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NAS CECIL FIELD, FL
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SECOND SEMI-ANNUAL FOURTH YEAR GROUNDWATER MONITORING LETTER REPORT
FOR BUILDING 502 TANK 502 NAS CECIL FIELD FL
6/24/2004
TETRA TECH NUS INC



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June 24, 2004

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 III Contract Number N62467-94-D-0888
Contract Task Order Number 0209

Subject: Groundwater Monitoring Report
2nd Semi-Annual, 4th Year (January 2004)
Building 502, Tank 502
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 Building 502, Tank 502. A living compact disk (CD) for CTO 209 is also included.

This groundwater monitoring report was prepared for the United States Navy Southern Division, Naval Facilities Engineering Command (NAVFAC EFD SOUTH) under the Comprehensive Long-term Environmental Action Navy (CLEAN) III Contract Number N62467-94-D-0888. The objective of this task is to monitor groundwater quality at the 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 Approval Order (NAMPAO) issued by the Florida Department of Environmental Protection (FDEP) on July 13, 1999 (Attachment A) and as modified by subsequent reports [Harding Lawson Associates (HLA), 2000; TtNUS, 2001].

The fieldwork and analytical results of the groundwater sampling conducted at the site in January 2004 are summarized in this report. 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.

SITE BACKGROUND

Tank 502 was formerly a 1000-gallon underground storage tank (UST) located on the western side of Building 502. The UST was removed by Bechtel Environmental, Inc. on April 16, 1997, along with 5 tons of contaminated soil (HLA, 2000). Based on subsequent site investigation results, a monitoring program was approved to sample monitoring wells CEF-502-1S, CEF-502-2S, CEF-502-4S, and CEF-502-5D (FDEP, 1999). Monitoring wells CEF-502-2S and CEF-502-5D were abandoned during the tank removal and were later installed as wells CEF-502-6S and CEF-502-7D, respectively (HLA, 2000). On August 25, 1999, during the first sampling event under the monitoring program, it was discovered that well

were later installed as wells CEF-502-6S and CEF-502-7D, respectively (HLA, 2000). On August 25, 1999, during the first sampling event under the monitoring program, it was discovered that well CEF-502-1S had been abandoned, and well CEF-502-4S could not be sampled due to low water table conditions. HLA conducted the second event on March 13, 2000, and only sampled wells CEF-502-4S, CEF-502-6S, and CEF-502-7D. The summary table of detections from the second HLA report is included as Attachment B. During March and April 2001, TtNUS conducted a supplement site assessment. TtNUS personnel supervised the installation of a replacement well for CEF-502-1S (which is now designated as CEF-502-1SR) and sampled the four wells required in the monitoring order. The Site Assessment Report Addendum (TtNUS, 2001) recommended several modifications including an additional well (CEF-502-8S) and an additional existing sampling location (CEF-502-3S). The recommendations were approved by the FDEP on August 3, 2001, and were implemented during the next semi-annual sampling event held in December 2001.

FIELD OPERATIONS

On January 28, 2004, water level measurements were recorded from each of the monitoring wells prior to sample collection. The depth to water ranged from 7.07 feet (ft) below top-of-casing (btoc) (CEF-502-3S) to 8.36 ft btoc (CEF-502-1SR). The depth-to-water measurements, along with top of casing elevations, were used to calculate groundwater elevations.

On January 28 and 29, 2004, groundwater samples were collected from five shallow monitoring wells (CEF-502-1SR, CEF-502-3S, CEF-502-4S, CEF-502-6S, and CEF-502-8S) and one deep monitoring well (CEF-502-7D). Following collection, the samples were placed on ice and subsequently shipped under chain-of-custody to Accutest Laboratory in Orlando, Florida. The laboratory analyzed the samples for volatile organic compounds (VOCs) using United States Environmental Protection Agency (USEPA) Method SW846 8260B, polynuclear aromatic hydrocarbons (PAHs) using USEPA Method SW846 8310, and total recoverable petroleum hydrocarbons (TRPH) using Florida Petroleum Range Organics (FL-PRO). The reported detection limits for these methods met the requirements for the similar methods recommended in the NAMPAO.

RESULTS

Groundwater elevation data from the January 2004 event and the previous sampling events are shown on Table 1. The groundwater flow direction with elevation data for January 2004 is shown on Figure 2. Based on the data, the inferred direction of groundwater flow has not changed since June 2002 and continues to flow to the south, southwest.

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 for naphthalene compounds and TRPH are illustrated on Figure 3. The concentrations of naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene reported in monitoring well CEF-502-1SR exceeded respective GCTLs during the sampling event. The concentrations of these COCs have exceeded the GCTLs during all of the previous sampling events with the exception of the December 2002 sampling event. The TRPH concentration in monitoring well CEF-502-1SR has slightly decreased since the previous sampling event; however, still exceeds the GCTL. The concentrations of COCs in the other monitoring wells were below their respective GCTLs during the January 2004 sampling event. A copy of the laboratory report for the January 2004 sampling event is provided as Attachment C.

CONCLUSIONS AND RECOMMENDATIONS

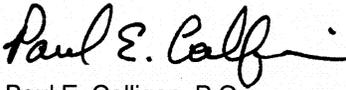
A comparison of the results of the January 2004 sampling event with the last four events indicates that naphthalene and TRPH concentrations continue to decrease, but are still above the respective GCTLs. The

This event was the final event for the fourth year of the monitoring program. Assuming that the milestone objectives in the NAMPAO for well CEF-502-2S apply to the other source well, CEF-502-1SR, the concentrations of benzene, ethylbenzene, and total xylenes were below their respective milestone objectives for year four. However, the concentrations of naphthalene and TRPH were above the year four milestone objectives.

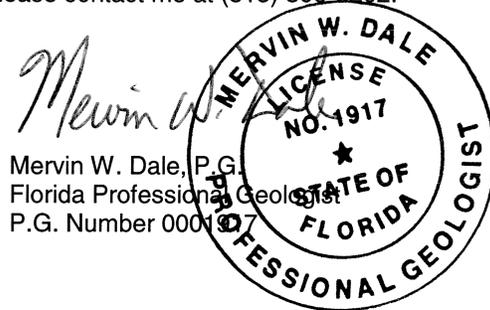
Based on the results of this groundwater monitoring event, and a review of the historical data for this site, TtNUS recommends that the monitoring program be continued as specified in the Natural Attenuation Monitoring Plan Approval Order issued by the FDEP

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

Sincerely,



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



PEC/mwd

Attachments (9)

pc: G. Magwood, NAVFAC EFD SOUTH (CD only)
D. Wroblewski, TtNUS (cover letter only)
M. Perry, TtNUS (unbound and CD)
Project File (bound and CD)

TABLES

Table 1
Groundwater Elevation and Monitoring Well Construction Data

Semi-Annual Groundwater Monitoring Report - January 2004
 Building 502, Tank 502
 Naval Air Station Cecil Field
 Jacksonville, Florida

Well Number	Total Depth (ft bls)	Top of Casing Elevation (ft NAVD)	April 9, 2001		December 11, 2001		March 4, 2002		June 6, 2002	
			Depth to Water (ft btoc)	Water Elevation (ft msl)	Depth to Water (ft btoc)	Water Elevation (ft msl)	Depth to Water (ft btoc)	Water Elevation (ft msl)	Depth to Water (ft btoc)	Water Elevation (ft msl)
CEF-502-1SR	12.48	82.16	6.31	75.85	5.27	76.89	4.65	77.51	8.38	73.78
CEF-502-3S	12.22	80.68	5.03	75.65	3.77	76.91	3.03	77.65	7.14	73.54
CEF-502-4S	12.36	80.68	5.07	75.61	3.73	76.95	3.02	77.66	7.18	73.50
CEF-502-6S	14.80	81.70	5.72	75.98	5.20	76.50	4.64	77.06	7.90	73.80
CEF-502-7D	29.95	81.65	6.00	75.65	4.87	76.78	4.21	77.44	7.84	73.81
CEF-502-8S	13.57	81.75	NA	NM	4.83	76.92	4.14	77.61	8.00	73.75

Well Number	Total Depth (ft bls)	Top of Casing Elevation (ft NAVD)	December 20, 2002		June 24, 2003		January 28, 2004	
			Depth to Water (ft btoc)	Water Elevation (ft msl)	Depth to Water (ft btoc)	Water Elevation (ft msl)	Depth to Water (ft btoc)	Water Elevation (ft msl)
CEF-502-1SR	12.48	82.16	4.77	77.39	5.62	76.54	8.36	73.80
CEF-502-3S	12.22	80.68	3.52	77.16	4.44	76.24	7.07	73.61
CEF-502-4S	12.36	80.68	3.54	77.14	5.45	75.23	7.17	73.51
CEF-502-6S	14.80	81.70	4.29	77.41	5.00	76.70	7.96	73.74
CEF-502-7D	29.95	81.65	4.62	77.03	5.41	76.24	7.98	73.67
CEF-502-8S	13.57	81.75	4.47	77.28	5.30	76.45	8.02	73.73

Notes:

bls = below land surface

msl = mean sea level

NAVD = North American Vertical Datum, 1988

NA = not applicable

NM = not measured

Table 2
Summary of Detections in Groundwater

Semi-Annual Groundwater Monitoring Report - January 2004
Building 502, Tank 502
Naval Air Station Cecil Field
Jacksonville, Florida
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Compounds Detected		GCTL¹	NADSC²	Source Well CEF-502-1SR					
Sample ID: CEF-502-GW-	Date Sampled			1SR-02	1SR-03	1SR-04	1SR-05	1SR-06	1SR-07³
				4/9/2001	12/11/2001	6/6/2002	12/20/2002	6/24/2003	1/28/2004
PAHs (USEPA Method 8270C) (µg/L)									
Acenaphthene	20	200	3.7	5.9	16	<4.3	<4.3	<1.1	
Fluorene	280	280	4.5	5.5	6.4 J	<2.1	4.7 J	5.0	
Phenanthrene	210	2100	1.7	3.3	8.2	<2.1	<4.2	6.1	
1-Methylnaphthalene	20	200	63	93	84	11.5	40.8	49.9	
2-Methylnaphthalene	20	200	85	130	126	16.4	92.0	105	
Naphthalene	20	200	66	96	21.2	8.1	60.7	40.4	
VOCs (USEPA Method 8260B) (µg/L)									
Chlorobenzene	100	NA	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	
Benzene	1	10	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	
Ethylbenzene	30	300	13	5.9	13.5	3.0	5.2	7.9	
Total Xylenes	20	200	4.8	1.2 J	5.5	<3.0	<1.0	1.8 J	
FL-PRO (mg/L)									
TRPH	5	50	24	36	19.8	6.78	10.7	7.42	

See notes at end of table

Table 2
Summary of Detections in Groundwater

Semi-Annual Groundwater Monitoring Report - January 2004
Building 502, Tank 502
Naval Air Station Cecil Field
Jacksonville, Florida
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Compounds Detected	GCTL ¹	NADSC ²	Perimeter Well CEF-502-3S					
			3S-03	3S-03B	3S-04	3S-05	3S-06	3S-07
Sample ID: CEF-502-GW-								
Date Sampled			12/11/2001	3/4/2002	6/6/2002	12/20/2002	6/24/2003	1/28/2004
PAHs (USEPA Method 8270C) (µg/L)								
Acenaphthene	20	200	1.1 J	<1.0	4.1	<4.3	<1.0	<1.0
Fluorene	280	280	0.7 J	<1.0	<2.1	<2.2	<1.0	<1.0
Phenanthrene	210	2100	<1.1	<1.0	<2.1	<2.2	<1.0	<1.0
1-Methylnaphthalene	20	200	28	11	<2.1	<2.2	<0.52	1.2 J
2-Methylnaphthalene	20	200	25	<1.0	<2.1	<2.2	<0.52	<0.51
Naphthalene	20	200	3.4	<1.0	<2.1	<2.2	<0.52	<0.51
VOCs (USEPA Method 8260B) (µg/L)								
Chlorobenzene	100	NA	<1.0	NS	<1.0	<1.0	<0.50	<0.50
Benzene	1	10	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50
Ethylbenzene	30	300	<1.0	NS	<1.0	<1.0	<0.50	<0.50
Total Xylenes	20	200	<3.0	NS	<3.0	<3.0	<1.0	<1.0
FL-PRO (mg/L)								
TRPH	5	50	1.5	NS	0.743	0.200	0.200J	0.617

See notes at end of table

Table 2
Summary of Detections in Groundwater

Semi-Annual Groundwater Monitoring Report - January 2004
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Naval Air Station Cecil Field
Jacksonville, Florida
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Compounds Detected	GCTL ¹	NADSC ²	Perimeter Well CEF-502-4S					
			4S-02	4S-03	4S-04	4S-05	4S-06	4S-07
Sample ID: CEF-502-GW-			4/10/2001	12/11/2001	6/6/2002	12/20/2002	6/24/2003	1/29/2004
Date Sampled								
PAHs (USEPA Method 8270C) (µg/L)								
Acenaphthene	20	200	<1.0	<1.3	4.6	<4.3	<1.0	<1.1
Fluorene	280	280	<1.0	<1.3	<2.3	<2.2	<1.0	<1.1
Phenanthrene	210	2100	<1.0	<1.3	<2.3	<2.2	<1.0	<1.1
1-Methylnaphthalene	20	200	<1.0	1.2 J	1.6 J	<2.2	<0.51	<0.55
2-Methylnaphthalene	20	200	<1.0	1.6	3.7	<2.2	<0.51	1.8 J
Naphthalene	20	200	<1.0	<1.3	<2.3	<2.2	<0.51	<0.55
VOCs (USEPA Method 8260B) (µg/L)								
Chlorobenzene	100	NA	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50
Benzene	1	10	<1.0	<1.0	<1.2	<1.0	<0.50	<0.50
Ethylbenzene	30	300	0.92 J	<1.0	<1.0	<1.0	<0.50	0.76 J
Total Xylenes	20	200	<2.0	<3.0	<3.0	<3.0	<1.0	<1.0
FL-PRO (mg/L)								
TRPH	5	50	1.1	0.46 J	0.581	<0.28	<0.18	0.667

See notes at end of table

Table 2
Summary of Detections in Groundwater

Semi-Annual Groundwater Monitoring Report - January 2004
Building 502, Tank 502
Naval Air Station Cecil Field
Jacksonville, Florida
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Compounds Detected	GCTL ¹	NADSC ²	Source Well CEF-502-6S					
			6S-02	6S-03	6S-04	6S-05	6S-06	6S-07
Sample ID: CEF-502-GW-			4/9/2001	12/11/2001	6/6/2002	12/20/2002	6/24/2003	1/28/2004
Date Sampled								
PAHs (USEPA Method 8270C) (µg/L)								
Acenaphthene	20	200	1.2	3.8	4.2	<4.2	1.4J	<1.1
Fluorene	280	280	0.48 J	2.3	<2.1	<2.1	1.5J	2.1J
Phenanthrene	210	2100	<1.0	0.89 J	<2.1	<2.1	<2.1	<1.1
1-Methylnaphthalene	20	200	7.4	28	<2.1	2.8	<0.52	4.0
2-Methylnaphthalene	20	200	0.96 J	41	<2.1	7.2	5.1	16.4
Naphthalene	20	200	2.0	5.0	<2.1	0.63	<0.52	2.5
VOCs (USEPA Method 8260B) (µg/L)								
Chlorobenzene	100	NA	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50
Benzene	1	10	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50
Ethylbenzene	30	300	2.4	0.54 J	<1.0	0.72J	<0.50	1.2
Total Xylenes	20	200	<2.0	0.43 J	<3.0	<3.0	<1.0	<1.0
FL-PRO (mg/L)								
TRPH	5	50	1.5	1.5	1.02	0.850	0.562	0.815

See notes at end of table

Table 2
Summary of Detections in Groundwater

Semi-Annual Groundwater Monitoring Report - January 2004
Building 502, Tank 502
Naval Air Station Cecil Field
Jacksonville, Florida
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Compounds Detected	GCTL ¹	NADSC ²	Perimeter Well CEF-502-7D					
			7D-02	7D-03	7D-04	7D-05	7D-06	7D-07
Sample ID: CEF-502-GW-			4/9/2001	12/11/2001	6/6/2002	12/20/2002	6/24/2003	1/28/2004
Date Sampled								
PAHs (USEPA Method 8270C) (µg/L)								
Acenaphthene	20	200	<1.0	<1.1	4.2	<4.3	<1.0	<1.1
Fluorene	280	280	<1.0	<1.1	<2.1	<2.2	<1.0	<1.1
Phenanthrene	210	2100	<1.0	<1.1	<2.1	<2.2	<1.0	<1.1
1-Methylnaphthalene	20	200	<1.0	<1.1	<2.1	<2.2	<0.51	<0.53
2-Methylnaphthalene	20	200	<1.0	<1.1	<2.1	<2.2	<0.51	<0.53
Naphthalene	20	200	<1.0	<1.1	<2.1	<2.2	<0.51	<0.53
VOCs (USEPA Method 8260B) (µg/L)								
Chlorobenzene	100	NA	<1.0	0.33 J	<1.0	<1.0	<0.50	<0.50
Benzene	1	10	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50
Ethylbenzene	30	300	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50
Total Xylenes	20	200	<1.0	<3.0	<3.0	<3.0	<1.0	<1.0
FL-PRO (mg/L)								
TRPH	5	50	<1.0	0.23 J	0.26	<0.27	<0.17	<0.27

See notes at end of table

Table 2
Summary of Detections in Groundwater

Semi-Annual Groundwater Monitoring Report - January 2004
Building 502, Tank 502
Naval Air Station Cecil Field
Jacksonville, Florida
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Compounds Detected	GCTL ¹	NADSC ²	Source Well CEF-502-8S				
			8S-03	8S-04	8S-05	8S-06	8S-07
			Date Sampled	12/11/2001	6/6/2002	12/20/2002	6/24/2003
PAHs (USEPA Method 8270C) (µg/L)							
Acenaphthene	20	200	<1.1	4.3	<4.3	<1.1	<1.1
Fluorene	280	280	<1.1	<2.2	<2.2	<1.1	<1.1
Phenanthrene	210	2100	<1.1	<2.2	<2.2	<1.1	<1.1
1-Methylnaphthalene	20	200	<1.1	<2.2	<2.2	<0.56	<0.55
2-Methylnaphthalene	20	200	<1.1	<2.2	<2.2	<0.56	<0.55
Naphthalene	20	200	<1.1	<2.2	<2.2	<0.56	<0.55
VOCs (USEPA Method 8260B) (µg/L)							
Chlorobenzene	100	NA	<1.0	<1.0	<1.0	<0.50	<0.50
Benzene	1	10	<1.0	<1.0	<1.0	<0.50	<0.50
Ethylbenzene	30	300	<1.0	<1.0	<1.0	<0.50	<0.50
Total Xylenes	20	200	<3.0	<3.0	<3.0	<1.0	<1.0
FL-PRO (mg/L)							
TRPH	5	50	0.45 J	0.352	0.364	0.528	0.303

Notes:

¹GCTL based on Chapter 62-770, FAC.

²NADSC as promulgated in Chapter 62-770.690, FAC.

³Duplicate Sample CEF-502-DU01-07 was collected from this well.

Bold values are above GCTLs.

J = estimated

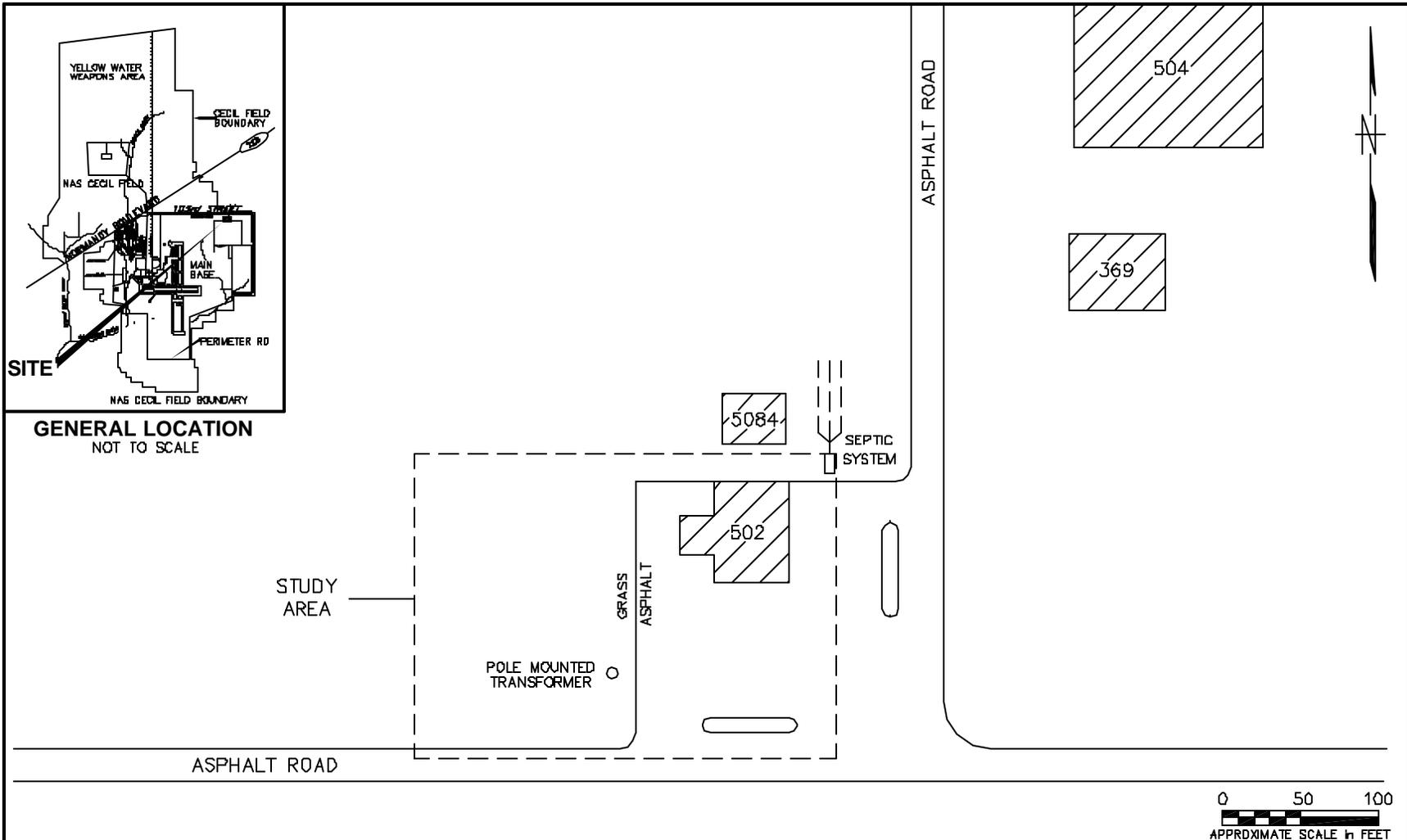
µg/L = micrograms per liter

mg/L = milligrams per liter

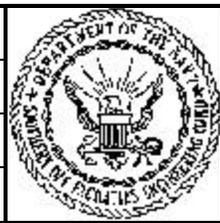
NS = not sampled

< = less than

FIGURES

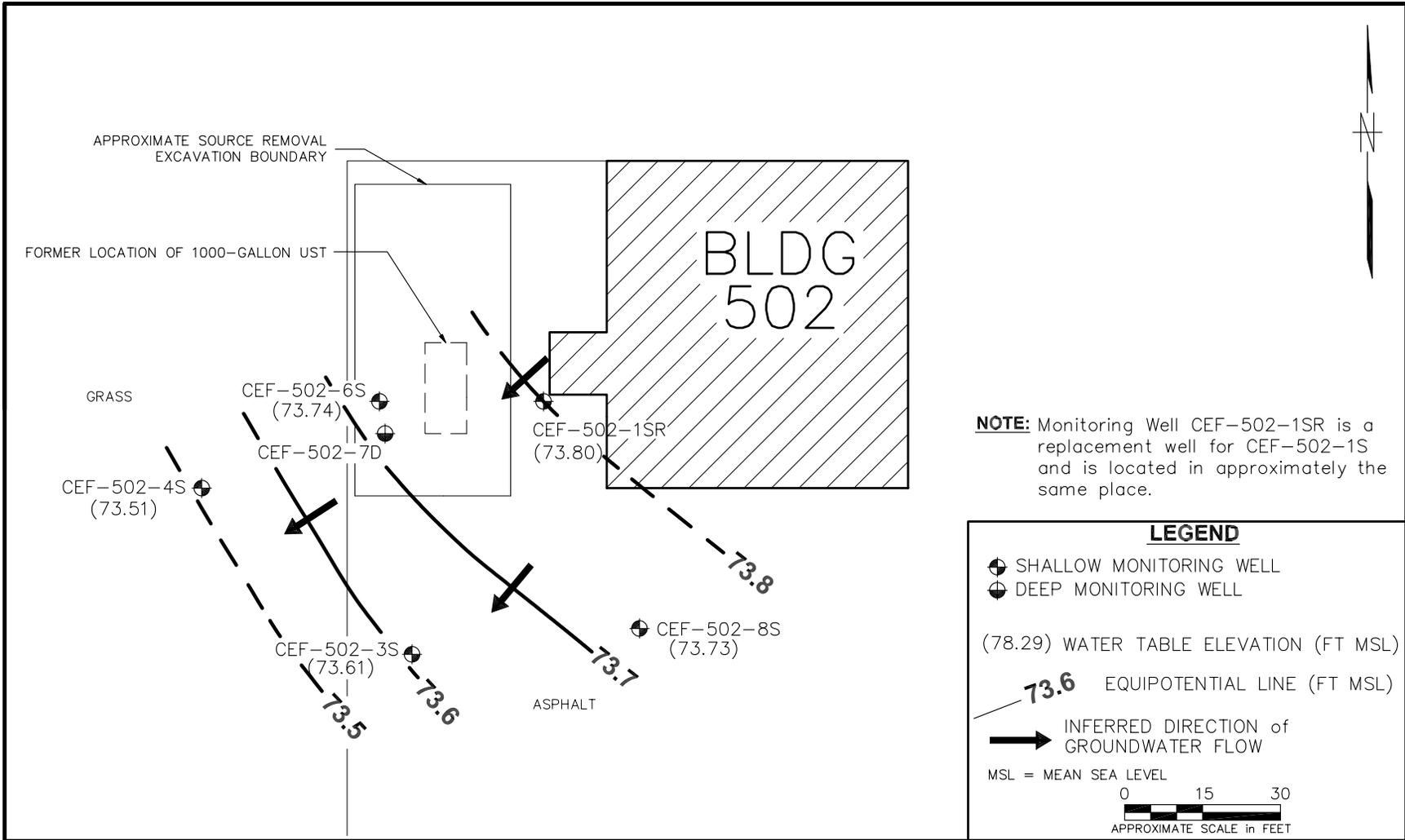


DRAWN BY LLK	DATE 6/13/01
CHECKED BY	DATE
COST/SCHED-AREA	
SCALE AS NOTED	



SITE LOCATION MAP
BUILDING 502
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

CONTRACT NO.	4093	
APPROVED BY	DATE	
APPROVED BY	DATE	
DRAWING NO.	FIGURE 1	REV. 0

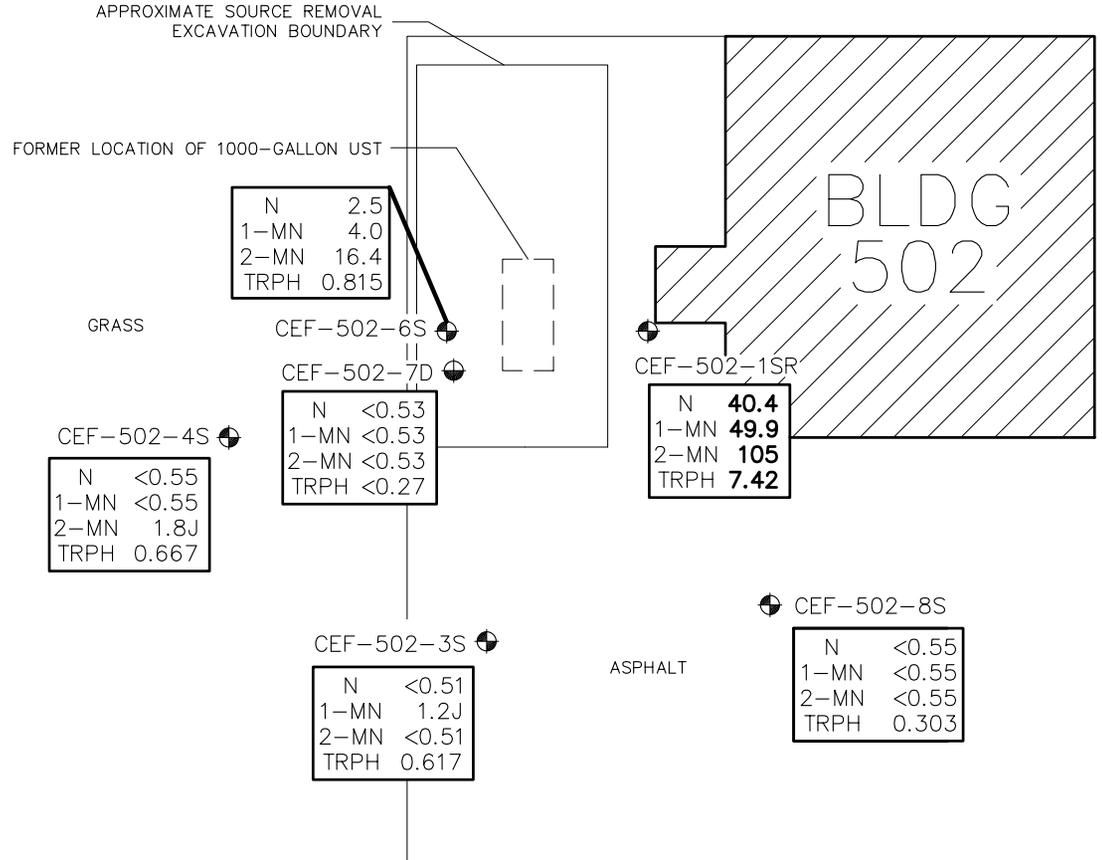


DRAWN BY LLK	DATE 4/27/04
CHECKED BY	DATE
COST/SCHED-AREA	
SCALE AS NOTED	



GROUNDWATER FLOW MAP
 JANUARY 28, 2004
 BUILDING 502
 NAVAL AIR STATION CECIL FIELD
 JACKSONVILLE, FLORIDA

CONTRACT NO.	4093	
APPROVED BY	DATE	
APPROVED BY	DATE	
DRAWING NO.	FIGURE 2	REV. 0



LEGEND

- ⊕ SHALLOW MONITORING WELL
- ⊙ DEEP MONITORING WELL

Constituent N 40.4 Concentration

Bold Values Exceed GCTLs

COC ABBREVIATIONS	GCTL	UNITS
N ▶ Naphthalene	20	µg/L
1-MN ▶ 1-Methylnaphthalene	20	µg/L
2-MN ▶ 2-Methylnaphthalene	20	µg/L
TRPH ▶ Total Recoverable Petroleum Hydrocarbons	5	mg/L

COC Constituent(s) of Concern
 GCTL Groundwater Cleanup Target Level
 µg/L Micrograms per Liter
 mg/L Milligrams per Liter
 UST Underground Storage Tank
 J Estimated Value

APPROXIMATE SCALE in FEET

DRAWN BY LLK	DATE 4/27/04
CHECKED BY	DATE
COST/SCHED-AREA	
SCALE AS NOTED	



COC CONCENTRATIONS IN GROUNDWATER
 JANUARY 28, 2004
 BUILDING 502
 NAVAL AIR STATION CECIL FIELD
 JACKSONVILLE, FLORIDA

CONTRACT NO.	4093	
APPROVED BY	DATE	
APPROVED BY	DATE	
DRAWING NO.	FIGURE 3	REV. 0

ATTACHMENT A

FDEP NAMPAAO



Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Building
2800 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Strubs
Secretary

July 13, 1999

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Commanding Officer
Mr. Bryan Kizer, Code 1842
SOUTHNAVFACENGCOM
Post Office Box 190010
North Charleston, SC 29419-9010

RE: Site Assessment Report and Monitoring Only Proposal for
Facility 502, Tank 502, Naval Air Station Cecil Field,
Florida.

Dear Mr. Kizer:

I have reviewed the Site Assessment Report Revision and
Monitoring Only Proposal for Natural Attenuation dated April 1999
(received April 23, 1999), submitted for this site. Based upon
my review and comments, the enclosed Monitoring Only Plan for
Natural Attenuation was signed by Mr. John M. Ruddell, Director
of the Division of Waste Management.

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

13-Jul-99
Date

CC: Debbie Vaughn-Wright, USEPA
John Flowe, City of Jacksonville
Scott Glass, SOUTHNAVFACENGCOM
Dave Kruzicki, NAS Cecil Field
Eric Blomberg, HLA - Tallahassee

TJB JD JJC RESN EW

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

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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 62-70.690(7)(f), F.A.C.

Contaminated wells:

CEF-502-1S and CEF-502-2S: 100 µg/l Benzene; 200 µg/l Xylene; 300 µg/l Ethylbenzene; 400 µg/l Toluene; 200 µg/l Naphthalene; and 50 mg/l TRPH.

Perimeter wells:

CEF-502-4S and CEF-502-5D: 1 µg/l Benzene; 20 µg/l Xylene; 30 µg/l Ethylbenzene; 40 µg/l Toluene; 20 µg/l Naphthalene; and 5 mg/l TRPH

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>Benzene</u>	<u>MW-CEF- 502-2S</u>
End of year 1	26
End of year 2	13
End of year 3	6
End of year 4	3
End of year 5	<1

<u>Ethylbenzene</u>	<u>MW-CEF- 502-2S</u>
End of year 1	60
End of year 2	50
End of year 3	40
End of year 4	30
End of year 5	<30

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<u>Xylene</u>	<u>MW-CEP-</u> <u>502-2S</u>
End of year 1	150
End of year 2	100
End of year 3	50
End of year 4	20
End of year 5	<20

<u>Naphthalene</u>	<u>MW-CEP-</u> <u>502-2S</u>
End of year 1	150
End of year 2	100
End of year 3	50
End of year 4	20
End of year 5	<20

<u>TRPH</u>	<u>MW-CEP-</u> <u>502-2S</u>
End of year 1	10
End of year 2	8
End of year 3	6
End of year 4	5
End of year 5	<5

If the applicable No Further Action criteria in Rule 62-70.680, F.A.C., are achieved 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 achieved following one year of monitoring, then a report summarizing the monitoring program should be submitted, including a proposal as described in Rule 62-770.690(7)(g).

Persons affected by this Order have the following options:

If you choose to accept the above decision by the Department 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:

ATTACHMENT B

TABLE B-4 FROM HLA JUNE 5, 2000 LETTER REPORT

**Table B-4
Summary of Groundwater Analytical Results**

Building 502, Tank 502
Naval Air Station Cecil Field
Jacksonville, Florida

Compound	Source Area Monitoring Wells						Perimeter Monitoring Wells						FL GCTL	Action Levels ¹		1year Milestone Objectives (Source) ¹	
	CEF-502-1S		CEF-502-2S		CEF-502-6S		CEF-502-4S		CEF-502-5D		CEF-502-7D			Source	Perimeter		
	Mar-97	Sep-99	Jun-98	Sep-99	Sep-99	Mar-00	Jun-98	Mar-00	Jun-98	Mar-00	Sep-99	Mar-00					
Volatile Organic Aromatics																	
Benzene	ND	NS	26	NS	4.8	4.6	ND	1.6	ND	NS	ND	ND	1	100	1	26	
Ethylbenzene	19	NS	68	NS	29	29	ND	3.4	ND	NS	ND	ND	30	300	30	60	
Toluene	ND	NS	14	NS	ND	3.2	ND	ND	ND	NS	ND	ND	40	400	40		
Xylenes	7.9	NS	180	NS	55	45	ND	ND	ND	NS	ND	ND	20	200	20	150	
1,2-Dichlorobenzene	ND	NS	ND	NS	ND	ND	ND	ND	ND	NS	1.1	ND	600				
1,4-Dichlorobenzene	ND	NS	ND	NS	ND	ND	ND	ND	1.3	NS	3.6	2.5	75				
Polynuclear Aromatic Hydrocarbons																	
Naphthalene	160	NS	200	NS	70	80	ND	ND	ND	NS	0.8	ND	20	200	20	150	
1-Methylnaphthalene	150	NS	200	NS	230	110	1.3	ND	ND	NS	3.4	ND	20				
2-Methylnaphthalene	200	NS	260	NS	200	85	ND	ND	ND	NS	3.2	ND	20				
Anthracene	ND	NS	ND	NS	2	ND	ND	ND	ND	NS	ND	ND					
Fluoranthene	ND	NS	8.3	NS	ND	ND	ND	ND	ND	NS	0.23	ND	280				
Fluorene	ND	NS	ND	NS	11	3.1	ND	ND	ND	NS	ND	ND	280				
Total Recoverable Petroleum Hydrocarbons																	
TRPH	7.5	NS	1.3	NS	2.3	1.1	ND	ND	ND	NS	ND	ND	5	50	5	10	
Notes:																	
VOC and PAH concentrations are in micrograms per liter. TRPH concentrations are in milligrams per liter																	
¹ As specified in the Monitoring Only Plan Approval Order (FDEP, July 1999)																	
Only detected compounds, and compounds identified as contaminants of concern by FDEP are listed.																	
GCTL= groundwater cleanup target level																	
ND=not detected																	
NS=not sampled (Monitoring wells CEF-502-2S and CEF-502-5D were replaced by monitoring wells CEF-502-6S and CEF-502-7D. Monitoring well CEF-502-4S has very slow recharge)																	
Results for current sampling event are shaded																	

ATTACHMENT C

GROUNDWATER ANALYTICAL REPORT – January 2004



Southeast

06/23/04

Technical Report for

Tetra Tech, NUS

NAS Cecil Field-CTO-209

N4093 WR413(SS) CTO 209 BLDG 502, Tank 502

Accutest Job Number: F21862

Sampling Date: 01/28/04

Report to:

Tetra Tech, NUS

dalem@ttnus.com

ATTN: Merv Dale

Total number of pages in report: 25



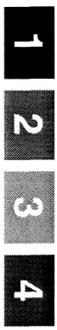
Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Harry Behzadi
Harry Behzadi, Ph.D.
Laboratory Director

Certifications: FL (DOH E83510), NC (573), NJ (FL002), MA (FL946), IA (366), LA (03051), KS (E-10327), SC, AK
This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.

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Sample Summary

Tetra Tech, NUS

Job No: F21862

NAS Cecil Field-CTO-209

Project No: N4093 WR413(SS) CTO 209 BLDG 502, Tank 502

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
F21862-1	01/28/04	09:35 MD	01/28/04	AQ	Ground Water	CEF-502-GW-6S-07
F21862-2	01/28/04	10:10 MD	01/28/04	AQ	Ground Water	CEF-502-GW-8S-07
F21862-3	01/28/04	10:15 MD	01/28/04	AQ	Ground Water	CEF-502-GW-3S-07
F21862-4	01/28/04	10:45 MD	01/28/04	AQ	Ground Water	CEF-502-GW-7D-07
F21862-5	01/28/04	11:20 MD	01/28/04	AQ	Ground Water	CEF-502-GW-1SR-07
F21862-6	01/28/04	00:00 MD	01/28/04	AQ	Ground Water	CEF-502-GW-DU01-07



**Accutest Laboratories Southeast, Inc.
Analytical Narrative**

Client: Tetra Tech, NUS
Site: NAS Cecil Field- CTO 209
Report Date: February 16, 2004
Job Number: F21862

6 samples were collected on January 28, 2004 and received on January 28, 2004. Samples were properly cooled, preserved and intact. A listing of the Laboratory Sample ID, Client Sample ID, and dates of collection are presented in the Results Summary section of this report. **Sample CEF-199-GW-01-04-DUP was received but was not noted on the chain of custody. Per Merv Dale this sample was to be logged in. This extra sample was logged in per the sample bottles received.**

All method specified holding times, calibrations and quality control performance criteria were met, with the following notes.

PAHs, SW846 8310:

- Sample CEF-502-GW-DU01-07 (F21862-6) had one surrogate recovery above acceptance limits in the straight run due to matrix interference. Data has been footnoted accordingly.

Accutest Laboratories Southeast, Inc. certifies that this report meets the project requirements for analytical data produced for the samples as received at the Accutest Laboratories Southeast location as stated in the Analytical Task Order and the COC. In addition, Accutest Laboratories Southeast, Inc. certifies that data as reported meet the Data Quality Objectives for precision, accuracy and completeness as specified in the Accutest Laboratories Southeast, Inc. Quality Manual for other that conditions detailed above. ALSE routinely reports Organic target analytes down to method detection limit. These positive results are flagged with a "J" qualifier. It is recommended by Accutest Laboratories Southeast, Inc. that this report is to be used in its entirety. Accutest Laboratories Southeast, Inc. is not responsible for any assumptions of data quality if partial data packages are used to interpret data. The Accutest Laboratories Southeast, Inc. Laboratory Director as verified by the signature on the front page has authorized release of this report.

Narrative prepared by:

Sue O. Bell, Project Manager (signature on file)

Date: February 16, 2004

Report of Analysis

3.1
3

Client Sample ID: CEF-502-GW-6S-07	Date Sampled: 01/28/04
Lab Sample ID: F21862-1	Date Received: 01/28/04
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: NAS Cecil Field-CTO-209	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G0026333.D	1	02/06/04	JG	n/a	n/a	VG972
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	1.2	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		86-115%
17060-07-0	1,2-Dichloroethane D4	100%		73-126%
2037-26-5	Toluene-D8	92%		86-112%
460-00-4	4-Bromofluorobenzene	92%		83-119%

ND = Not detected MDL - Method Detection Limit
 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

3.1
3

Client Sample ID: CEF-502-GW-6S-07	Date Sampled: 01/28/04
Lab Sample ID: F21862-1	Date Received: 01/28/04
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 8310 SW846 3510C	
Project: NAS Cecil Field-CTO-209	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	AA019708.D	1	02/11/04	MRE	02/02/04	OP9673	GAA940
Run #2							

Run #	Initial Volume	Final Volume
Run #1	930 ml	1.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.3	1.1	ug/l	
208-96-8	Acenaphthylene	ND	4.3	1.1	ug/l	
120-12-7	Anthracene	ND	2.2	1.1	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.22	0.11	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.22	0.11	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.22	0.11	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.22	0.11	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.22	0.11	ug/l	
218-01-9	Chrysene	ND	2.2	1.1	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.22	0.11	ug/l	
206-44-0	Fluoranthene	ND	2.2	0.54	ug/l	
86-73-7	Fluorene	2.1	2.2	1.1	ug/l	J
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.22	0.11	ug/l	
91-20-3	Naphthalene	2.5	2.2	0.54	ug/l	
90-12-0	1-Methylnaphthalene	4.0	2.2	0.54	ug/l	
91-57-6	2-Methylnaphthalene	16.4	2.2	0.54	ug/l	
85-01-8	Phenanthrene	ND	2.2	1.1	ug/l	
129-00-0	Pyrene	ND	2.2	0.54	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	99%		36-114%
92-94-4	p-Terphenyl	76%		31-121%

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

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

3.1
3

Client Sample ID: CEF-502-GW-6S-07	Date Sampled: 01/28/04
Lab Sample ID: F21862-1	Date Received: 01/28/04
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: FLORIDA-PRO SW846 3510C	
Project: NAS Cecil Field-CTO-209	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP35020.D	1	02/02/04	SM	01/30/04	OP9662	GOP1155
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	0.815	0.26	0.17	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	93%		50-125%		

ND = Not detected MDL - Method Detection Limit
 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

3.2
3

Client Sample ID: CEF-502-GW-8S-07	Date Sampled: 01/28/04
Lab Sample ID: F21862-2	Date Received: 01/28/04
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: NAS Cecil Field-CTO-209	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G0026336.D	1	02/06/04	JG	n/a	n/a	VG972
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		86-115%
17060-07-0	1,2-Dichloroethane-D4	99%		73-126%
2037-26-5	Toluene-D8	92%		86-112%
460-00-4	4-Bromofluorobenzene	94%		83-119%

ND = Not detected MDL - Method Detection Limit
 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

Page 1 of 1

3.2

3

Client Sample ID: CEF-502-GW-8S-07	Date Sampled: 01/28/04
Lab Sample ID: F21862-2	Date Received: 01/28/04
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 8310 SW846 3510C	
Project: NAS Cecil Field-CTO-209	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA019686.D	1	02/10/04	MRE	02/02/04	OP9673	GAA939
Run #2							

Run #	Initial Volume	Final Volume
Run #1	910 ml	1.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.4	1.1	ug/l	
208-96-8	Acenaphthylene	ND	4.4	1.1	ug/l	
120-12-7	Anthracene	ND	2.2	1.1	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.22	0.11	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.22	0.11	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.22	0.11	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.22	0.11	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.22	0.11	ug/l	
218-01-9	Chrysene	ND	2.2	1.1	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.22	0.11	ug/l	
206-44-0	Fluoranthene	ND	2.2	0.55	ug/l	
86-73-7	Fluorene	ND	2.2	1.1	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.22	0.11	ug/l	
91-20-3	Naphthalene	ND	2.2	0.55	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.2	0.55	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.2	0.55	ug/l	
85-01-8	Phenanthrene	ND	2.2	1.1	ug/l	
129-00-0	Pyrene	ND	2.2	0.55	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	89%		36-114%
92-94-4	p-Terphenyl	88%		31-121%

ND = Not detected MDL - Method Detection Limit
 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

3.2
3

Client Sample ID: CEF-502-GW-8S-07 Lab Sample ID: F21862-2 Matrix: AQ - Ground Water Method: FLORIDA-PRO SW846 3510C Project: NAS Cecil Field-CTO-209	Date Sampled: 01/28/04 Date Received: 01/28/04 Percent Solids: n/a
---	--

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP35024.D	1	02/02/04	SM	01/30/04	OP9662	GOP1155
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	0.303	0.27	0.18	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	98%		50-125%		

ND = Not detected MDL - Method Detection Limit
 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-502-GW-3S-07	Date Sampled: 01/28/04
Lab Sample ID: F21862-3	Date Received: 01/28/04
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: NAS Cecil Field-CTO-209	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G0026337.D	1	02/06/04	JG	n/a	n/a	VG972
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		86-115%
17060-07-0	1,2-Dichloroethane-D4	100%		73-126%
2037-26-5	Toluene-D8	94%		86-112%
460-00-4	4-Bromofluorobenzene	95%		83-119%

ND = Not detected MDL - Method Detection Limit
 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-502-GW-3S-07	Date Sampled: 01/28/04
Lab Sample ID: F21862-3	Date Received: 01/28/04
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 8310 SW846 3510C	
Project: NAS Cecil Field-CTO-209	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	AA019687.D	1	02/10/04	MRE	02/02/04	OP9673	GAA939
Run #2							

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

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.1	1.0	ug/l	
208-96-8	Acenaphthylene	ND	4.1	1.0	ug/l	
120-12-7	Anthracene	ND	2.0	1.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.20	0.10	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.20	0.10	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.20	0.10	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.20	0.10	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.20	0.10	ug/l	
218-01-9	Chrysene	ND	2.0	1.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.20	0.10	ug/l	
206-44-0	Fluoranthene	ND	2.0	0.51	ug/l	
86-73-7	Fluorene	ND	2.0	1.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.20	0.10	ug/l	
91-20-3	Naphthalene	ND	2.0	0.51	ug/l	
90-12-0	1-Methylnaphthalene	1.2	2.0	0.51	ug/l	J
91-57-6	2-Methylnaphthalene	ND	2.0	0.51	ug/l	
85-01-8	Phenanthrene	ND	2.0	1.0	ug/l	
129-00-0	Pyrene	ND	2.0	0.51	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	94%		36-114%
92-94-4	p-Terphenyl	90%		31-121%

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

ND = Not detected MDL - Method Detection Limit
 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

3.3
3

Client Sample ID: CEF-502-GW-3S-07 Lab Sample ID: F21862-3 Matrix: AQ - Ground Water Method: FLORIDA-PRO SW846 3510C Project: NAS Cecil Field-CTO-209	Date Sampled: 01/28/04 Date Received: 01/28/04 Percent Solids: n/a
---	--

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP35025.D	1	02/02/04	SM	01/30/04	OP9662	GOP1155
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	0.617	0.25	0.17	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	95%		50-125%		

ND = Not detected MDL - Method Detection Limit
 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-502-GW-7D-07	Date Sampled: 01/28/04
Lab Sample ID: F21862-4	Date Received: 01/28/04
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: NAS Cecil Field-CTO-209	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G0026338.D	1	02/06/04	JG	n/a	n/a	VG972
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	0.59	1.0	0.50	ug/l	J
106-46-7	p-Dichlorobenzene	2.4	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		86-115%
17060-07-0	1,2-Dichloroethane-D4	105%		73-126%
2037-26-5	Toluene-D8	94%		86-112%
460-00-4	4-Bromofluorobenzene	96%		83-119%

ND = Not detected MDL - Method Detection Limit
 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-502-GW-7D-07	Date Sampled: 01/28/04
Lab Sample ID: F21862-4	Date Received: 01/28/04
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 8310 SW846 3510C	
Project: NAS Cecil Field-CTO-209	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA019688.D	1	02/10/04	MRE	02/02/04	OP9673	GAA939
Run #2							

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

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.3	1.1	ug/l	
208-96-8	Acenaphthylene	ND	4.3	1.1	ug/l	
120-12-7	Anthracene	ND	2.1	1.1	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.21	0.11	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.21	0.11	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.21	0.11	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.21	0.11	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.21	0.11	ug/l	
218-01-9	Chrysene	ND	2.1	1.1	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.21	0.11	ug/l	
206-44-0	Fluoranthene	ND	2.1	0.53	ug/l	
86-73-7	Fluorene	ND	2.1	1.1	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.21	0.11	ug/l	
91-20-3	Naphthalene	ND	2.1	0.53	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.1	0.53	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.1	0.53	ug/l	
85-01-8	Phenanthrene	ND	2.1	1.1	ug/l	
129-00-0	Pyrene	ND	2.1	0.53	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	85%		36-114%
92-94-4	p-Terphenyl	76%		31-121%

ND = Not detected MDL - Method Detection Limit
 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

3.4
3

Client Sample ID: CEF-502-GW-7D-07	Date Sampled: 01/28/04
Lab Sample ID: F21862-4	Date Received: 01/28/04
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: FLORIDA-PRO SW846 3510C	
Project: NAS Cecil Field-CTO-209	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP35026.D	1	02/02/04	SM	01/30/04	OP9662	GOP1155
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	ND	0.27	0.18	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	86%		50-125%		

ND = Not detected MDL - Method Detection Limit
 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

3.5
3

Client Sample ID:	CEF-502-GW-1SR-07	Date Sampled:	01/28/04
Lab Sample ID:	F21862-5	Date Received:	01/28/04
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	NAS Cecil Field-CTO-209		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G0026339.D	1	02/06/04	JG	n/a	n/a	VG972
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	7.9	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.8	3.0	1.0	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		86-115%
17060-07-0	1,2-Dichloroethane-D4	99%		73-126%
2037-26-5	Toluene-D8	94%		86-112%
460-00-4	4-Bromofluorobenzene	94%		83-119%

ND = Not detected MDL - Method Detection Limit
 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

Page 1 of 1

3.5
3

Client Sample ID:	CEF-502-GW-1SR-07	Date Sampled:	01/28/04
Lab Sample ID:	F21862-5	Date Received:	01/28/04
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 8310 SW846 3510C		
Project:	NAS Cecil Field-CTO-209		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA019689.D	1	02/10/04	MRE	02/02/04	OP9673	GAA939
Run #2 ^a	AA019709.D	4	02/11/04	MRE	02/02/04	OP9673	GAA940

Run #	Initial Volume	Final Volume
Run #1	910 ml	1.0 ml
Run #2	910 ml	1.0 ml

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.4	1.1	ug/l	
208-96-8	Acenaphthylene	ND	4.4	1.1	ug/l	
120-12-7	Anthracene	ND	2.2	1.1	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.22	0.11	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.22	0.11	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.22	0.11	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.22	0.11	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.22	0.11	ug/l	
218-01-9	Chrysene	ND	2.2	1.1	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.22	0.11	ug/l	
206-44-0	Fluoranthene	ND	2.2	0.55	ug/l	
86-73-7	Fluorene	5.0	2.2	1.1	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.22	0.11	ug/l	
91-20-3	Naphthalene	40.4 ^b	8.8	2.2	ug/l	
90-12-0	1-Methylnaphthalene	49.9 ^b	8.8	2.2	ug/l	
91-57-6	2-Methylnaphthalene	105 ^b	8.8	2.2	ug/l	
85-01-8	Phenanthrene	6.1	2.2	1.1	ug/l	
129-00-0	Pyrene	ND	2.2	0.55	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	109%	96%	36-114%
92-94-4	p-Terphenyl	70%	64%	31-121%

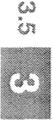
(a) All hits confirmed by spectral match using a diode array detector.

(b) Result is from Run# 2

ND = Not detected MDL - Method Detection Limit
 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-502-GW-1SR-07	Date Sampled: 01/28/04
Lab Sample ID: F21862-5	Date Received: 01/28/04
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: FLORIDA-PRO SW846 3510C	
Project: NAS Cecil Field-CTO-209	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP35050.D	8	02/04/04	SM	01/30/04	OP9662	GOP1157
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	7.42	2.1	1.4	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	112%		50-125%		

ND = Not detected MDL - Method Detection Limit
 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

3.6
3

Client Sample ID:	CEF-502-GW-DU01-07	Date Sampled:	01/28/04
Lab Sample ID:	F21862-6	Date Received:	01/28/04
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	NAS Cecil Field-CTO-209		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G0026340.D	1	02/06/04	JG	n/a	n/a	VG972
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	8.3	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.7	3.0	1.0	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		86-115%
17060-07-0	1,2-Dichloroethane-D4	94%		73-126%
2037-26-5	Toluene-D8	94%		86-112%
460-00-4	4-Bromofluorobenzene	98%		83-119%

ND = Not detected MDL - Method Detection Limit
 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-502-GW-DU01-07	Date Sampled: 01/28/04
Lab Sample ID: F21862-6	Date Received: 01/28/04
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 8310 SW846 3510C	
Project: NAS Cecil Field-CTO-209	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA019690.D	1	02/10/04	MRE	02/02/04	OP9673	GAA939
Run #2 ^a	AA019710.D	4	02/11/04	MRE	02/02/04	OP9673	GAA940

Run #	Initial Volume	Final Volume
Run #1	930 ml	1.0 ml
Run #2	930 ml	1.0 ml

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.3	1.1	ug/l	
208-96-8	Acenaphthylene	ND	4.3	1.1	ug/l	
120-12-7	Anthracene	ND	2.2	1.1	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.22	0.11	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.22	0.11	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.22	0.11	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.22	0.11	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.22	0.11	ug/l	
218-01-9	Chrysene	ND	2.2	1.1	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.22	0.11	ug/l	
206-44-0	Fluoranthene	ND	2.2	0.54	ug/l	
86-73-7	Fluorene	4.5	2.2	1.1	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.22	0.11	ug/l	
91-20-3	Naphthalene	32.8 ^b	8.6	2.2	ug/l	
90-12-0	1-Methylnaphthalene	47.0 ^b	8.6	2.2	ug/l	
91-57-6	2-Methylnaphthalene	98.7 ^b	8.6	2.2	ug/l	
85-01-8	Phenanthrene	6.4	2.2	1.1	ug/l	
129-00-0	Pyrene	ND	2.2	0.54	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	117% ^c	113%	36-114%
92-94-4	p-Terphenyl	83%	78%	31-121%

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

(b) Result is from Run# 2

(c) Outside control limits due to matrix interference.

ND = Not detected MDL - Method Detection Limit
 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

3.6
3

Client Sample ID: CEF-502-GW-DU01-07	Date Sampled: 01/28/04
Lab Sample ID: F21862-6	Date Received: 01/28/04
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: FLORIDA-PRO SW846 3510C	
Project: NAS Cecil Field-CTO-209	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP35051.D	10	02/04/04	SM	01/30/04	OP9662	GOP1157
Run #2							

Run #	Initial Volume	Final Volume
Run #1	910 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	9.23	2.7	1.9	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	138% ^a		50-125%		

(a) Outside control limits due to dilution.

ND = Not detected MDL - Method Detection Limit
 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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



TETRA TECH NUS, INC.

CHAIN OF CUSTODY

NUMBER 502-012804

PAGE 1 OF 1

PROJECT NO: N4093 CTD 209		FACILITY: Bldg. 502, Tank 502		PROJECT MANAGER PAUL CALLIGAN		PHONE NUMBER 883 706 0202		LABORATORY NAME AND CONTACT: ACCUTEST SUE BELL			
SAMPLER(S) SIGNATURE(S) <i>[Signature]</i>		FIELD OPERATIONS LEADER MERY BARR		PHONE NUMBER 904 636 6125		ADDRESS 4405 VINELAND RD. CTS					
M.W. Ade FOR CB, CA, SM		CARRIER/WAYBILL NUMBER LAB Courier				CITY, STATE ORLANDO, FL 32811					
STANDARD TAT <input checked="" type="checkbox"/> RUSH TAT <input type="checkbox"/>		TOP DEPTH (FT)		BOTTOM DEPTH (FT)		MATRIX (GW, SO, SW, SD, QC, ETC.)		COLLECTION METHOD GRAP (G) COMP (C)		CONTAINER TYPE PLASTIC (P) or GLASS (G)	
<input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 72 hr. <input type="checkbox"/> 7 day <input type="checkbox"/> 14 day										PRESERVATIVE USED	
DATE YEAR 2004		TIME		SAMPLE ID		LOCATION ID		TYPE OF ANALYSIS Subst WGS 8240B * HCL G PAMS 8310 * WWS G TPPH P-PRO * WWS G HSON G		COMMENTS	
① 1/28 0935		0935		CEF-502-GW-65-07				GW G 7 3 2 2		Cool to 4°C	
② 1/28 0935		0935		CEF-502-GW-65-07				GW G 14 6 4 4		(EXTRA VOL. FOR MSMSD)	
③ 1/28 1010		1010		CEF-502-GW-85-07				GW G 7 3 2 2		Work Release	
④ 1/28 1015		1015		CEF-502-GW-35-07				GW G 7 3 2 2		N4093-WR4/13(SS)	
⑤ 1/28 1045		1045		CEF-502-GW-70-07				GW G 7 3 2 2			
⑥ 1/28 1120		1120		CEF-502-GW-15R-07				GW G 7 3 2 2		* See work release Attachment A for list of Analytes & methods. * Inlet Volc = BTEXM, chlorobenz., PM-10, D-OCB.	
1. RELINQUISHED BY <i>[Signature]</i>		DATE 1/28/04		TIME 1601		1. RECEIVED BY <i>[Signature]</i>		DATE 1/28/04		TIME 16 01	
2. RELINQUISHED BY <i>[Signature]</i>		DATE 1/28/04		TIME 2010		2. RECEIVED BY <i>[Signature]</i>		DATE 1/28/04		TIME 2010	
3. RELINQUISHED BY		DATE		TIME		3. RECEIVED BY		DATE		TIME	

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY) 4/02R FORM NO. TINUS-001

4.1
4

F21862: Chain of Custody
Page 1 of 2

ACCUTEST LABORATORIES SOUTHEAST SAMPLE RECEIPT CONFIRMATION

Accutest's Job Number: F21862
 Client: Tetra Tech Project: N4093
 Date Received: 1/28/04 Time Received: 2010
 # of Coolers Received: 10 Cooler Temperatures: 1.2, 1.8, 2.4, 2.0, 1.4, 1.6, 0.6
 Delivery Method: FedEx UPS Accutest Courier Greyhound 3.2, 1.2, 3.2 Delivery Other
 Air Bill Number: _____

Cooler Custody Seals Intact ?	<u>Yes</u>	No
Chain of Custody Provided ?	<u>Yes</u>	No
COC Match Bottle Label ID's ?	<u>Yes</u>	No
Sample Labels Present on all bottles ?	<u>Yes</u>	No
All Analyses Marked On COC ?	<u>Yes</u>	No
Are All Bottles Intact ?	<u>Yes</u>	No
Samples Preserved Correctly ?	<u>Yes</u>	No
Correct Number of Containers Used ?	<u>Yes</u>	No
Sufficient Sample Volume ?	<u>Yes</u>	No
Trip Blank Provided ?	Yes	<u>No</u>
Trip Blank on COC ?	Yes	<u>No</u>
Trip Blank Intact ?	Yes	No <u>N/A</u>
Trip Blank Matrix ?	Soil	Water <u>N/A</u>
Number of Encores ?	<u>0</u>	
Number of Soil Field Kits ?	<u>0</u>	

Summary of Comments: We received an extra sample CEF-502-EW-DU01-07 taken on 1/28/04 @ 0000 (3 vials, 4 ampers) made sample #6.

F21862: Chain of Custody
Page 2 of 2

Signature: Murari Dhanraj Date: 1/28/04
 Review Signature: _____

ASBD 12/30/03

4.1
4



06/23/04

Technical Report for

Tetra Tech, NUS

NAS Cecil Field-CTO-209

N4093 WR413(SS) BLDG 502 Tank 502

Accutest Job Number: F21886

Sampling Date: 01/29/04

Report to:

Tetra Tech, NUS

dalem@tnus.com

ATTN: Merv Dale

Total number of pages in report: 10



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Harry Behzadi
Harry Behzadi, Ph.D.
Laboratory Director

Certifications: FL (DOH E83510), NC (573), NJ (FL002), MA (FL946), IA (366), LA (03051), KS (E-10327), SC, AK
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Sample Summary

Tetra Tech, NUS

Job No: F21886

NAS Cecil Field-CTO-209

Project No: N4093 WR413(SS) BLDG 502 Tank 502

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
F21886-1	01/29/04	08:45 SRM	01/30/04	AQ	Ground Water	CEF-502-GW-4S-07

**Accutest Laboratories Southeast, Inc.
Analytical Narrative**

Client: Tetra Tech, NUS
Site: NAS Cecil Field- CTO 209
Report Date: February 16, 2004
Job Number: F21886

1 sample was collected on January 29, 2004 and received on January 30, 2004. Samples were properly cooled, preserved and intact. A listing of the Laboratory Sample ID, Client Sample ID, and dates of collection are presented in the Results Summary section of this report. All method specified holding times, calibrations and quality control performance criteria were met.

Accutest Laboratories Southeast, Inc. certifies that this report meets the project requirements for analytical data produced for the samples as received at the Accutest Laboratories Southeast location as stated in the Analytical Task Order and the COC. In addition, Accutest Laboratories Southeast, Inc. certifies that data as reported meet the Data Quality Objectives for precision, accuracy and completeness as specified in the Accutest Laboratories Southeast, Inc. Quality Manual for other that conditions detailed above. ALSE routinely reports Organic target analytes down to method detection limit. These positive results are flagged with a "J" qualifier. It is recommended by Accutest Laboratories Southeast, Inc. that this report is to be used in its entirety. Accutest Laboratories Southeast, Inc. is not responsible for any assumptions of data quality if partial data packages are used to interpret data. The Accutest Laboratories Southeast, Inc. Laboratory Director as verified by the signature on the front page has authorized release of this report.

Narrative prepared by:

Date: February 16, 2004

Sue O. Bell, Project Manager (signature on file)

Report of Analysis

3.1
3

Client Sample ID: CEF-502-GW-4S-07	Date Sampled: 01/29/04
Lab Sample ID: F21886-1	Date Received: 01/30/04
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: NAS Cecil Field-CTO-209	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0020941.D	1	02/05/04	KW	n/a	n/a	VC908
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	0.76	1.0	0.50	ug/l	J
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	92%		86-115%
17060-07-0	1,2-Dichloroethane-D4	102%		73-126%
2037-26-5	Toluene-D8	108%		86-112%
460-00-4	4-Bromofluorobenzene	101%		83-119%

ND = Not detected MDL - Method Detection Limit
 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

3.1
3

Client Sample ID: CEF-502-GW-4S-07	Date Sampled: 01/29/04
Lab Sample ID: F21886-1	Date Received: 01/30/04
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 8310 SW846 3510C	
Project: NAS Cecil Field-CTO-209	

Run #1 ^a	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	AA019696.D	1	02/10/04	MRE	02/02/04	OP9673	GAA939

Run #1	Initial Volume	Final Volume
Run #2	910 ml	1.0 ml

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.4	1.1	ug/l	
208-96-8	Acenaphthylene	ND	4.4	1.1	ug/l	
120-12-7	Anthracene	ND	2.2	1.1	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.22	0.11	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.22	0.11	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.22	0.11	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.22	0.11	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.22	0.11	ug/l	
218-01-9	Chrysene	ND	2.2	1.1	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.22	0.11	ug/l	
206-44-0	Fluoranthene	ND	2.2	0.55	ug/l	
86-73-7	Fluorene	ND	2.2	1.1	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.22	0.11	ug/l	
91-20-3	Naphthalene	ND	2.2	0.55	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.2	0.55	ug/l	
91-57-6	2-Methylnaphthalene	1.8	2.2	0.55	ug/l	J
85-01-8	Phenanthrene	ND	2.2	1.1	ug/l	
129-00-0	Pyrene	ND	2.2	0.55	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	78%		36-114%
92-94-4	p-Terphenyl	78%		31-121%

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

ND = Not detected MDL - Method Detection Limit
 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

3.1
3

Client Sample ID:	CEF-502-GW-4S-07	Date Sampled:	01/29/04
Lab Sample ID:	F21886-1	Date Received:	01/30/04
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	FLORIDA-PRO SW846 3510C		
Project:	NAS Cecil Field-CTO-209		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP35072.D	1	02/04/04	SM	02/02/04	OP9670	GOP1157
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	0.667	0.27	0.18	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	80%		50-125%		

ND = Not detected MDL - Method Detection Limit
 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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

ACCUTEST LABORATORIES SOUTHEAST SAMPLE RECEIPT CONFIRMATION

Accutest's Job Number: F21886
 Client: Tetra Tech Project: N4093
 Date Received: 1/30/04 Time Received: 0900
 # of Coolers Received: 2 Cooler Temperatures: 2.6 | 3.0
 Delivery Method: FedEx UPS Accutest Courier Greyhound Delivery Other
 Air Bill Number: _____

Cooler Custody Seals Intact ?	<u>Yes</u>	No	
Chain of Custody Provided ?	<u>Yes</u>	No	
COC Match Bottle Label ID's ?	<u>Yes</u>	No	
Sample Labels Present on all bottles ?	<u>Yes</u>	No	
All Analyses Marked On COC ?	<u>Yes</u>	No	
Are All Bottles Intact ?	<u>Yes</u>	No	
Samples Preserved Correctly ?	<u>Yes</u>	No	
Correct Number of Containers Used ?	<u>Yes</u>	No	
Sufficient Sample Volume ?	<u>Yes</u>	No	
Trip Blank Provided ?	Yes	<u>No</u>	
Trip Blank on COC ?	Yes	<u>No</u>	
Trip Blank Intact ?	Yes	No	<u>N/A</u>
Trip Blank Matrix ?	Soil	Water	<u>N/A</u>
Number of Encores ?	<u>0</u>		
Number of Soil Field Kits ?	<u>0</u>		

Summary of Comments: _____

Signature: Muhammad Date: 1/30/04
 Review Signature: _____

ASBD 12/30/03

4.1
4

F21886: Chain of Custody
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