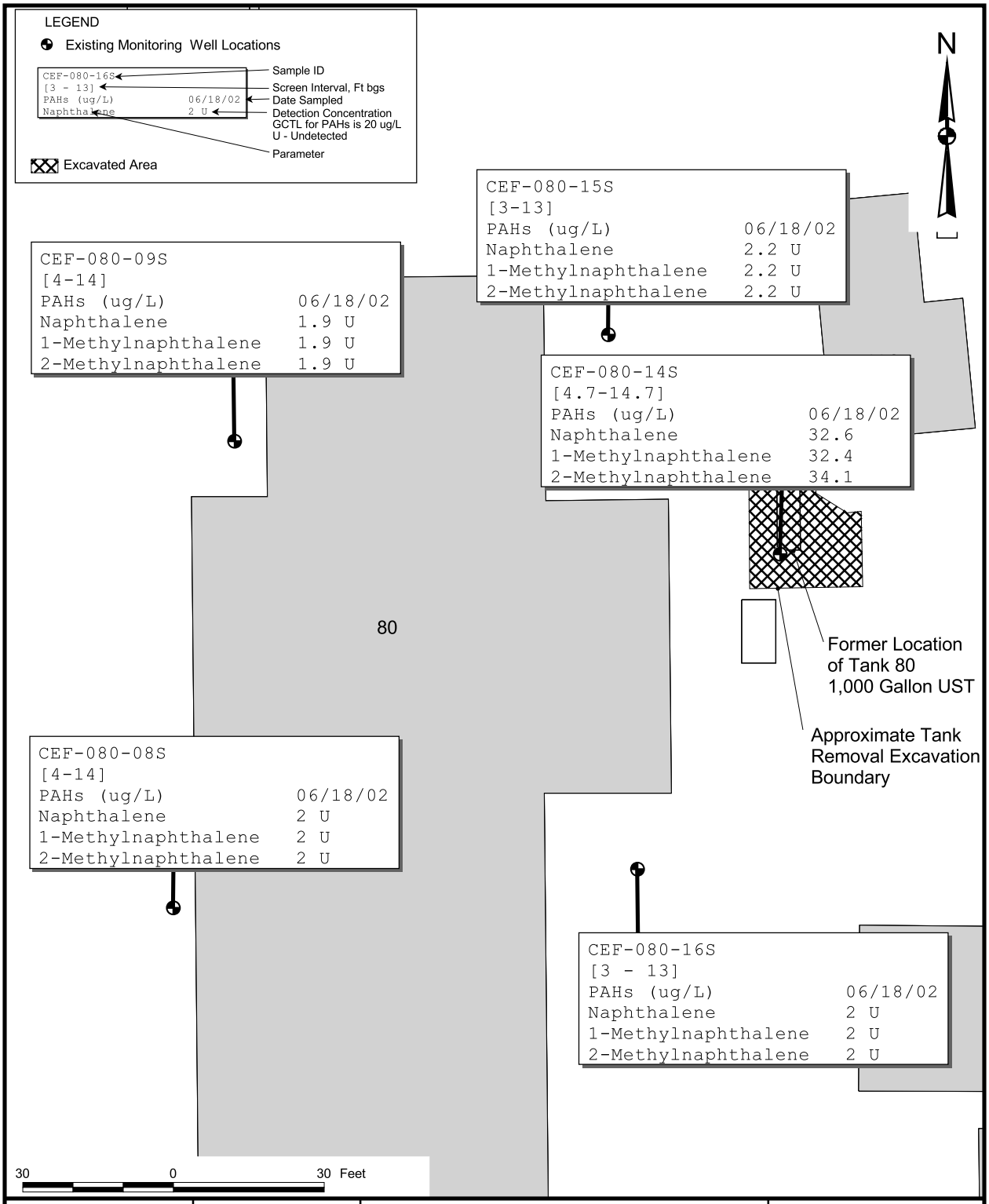
DRAWN BY MJJ	DATE 09/24/02	MONITORING WELL LOCATION MAP BUILDING 80 - TANK 80 GROUNDWATER MONITORING REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 4093
CHECKED BY	DATE		APPROVED BY — DATE —
COST/SCHEDULE-AREA			APPROVED BY — DATE —
SCALE AS NOTED			DRAWING NO. FIGURE 1 / REV 0

P:\GIS\NAS_CecilField\Bldg080-01.apr 24Sept02 MJJ Site Plan Layout



DRAWN BY MJJ	DATE 09/24/02	GROUNDWATER FLOW MAP BUILDING 80 - TANK 80 GROUNDWATER MONITORING REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 4093
CHECKED BY	DATE		APPROVED BY — DATE —
COST/SCHEDULE-AREA			APPROVED BY — DATE —
SCALE AS NOTED			DRAWING NO. FIGURE 2 / REV 0

P:\GIS\NAS_CecilField\Bldg080-01.apr 24Sept02 MJJ PotentiometricLayout



DRAWN BY	DATE			CONTRACT NUMBER
MJJ	09/24/02			4093
CHECKED BY	DATE			APPROVED BY / DATE
				APPROVED BY / DATE
COST/SCHEDULE-AREA				
SCALE				DRAWING NO. / REV
AS NOTED				FIGURE 3 / 0

GROUNDWATER CONCENTRATIONS MAP
BUILDING 80 - TANK 80
GROUNDWATER MONITORING REPORT
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

P:\GIS\NAS_CecilField\Bldg080-01.apr 24Sept02 MJJ TagMapLayout

ATTACHMENT A

FDEP MONA APPROVAL ORDER

Department of Environmental Protection

Jeb Bush
Governor

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

David B. Struhs
Secretary

September 30, 1999

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Commanding Officer
Mr. Bryan Kizer, Code 1842
SOUTHNAVFACENGCOM
Post Office Box 190010
North Charleston, South Carolina 29419-0068

Subject: Natural Attenuation Monitoring Plan Approval Order
Facility 80, Tank 80
Naval Air Station Cecil Field, Florida

Dear Mr. Kizer:

The Bureau of Waste Cleanup has completed the review of the Site Assessment Report Addendum and Natural Attenuation Monitoring Plan dated June 1999 (received July 6, 1999), 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.

Monitoring Wells	Contaminants of Concern	Frequency	Duration
MW-80-8S, MW-80-9S, and MW-80-14S	Ethylbenzene, Naphthalene, 1-Methylnapthalene, 2-Methylnapthalene, and Benzo(a)pyrene	Semi-annual	One Year

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.

Contaminated wells:
MW-80-14S: 300 µg/l Ethylbenzene; 200 µg/l 1- Methylnapthalene, 200 µg/l 2-Methylnapthalene, 200 µg/l Naphthalene, and 20 µg/l Benzo(a)pyrene.

Perimeter wells :
MW-80-14S and MW-80-14S: 30 µg/l Ethylbenzene; 20 µg/l 1- Methylnapthalene, 20 µg/l 2-Methylnapthalene, 20 µg/l Naphthalene, and .2 µg/l Benzo(a)pyrene.

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:

Ethylbenzene	MW-80-14S
End of year 1	35 µg/l
End of year 2	30 µg/l
End of year 3	20 µg/l
End of year 3	<20 µg/l
End of year 3	<20 µg/l

Naphthalene	MW-80-14S
End of year 1	60 µg/l
End of year 2	50 µg/l
End of year 3	40 µg/l
End of year 4	30 µg/l
End of year 5	<20 µg/l

1-Methyl Naphthalene	MW-80-14S
End of year 1	100 µg/l
End of year 2	80 µg/l
End of year 3	60 µg/l
End of year 4	40 µg/l
End of year 5	<20 µg/l

2-Methyl Naphthalene	MW-80-14S
End of year 1	70 µg/l
End of year 2	55 µg/l
End of year 3	35 µg/l
End of year 4	25 µg/l
End of year 5	<20 µg/l

Benzo(a)pyrene	MW-80-14S
End of year 1	0.25 µg/l
End of year 2	0.21 µg/l
End of year 3	<0.20µg/l
End of year 4	<0.20µg/l
End of year 5	<0.20 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 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, Naval Air Station Cecil Field, shall mail a copy of the request to Commanding Officer, Naval Air Station Cecil Field 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 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, Naval Air Station Cecil Field, shall mail a copy of the petition to Commanding Officer, Naval Air

Station Cecil Field 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).

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: Brian Cheary, FDEP Northeast District Office
Norm Hatch, CH2MHILL
Debbie Vaughn-Wright, USEPA – Atlanta
John Flowe, City of Jacksonville
Scott Glass, SOUTHNAVFACENGCOM

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

_____ _____
Clerk Date

ATTACHMENT B

FDEP E-MAIL APPROVING WELL INSTALLATION

October 26, 2001
OFFICIAL CORRESPONDENCE

Commanding Officer
attn: Mr. Nick Ugolini, Code ES242
Southern Division
Naval Facilities Engineering Command
Post Office Box 190010
North Charleston, SC 29419-9010

Dear Mr. Ugolini,

I have reviewed the Groundwater Monitoring Report, 2nd Semi-Annual, 1st Year, Building 80, Tank 80, Naval Air Station Cecil Field, dated September 20, 2001 (received September 21, 2001). I concur with Tetra Tech NUS's recommendation to install wells northwest and southwest of source well CEF-80-14S and continue monitoring for the parameters specified in the September 30, 1999 Natural Attenuation Monitoring Plan Approval Order.

This electronic message is being sent in lieu of regular mail. If you have any questions concerning this review, please contact me at (850)921-9991.

Sincerely,

David P. Grabka
Remedial Project Manager
MS4535
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400
Office: 850.488.3935
Direct: 850.921.9991
FAX: 850.922.4939
david.grabka@dep.state.fl.us

ATTACHMENT C

GROUNDWATER ANALYTICAL REPORT

Sample Summary

Tetra Tech, NUS

Job No: F13604

NAS Cecil Field-CTO-209
Project No: CTO 209-B.80,T.80

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
F13604-1	06/18/02	10:40 RM	06/19/02	AQ	Ground Water	CEF-80-GW-08S-02
F13604-2	06/18/02	10:42 RM	06/19/02	AQ	Ground Water	CEF-80-GW-09S-02
F13604-3	06/18/02	09:30 RM	06/19/02	AQ	Ground Water	CEF-80-GW-14S-02
F13604-4	06/18/02	08:37 RM	06/19/02	AQ	Ground Water	CEF-80-GW-15S-02
F13604-5	06/18/02	09:27 RM	06/19/02	AQ	Ground Water	CEF-80-GW-16S-02
F13604-6	06/18/02	00:00 RM	06/19/02	AQ	Ground Water	CEF-80-GW-DU01-02

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-80-GW-08S-02		
Lab Sample ID:	F13604-1	**Date Sampled:**	06/18/02
Matrix:	AQ - Ground Water	**Date Received:**	06/19/02
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO-209		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B0010309.D	1	06/24/02	JG	n/a	n/a	VB451
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	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	105%		80-120%
2037-26-5	Toluene-D8	95%		80-120%
460-00-4	4-Bromofluorobenzene	97%		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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-80-GW-08S-02		
Lab Sample ID:	F13604-1	**Date Sampled:**	06/18/02
Matrix:	AQ - Ground Water	**Date Received:**	06/19/02
Method:	EPA 8310 SW846 3510C	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO-209		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE008718.D	1	06/27/02	MRE	06/21/02	OP5351	GEE410
Run #2							

	Initial Volume	Final Volume
Run #1	980 ml	1.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	Units	Q
50-32-8	Benzo(a)pyrene	ND	0.20	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	83%		33-141%
92-94-4	p-Terphenyl	92%		31-122%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-80-GW-09S-02		
Lab Sample ID:	F13604-2	**Date Sampled:**	06/18/02
Matrix:	AQ - Ground Water	**Date Received:**	06/19/02
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO-209		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B0010327.D	1	06/25/02	JG	n/a	n/a	VB452
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	108%		80-120%
2037-26-5	Toluene-D8	96%		80-120%
460-00-4	4-Bromofluorobenzene	95%		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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-80-GW-09S-02		
Lab Sample ID:	F13604-2	**Date Sampled:**	06/18/02
Matrix:	AQ - Ground Water	**Date Received:**	06/19/02
Method:	EPA 8310 SW846 3510C	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO-209		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE008719.D	1	06/27/02	MRE	06/21/02	OP5351	GEE410
Run #2							

	Initial Volume	Final Volume
Run #1	1030 ml	1.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	Units	Q
50-32-8	Benzo(a)pyrene	ND	0.19	ug/l	
91-20-3	Naphthalene	ND	1.9	ug/l	
90-12-0	1-Methylnaphthalene	ND	1.9	ug/l	
91-57-6	2-Methylnaphthalene	ND	1.9	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	74%		33-141%
92-94-4	p-Terphenyl	75%		31-122%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-80-GW-14S-02		
Lab Sample ID:	F13604-3	**Date Sampled:**	06/18/02
Matrix:	AQ - Ground Water	**Date Received:**	06/19/02
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO-209		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B0010328.D	1	06/25/02	JG	n/a	n/a	VB452
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	107%		80-120%
2037-26-5	Toluene-D8	94%		80-120%
460-00-4	4-Bromofluorobenzene	92%		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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-80-GW-14S-02		
Lab Sample ID:	F13604-3	**Date Sampled:**	06/18/02
Matrix:	AQ - Ground Water	**Date Received:**	06/19/02
Method:	EPA 8310 SW846 3510C	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO-209		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	EE008722.D	1	06/27/02	MRE	06/21/02	OP5351	GEE410
Run #2							

	Initial Volume	Final Volume
Run #1	980 ml	1.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	Units	Q
50-32-8	Benzo(a)pyrene	ND	0.20	ug/l	
91-20-3	Naphthalene	32.6	2.0	ug/l	
90-12-0	1-Methylnaphthalene	32.4	2.0	ug/l	
91-57-6	2-Methylnaphthalene	34.1	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	85%		33-141%
92-94-4	p-Terphenyl	80%		31-122%

(a) All hits confirmed by spectral match using a diode array detector.

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-80-GW-15S-02		
Lab Sample ID:	F13604-4	**Date Sampled:**	06/18/02
Matrix:	AQ - Ground Water	**Date Received:**	06/19/02
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO-209		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B0010311.D	1	06/24/02	JG	n/a	n/a	VB451
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	107%		80-120%
2037-26-5	Toluene-D8	95%		80-120%
460-00-4	4-Bromofluorobenzene	97%		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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-80-GW-15S-02		
Lab Sample ID:	F13604-4	**Date Sampled:**	06/18/02
Matrix:	AQ - Ground Water	**Date Received:**	06/19/02
Method:	EPA 8310 SW846 3510C	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO-209		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE008723.D	1	06/27/02	MRE	06/21/02	OP5351	GEE410
Run #2							

	Initial Volume	Final Volume
Run #1	920 ml	1.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	Units	Q
50-32-8	Benzo(a)pyrene	ND	0.22	ug/l	
91-20-3	Naphthalene	ND	2.2	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.2	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.2	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	55%		33-141%
92-94-4	p-Terphenyl	84%		31-122%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-80-GW-16S-02		
Lab Sample ID:	F13604-5	**Date Sampled:**	06/18/02
Matrix:	AQ - Ground Water	**Date Received:**	06/19/02
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO-209		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B0010329.D	1	06/25/02	JG	n/a	n/a	VB452
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	106%		80-120%
2037-26-5	Toluene-D8	94%		80-120%
460-00-4	4-Bromofluorobenzene	95%		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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-80-GW-16S-02		
Lab Sample ID:	F13604-5	**Date Sampled:**	06/18/02
Matrix:	AQ - Ground Water	**Date Received:**	06/19/02
Method:	EPA 8310 SW846 3510C	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO-209		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE008724.D	1	06/27/02	MRE	06/21/02	OP5351	GEE410
Run #2							

	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	Units	Q
50-32-8	Benzo(a)pyrene	ND	0.20	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	70%		33-141%
92-94-4	p-Terphenyl	85%		31-122%

020

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-80-GW-DU01-02		
Lab Sample ID:	F13604-6	**Date Sampled:**	06/18/02
Matrix:	AQ - Ground Water	**Date Received:**	06/19/02
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO-209		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B0010330.D	1	06/25/02	JG	n/a	n/a	VB452
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	106%		80-120%
2037-26-5	Toluene-D8	95%		80-120%
460-00-4	4-Bromofluorobenzene	95%		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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-80-GW-DU01-02		
Lab Sample ID:	F13604-6	**Date Sampled:**	06/18/02
Matrix:	AQ - Ground Water	**Date Received:**	06/19/02
Method:	EPA 8310 SW846 3510C	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO-209		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE008771.D	1	06/28/02	MRE	06/21/02	OP5351	GEE411
Run #2							

	Initial Volume	Final Volume
Run #1	940 ml	1.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	Units	Q
50-32-8	Benzo(a)pyrene	ND	0.21	ug/l	
91-20-3	Naphthalene	ND	2.1	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.1	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.1	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	73%		33-141%
92-94-4	p-Terphenyl	84%		31-122%

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. NAS CECIL FIELD CHAIN OF CUSTODY | NUMBER 80 - 061802 | PAGE 1 OF 1

PROJECT NO: N4093	SITE NAME: B-80, T.80	PROJECT MANAGER AND PHONE NUMBER: PAUL CALLIGAN 813 806 0202	LABORATORY NAME AND CONTACT: ACCUTEST Sue Ball
SAMPLERS (SIGNATURE): [signature]		FIELD OPERATIONS LEADER AND PHONE NUMBER: MELV DARE 914 281 0400	ADDRESS: 4405 Vineland Rd C-15
		CARRIER/WAYBILL NUMBER: Fedex	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 G
PRESERVATIVE USED: HCL None

DATE YEAR 2002	TIME	SAMPLE ID	MATRIX	GRAB (G) COMP (C)	No. OF CONTAINERS	TYPE OF ANALYSIS: BTEX SW846 8260B	Select PAHS + SW846 8310							COMMENTS
6/18	1040	CEF.80.GW.085.02	GW	6	5	3	2							Cool to 4°c
6/18	1042	CEF.80.GW.095.02	GW	6	15	9	6							
6/18	0930	CEF.80.GW.145.02	GW	6	5	3	2							N4093 - P2178 (SS)
6/18	0837	CEF.80.GW.155.02	GW	6	5	3	2							
6/18	0927	CEF.80.GW.165.02	GW	6	5	3	2							
6/18	0000	CEF.80.GW.DU01.02	GW	6	5	3	2							* Naphthalene
														1-methyl Naphthalene
														2-methyl naphthalene
														Benzo(a) pyrene

1. RELINQUISHED BY [signature]	DATE 6/18/02	TIME 1600	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

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

3/99
FORM NO. TtNUS-001