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NAS CECIL FIELD, FL
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FIRST SEMI-ANNUAL FOURTH YEAR GROUNDWATER MONITORING LETTER REPORT FOR BUILDING 502 TANK 502 NAS CECIL FIELD FL

1/30/2004

TETRA TECH NUS INC

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January 30, 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
1st Semi-Annual, 4th Year (June 2003)
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. 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 and TtNUS, 2001].

The fieldwork and analytical results of the groundwater sampling conducted at the site in June 2003 are summarized in this report. The work was performed in general accordance with the Basewide 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 west 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 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 of 2001, TtNUS conducted a supplemental site assessment. TtNUS personnel supervised the installation of a replacement well for CEF-502-1S (which is now designated CEF-502-1SR) and sampled the four wells required in the monitoring order. The Site Assessment Report (SAR) 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. The subsequent groundwater monitoring report recommended continued monitoring. Therefore, TtNUS conducted the first semi-annual sampling event for the third year of the site's monitoring program during June 2002. TtNUS continued the program with a subsequent event held in December 2002 and recommended continued monitoring for the site in the March report (TtNUS, 2003).

FIELD OPERATIONS

On June 24, 2003, water level measurements were recorded from each of the monitoring wells prior to sample collection. The depth to water ranged from 4.44 feet (ft) below top-of-casing (btoc) (CEF-502-3S) to 5.62 ft btoc (CEF-502-1SR). The depth-to-water measurements, along with top of casing elevations, were used to calculate groundwater elevations and estimate groundwater flow direction.

On June 24, 2003, 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) (Figure 2). 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) by United States Environmental Protection Agency (USEPA) Method SW846 8260B, polynuclear aromatic hydrocarbons (PAHs) by USEPA Method SW846 8310, and total recoverable petroleum hydrocarbons (TRPH) by Florida Petroleum Range Organics (FL-PRO). The reported detection limits for these methods meet the requirements for the similar methods recommended in the NAMPAO.

RESULTS

Groundwater elevation data from the June 2003 event and the previous sampling events are shown on Table 1. The groundwater flow direction with elevation data for June 2003 is shown on Figure 2. Based on the data, the inferred direction of groundwater flow has not changed since June 2002; it continues to flow to the south, southwest. Depth to water measurements were 0.82 ft lower on average than those recorded during the previous monitoring event.

Concentrations of contaminants 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 in 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. GCTLs for these compounds were not exceeded during the December 2002 event in CEF-502-1SR; however, levels were exceeded for the three sampling events prior to December 2002. The TRPH concentration in monitoring well CEF-502-1SR has increased slightly since the previous sampling event and exceeds the GCTL. The concentrations of COCs in the other monitoring wells were below their respective GCTLs during the June 2003 sampling event. A copy of the laboratory report for the June 2003 sampling event is provided as Attachment C.

CONCLUSIONS AND RECOMMENDATIONS

A comparison of the results from the past three sampling events indicates that groundwater concentrations of COCs continue to generally decrease. The December 2002 event concentrations were significantly lower due to a relatively high water table during that event. Since this event is the first semi-annual groundwater monitoring event at the start of the fourth year of the sampling program, an annual evaluation of the milestone objectives is not required.

Based on the results of the June 2003 sampling event and a review of historical data for the site, TtNUS recommends that the natural attenuation monitoring program be continued at Building 502.

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

Mervin W. Dale, P.G.
Florida Professional Geologist
P.G. Number 001917

MERVIN W. DALE
LICENSE
NO. 1917
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

PC/mwd

Attachments (5)

pc: Mr. G. Magwood, NAVFAC EFD SOUTH (CD only)
Ms. D. Vaughn-Wright, USEPA
Ms. D. Wroblewski, TtNUS (cover letter only)
Mr. M. Perry, TtNUS (unbound and CD)
Project File

TABLES

Table 1
Groundwater Elevation and Monitoring Well Construction Data

Semi-Annual Groundwater Monitoring Report - June 2003
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	
			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
CEF-502-3S	12.22	80.68	5.03	75.65	3.77	76.91	3.03	77.65
CEF-502-4S	12.36	80.68	5.07	75.61	3.73	76.95	3.02	77.66
CEF-502-6S	14.80	81.70	5.72	75.98	5.20	76.50	4.64	77.06
CEF-502-7D	29.95	81.65	6.00	75.65	4.87	76.78	4.21	77.44
CEF-502-8S	13.57	81.75	NA	NM	4.83	76.92	4.14	77.61

Well Number	Total Depth (ft, bls)	Top of Casing Elevation (ft NAVD)	June 6, 2002		December 20, 2002		June 24, 2003	
			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	8.38	73.78	4.77	77.39	5.62	76.54
CEF-502-3S	12.22	80.68	7.14	73.54	3.52	77.16	4.44	76.24
CEF-502-4S	12.36	80.68	7.18	73.50	3.54	77.14	5.45	75.23
CEF-502-6S	14.80	81.70	7.90	73.80	4.29	77.41	5.00	76.70
CEF-502-7D	29.95	81.65	7.84	73.81	4.62	77.03	5.41	76.24
CEF-502-8S	13.57	81.75	8.00	73.75	4.47	77.28	5.30	76.45

Notes:
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-June 2003
Building 502, Tank 502
Naval Air Station Cecil Field
Jacksonville, Florida

Compounds Detected	GCTL[1]	NADSC[2]	Source Well CEF-502-1SR					Perimeter Well CEF-502-3S				
Sample ID: CEF-502-GW-			1SR-02	1SR-03	1SR-04	1SR-05	1SR-06	3S-03	3S-03B	3S-04	3S-05	3S-06[3]
Date Sampled			4/9/2001	12/11/2001	6/6/2002	12/20/2002	6/24/2003	12/11/2001	3/4/2002	6/6/2002	12/20/2002	6/24/2003
PAHs (USEPA Method 8270C) (µg/L)												
Acenaphthene	20	200	3.7	5.9	<16	<4.3	<4.3	1.1 J	<1.0	<4.1	<4.3	<1.0
Fluorene	280	280	4.5	5.5	5.6J	<2.1	4.7 J	0.7 J	<1.0	<2.1	<2.2	<1.0
Phenanthrene	210	2100	1.7	3.3	<8.2	<2.1	<4.2	<1.1	<1.0	<2.1	<2.2	<1.0
1-Methylnaphthalene	20	200	**63**	**93**	**84**	11.5	**40.8**	**28**	11	<2.1	<2.2	<0.52
2-Methylnaphthalene	20	200	**85**	**130**	**126**	16.4	**92.0**	**25**	<1.0	<2.1	<2.2	<0.52
Naphthalene	20	200	**66**	**96**	**68.3**	8.1	**60.7**	3.4	<1.0	<2.1	<2.2	<0.52
VOCs (USEPA Method 8260B) (µg/L)												
Chlorobenzene	100		<1.0	<1.0	<1.0	<1.0	<0.50	<1.0	NS	<1.0	<1.0	<0.50
Benzene	1	10	<1.0	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<1.0	<1.0	<0.50
Ethylbenzene	30	300	13	5.9	13.5	3.0	5.2	<1.0	NS	<1.0	<1.0	<0.50
Total Xylenes	20	200	4.8	1.2 J	5.5	<3.0	<1.0	<3.0	NS	<3.0	<3.0	<1.0
FL-PRO (mg/L)												
TRPH	5	50	**24**	**36**	**21.2**	**6.78**	**10.7**	1.5	NS	0.743	0.200 J	0.611

See notes at end of table.

Table 2
Summary of Detections in Groundwater

Semi-Annual Groundwater Monitoring Report-December 2002
Building 502, Tank 502
Naval Air Station Cecil Field
Jacksonville, Florida

Compounds Detected	GCTL[1]	NADSC[2]	Perimeter Well CEF-502-4S					Source Well CEF-502-6S				
Sample ID: CEF-502-GW-			4S-02	4S-03	4S-04	4S-05	4S-06	6S-02	6S-03	6S-04	6S-05	6S-06
Date Sampled			4/10/2001	12/11/2001	6/6/2002	12/20/2002	6/24/2003	4/9/2001	12/11/2001	6/6/2002	12/20/2002	6/24/2003
PAHs (USEPA Method 8270C) (µg/L)												
Acenaphthene	20	200	<1.0	<1.3	<4.6	<4.3	<1.0	1.2	3.8	<4.2	<4.2	1.4 J
Fluorene	280	280	<1.0	<1.3	<2.3	<2.2	<1.0	0.48 J	2.3	<2.1	<2.1	1.5 J
Phenanthrene	210	2100	<1.0	<1.3	<2.3	<2.2	<1.0	<1.0	0.89 J	<2.1	<2.1	<2.1
1-Methylnaphthalene	20	200	<1.0	1.2 J	1.6 J	<2.2	<0.51	7.4	**28**	<2.1	2.8	<0.52
2-Methylnaphthalene	20	200	<1.0	1.6	3.7	<2.2	<0.51	0.96 J	**41**	<2.1	7.2	5.1
Naphthalene	20	200	<1.0	<1.3	<2.3	<2.2	<0.51	2.0	5.0	<2.1	0.63 J	<0.52
VOCs (USEPA Method 8260B) (µg/L)												
Chlorobenzene	100		<1.0	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<1.0	<1.0	<0.50
Benzene	1	10	<1.0	<1.0	1.2	<1.0	<0.50	<1.0	<1.0	<1.0	<1.0	<0.50
Ethylbenzene	30	300	0.92 J	<1.0	<1.0	<1.0	<0.50	2.4	0.54 J	<1.0	0.72J	<0.50
Total Xylenes	20	200	<2.0	<3.0	<3.0	<3.0	<1.0	<2.0	0.43 J	<3.0	<3.0	<1.0
FL-PRO (mg/L)												
TRPH	5	50	1.1	0.46 J	0.581	<0.28	<0.18	1.5	1.5	1.02	0.850	0.562

See notes at end of table.

Table 2
Summary of Detections in Groundwater

Semi-Annual Groundwater Monitoring Report-December 2002
Building 502, Tank 502
Naval Air Station Cecil Field
Jacksonville, Florida
Page 3 of 3

Compounds Detected	GCTL[1]	NADSC[2]	Perimeter Well CEF-502-7D					Source Well CEF-502-8S			
Sample ID: CEF-502-GW-			7D-02	7D-03	7D-04	7D-05	7D-06	8S-03	8S-04	8S-05	8S-06
Date Sampled			4/9/2001	12/11/2001	6/6/2002	12/20/2002	6/24/2003	12/11/2001	6/6/2002	12/20/2002	6/24/2003
PAHs (USEPA Method 8270C) (µg/L)											
Acenaphthene	20	200	<1.0	<1.1	<4.2	<4.3	<1.0	<1.1	<4.3	<4.3	<1.1
Fluorene	280	280	<1.0	<1.1	<2.1	<2.2	<1.0	<1.1	<2.2	<2.2	<1.1
Phenanthrene	210	2100	<1.0	<1.1	<2.1	<2.2	<1.0	<1.1	<2.2	<2.2	<1.1
1-Methylnaphthalene	20	200	<1.0	<1.1	<2.1	<2.2	<0.51	<1.1	<2.2	<2.2	<0.56
2-Methylnaphthalene	20	200	<1.0	<1.1	<2.1	<2.2	<0.51	<1.1	<2.2	<2.2	<0.56
Naphthalene	20	200	<1.0	<1.1	<2.1	<2.2	<0.51	<1.1	<2.2	<2.2	<0.56
VOCs (USEPA Method 8260B) (µg/L)											
Chlorobenzene	100		<1.0	0.33 J	<1.0	<1.0	<0.50	<1.0	<1.0	<1.0	<0.50
Benzene	1	10	<1.0	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<1.0	<0.50
Ethylbenzene	30	300	<1.0	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<1.0	<0.50
Total Xylenes	20	200	<1.0	<3.0	<3.0	<3.0	<1.0	<3.0	<3.0	<3.0	<1.0
FL-PRO (mg/L)											
TRPH	5	50	<1.0	0.23 J	<0.26	<0.27	<0.17	0.45 J	0.352	0.364	0.528

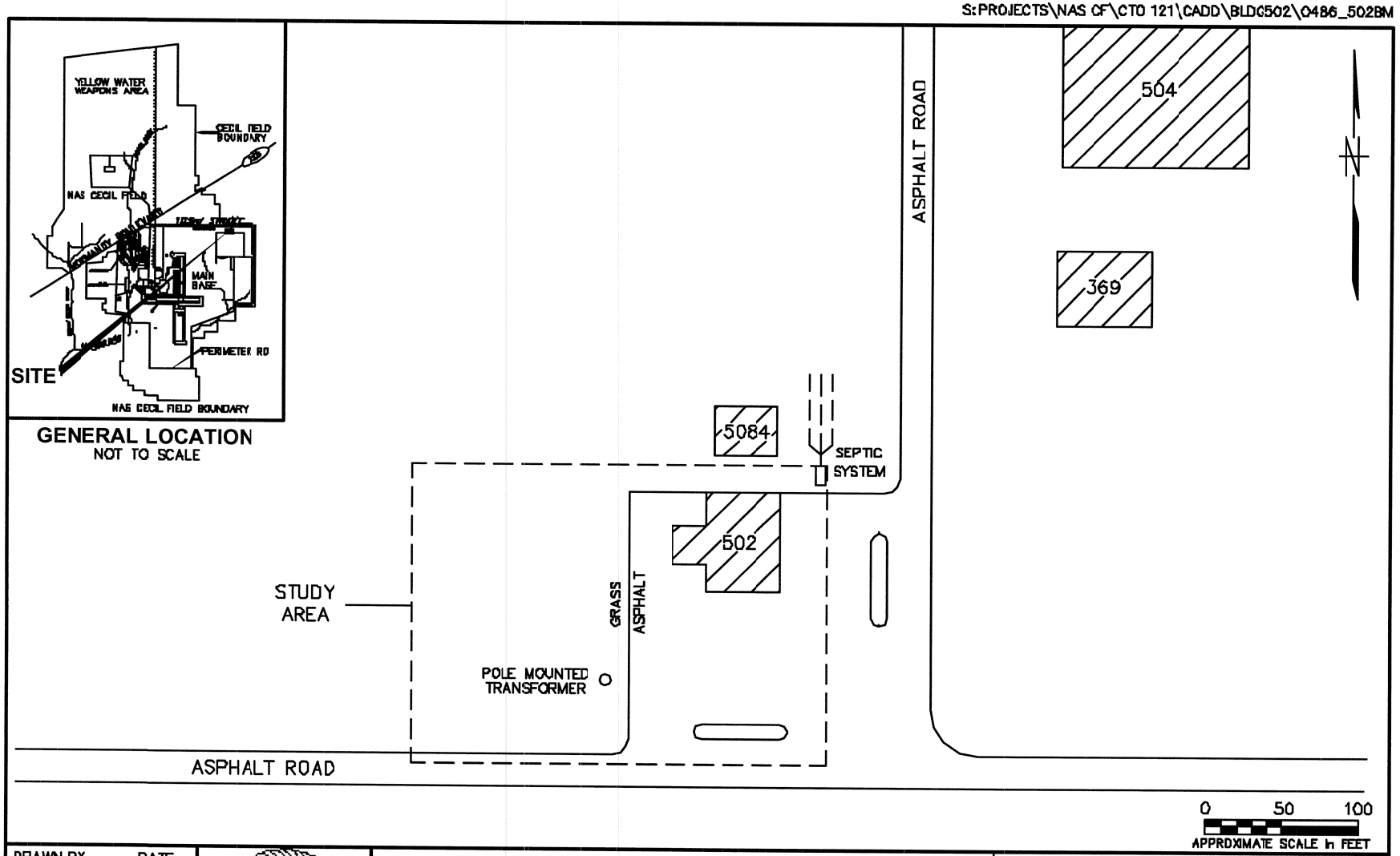
Notes:
[1]GCTL based on Chapter 62-770, FAC.
[2]NADSC as promulgated in Chapter 62-770.690, FAC.
[3]Duplicate Sample CEF-502-GW-DU01-06 was collected from this well.
Bold values are above GCTLs.

J = estimated
µg/L = micrograms per liter
mg/L = milligrams per liter

NS = not sampled
< = less than

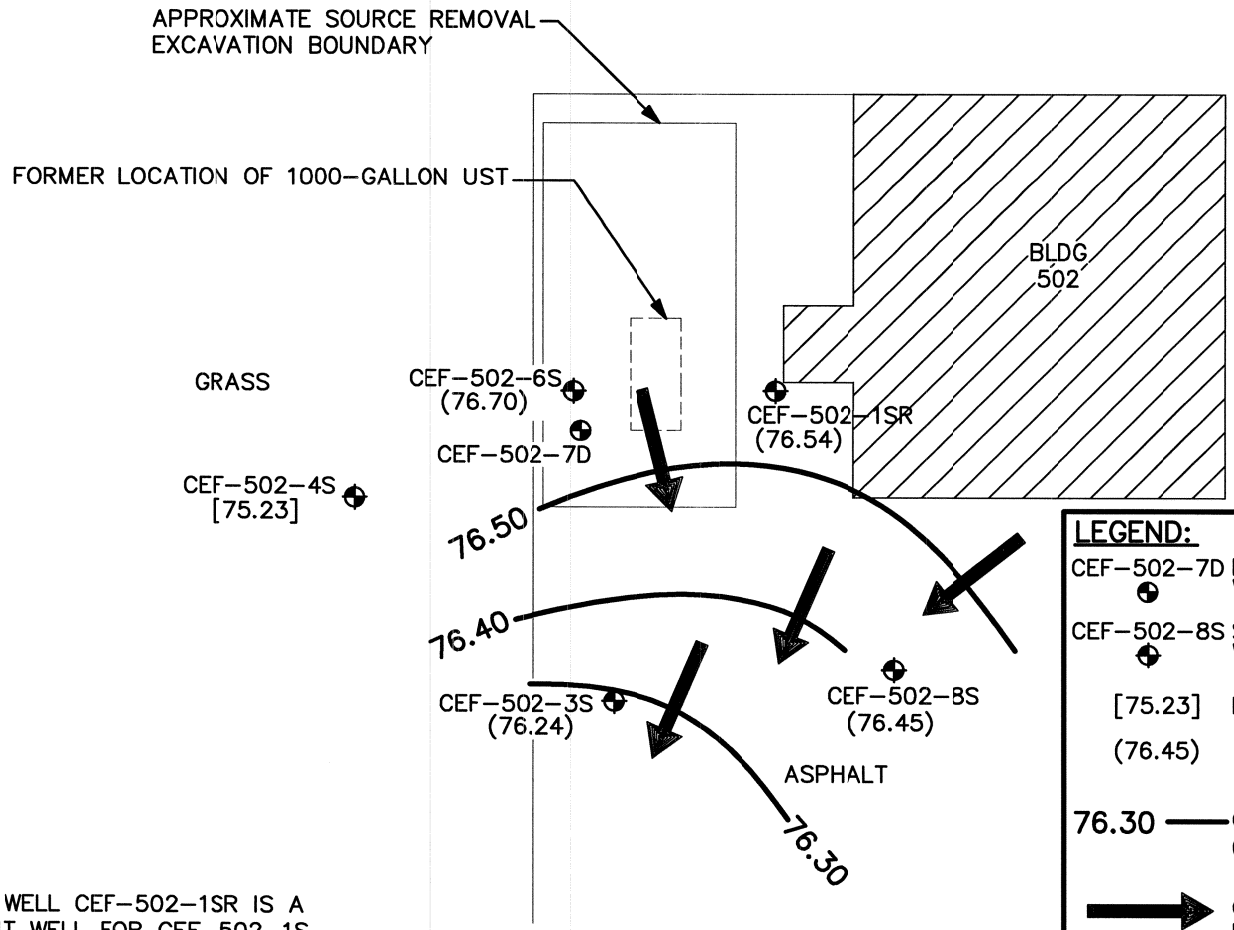
FIGURES

S:PROJECTS\NAS CF\CTO 121\CADD\BLDG502\0486_502BM



DRAWN BY LLK	DATE 6/13/01	SITE LOCATION MAP BUILDING 502 NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NO. 4093
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHED-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 1 REV. 0

ACAD: 4093GP03.dwg 10/10/03 DM PIT



NOTE:

MONITORING WELL CEF-502-1SR IS A REPLACEMENT WELL FOR CEF-502-1S AND IS LOCATED IN APPROXIMATELY THE SAME PLACE.

LEGEND:

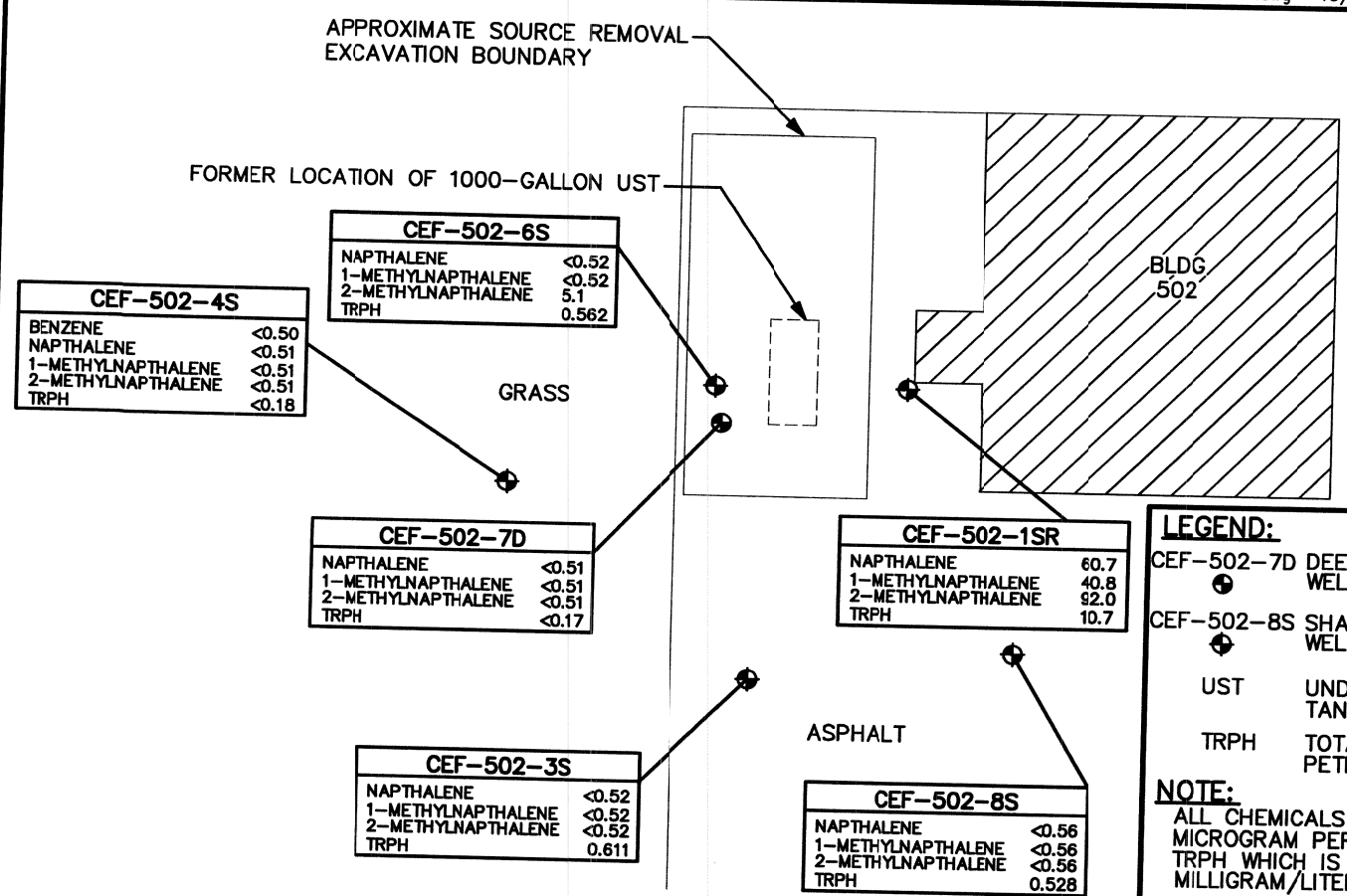
CEF-502-7D	DEEP MONITORING WELL
CEF-502-8S	SHALLOW MONITORING WELL
[75.23]	DATA NOT USED
(76.45)	GROUNDWATER ELEVATION
76.30	GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
	GROUNDWATER FLOW DIRECTION

0 30 60
SCALE IN FEET

DRAWN BY DM	DATE 10/10/03	GROUNDWATER FLOW MAP JUNE 24, 2003 BUILDING 502 NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NO. 4093
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHED-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 2 REV. 0

FORM CADD NO. SDV_AH12.DWG - REV 0 - 1/20/98

ACAD: 4093GT04.dwg 10/31/03 DM PIT



LEGEND:

CEF-502-7D DEEP MONITORING WELL

CEF-502-8S SHALLOW MONITORING WELL

UST UNDERGROUND STORAGE TANK

TRPH TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

NOTE:

ALL CHEMICALS MEASURED IN MICROGRAM PER LITER (ug/L) EXCEPT TRPH WHICH IS MEASURED IN MILLIGRAM/LITER (mg/L)

0 30 60

SCALE IN FEET

DRAWN BY DM DATE 10/31/03	COC CONCENTRATIONS IN GROUNDWATER JUNE 24, 2003 BUILDING 502 NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NO. 4093
CHECKED BY DATE		APPROVED BY DATE
COST/SCHED-AREA		APPROVED BY DATE
SCALE AS NOTED		DRAWING NO. FIGURE 3 REV. 0

FORM CADD NO. SDV_AH12.DWG - REV 0 - 1/20/98

ATTACHMENT A

FDEP NAMPAO

Department of Environmental Protection

Jeb Bush
Governor

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

David B. Struhs
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

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

13-JULY-99
Date

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

TJB JJC RESN EN

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:

Benzene	MW-CEF-502-2S
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

Ethylbenzene	MW-CEF-502-2S
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

Xylene	MW-CEF-502-2S
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

Naphthalene	MW-CEF-502-2S
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

TRPH	MW-CEF-502-2S
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					
	Mar-97	Sep-99	Jun-98	Sep-99	Sep-99	Mar-00	Jun-98	Mar-00	Jun-98	Mar-00	Sep-99	Mar-00		Source	Perimeter	
Volatile Organic Aromatics																
Benzene	ND	NS	26	NS	4.8	4.6	ND	1.5	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 miligrams 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 – JUNE 2003

Southeast ACCUTEST Laboratories

07/08/03

Technical Report for

Tetra Tech, NUS

NAS Cecil Field-CTO-121

N0486-WR356

Accutest Job Number: F18314

Report to:

Total number of pages in report: 80

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, 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.

Sample Summary

Tetra Tech, NUS

Job No: F18314

NAS Cecil Field-CTO-121
Project No: N0486-WR356

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
F18314-1	06/24/03	10:35 PL	06/26/03	AQ	Ground Water	CEF-502-GW-7D-06
F18314-3	06/24/03	10:50 PL	06/26/03	AQ	Ground Water	CEF-502-GW-6S-06
F18314-4	06/24/03	14:30 PL	06/26/03	AQ	Ground Water	CEF-502-GW-1SR-06
F18314-5	06/24/03	15:15 PL	06/26/03	AQ	Ground Water	CEF-502-GW-8S-06
F18314-6	06/24/03	15:25 PL	06/26/03	AQ	Ground Water	CEF-502-GW-3S-06
F18314-7	06/24/03	16:55 PL	06/26/03	AQ	Ground Water	CEF-502-GW-4S-06
F18314-8	06/24/03	00:00 PL	06/26/03	AQ	Ground Water	CEF-502-GW-DU01-06

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-502-GW-7D-06		
Lab Sample ID:	F18314-1	Date Sampled:	06/24/03
Matrix:	AQ - Ground Water	Date Received:	06/26/03
Method:	SW846 8260B	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-121		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0016770.D	1	06/27/03	KW	n/a	n/a	VC743
Run #2							

	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	0.54	1.0	0.50	ug/l	J
106-46-7	p-Dichlorobenzene	2.2	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	104%		78-125%
2037-26-5	Toluene-D8	99%		87-113%
460-00-4	4-Bromofluorobenzene	108%		84-117%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-502-GW-7D-06		
Lab Sample ID:	F18314-1	Date Sampled:	06/24/03
Matrix:	AQ - Ground Water	Date Received:	06/26/03
Method:	EPA 8310 SW846 3510C	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-121		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE016377.D	1	07/01/03	NJ	06/28/03	OP7863	GEE689
Run #2							

	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	ND	2.0	0.51	ug/l	
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	70%		32-142%
92-94-4	p-Terphenyl	64%		30-128%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-502-GW-7D-06		
Lab Sample ID:	F18314-1	Date Sampled:	06/24/03
Matrix:	AQ - Ground Water	Date Received:	06/26/03
Method:	FLORIDA-PRO SW846 3510C	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-121		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP30339.D	1	07/02/03	SM	06/30/03	OP7865	GOP1020
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	ND	0.26	0.17	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	80%		51-125%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-502-GW-6S-06		
Lab Sample ID:	F18314-3	Date Sampled:	06/24/03
Matrix:	AQ - Ground Water	Date Received:	06/26/03
Method:	SW846 8260B	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-121		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0016782.D	1	06/30/03	KW	n/a	n/a	VC744
Run #2							

	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	103%		86-115%
17060-07-0	1,2-Dichloroethane-D4	100%		78-125%
2037-26-5	Toluene-D8	98%		87-113%
460-00-4	4-Bromofluorobenzene	105%		84-117%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-502-GW-6S-06		
Lab Sample ID:	F18314-3	Date Sampled:	06/24/03
Matrix:	AQ - Ground Water	Date Received:	06/26/03
Method:	EPA 8310 SW846 3510C	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-121		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	EE016317.D	1	06/30/03	NJ	06/28/03	OP7863	GEE689
Run #2							

	Initial Volume	Final Volume
Run #1	960 ml	1.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	1.4	4.2	1.0	ug/l	J
208-96-8	Acenaphthylene	ND	4.2	1.0	ug/l	
120-12-7	Anthracene	ND	2.1	1.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.21	0.10	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.21	0.10	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.21	0.10	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.21	0.10	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.21	0.10	ug/l	
218-01-9	Chrysene	ND	2.1	1.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.21	0.10	ug/l	
206-44-0	Fluoranthene	ND	2.1	0.52	ug/l	
86-73-7	Fluorene	1.5	2.1	1.0	ug/l	J
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.21	0.10	ug/l	
91-20-3	Naphthalene	ND	2.1	0.52	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.1	0.52	ug/l	
91-57-6	2-Methylnaphthalene	5.1	2.1	0.52	ug/l	
85-01-8	Phenanthrene	ND	2.1	2.1	ug/l	
129-00-0	Pyrene	ND	2.1	0.52	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	89%		32-142%
92-94-4	p-Terphenyl	72%		30-128%

(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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-502-GW-6S-06		
Lab Sample ID:	F18314-3	Date Sampled:	06/24/03
Matrix:	AQ - Ground Water	Date Received:	06/26/03
Method:	FLORIDA-PRO SW846 3510C	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-121		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP30340.D	1	07/02/03	SM	06/30/03	OP7865	GOP1020
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	0.562	0.27	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	83%		51-125%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-502-GW-1SR-06		
Lab Sample ID:	F18314-4	Date Sampled:	06/24/03
Matrix:	AQ - Ground Water	Date Received:	06/26/03
Method:	SW846 8260B	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-121		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0016771.D	1	06/27/03	KW	n/a	n/a	VC743
Run #2							

	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	5.2	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	105%		78-125%
2037-26-5	Toluene-D8	99%		87-113%
460-00-4	4-Bromofluorobenzene	101%		84-117%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-502-GW-1SR-06		
Lab Sample ID:	F18314-4	Date Sampled:	06/24/03
Matrix:	AQ - Ground Water	Date Received:	06/26/03
Method:	EPA 8310 SW846 3510C	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-121		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE016320.D	1	06/30/03	NJ	06/28/03	OP7863	GEE689
Run #2 [a]	EE016370.D	4	07/01/03	NJ	06/28/03	OP7863	GEE689

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

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND [b]	17	4.3	ug/l	
208-96-8	Acenaphthylene	ND [b]	17	17	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	4.7 [b]	8.5	4.3	ug/l	J
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.21	0.11	ug/l	
91-20-3	Naphthalene	60.7 [b]	8.5	2.1	ug/l	
90-12-0	1-Methylnaphthalene	40.8 [b]	8.5	2.1	ug/l	
91-57-6	2-Methylnaphthalene	92.0 [b]	8.5	2.1	ug/l	
85-01-8	Phenanthrene [c]	ND	4.2	4.2	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	123%	122%	32-142%
92-94-4	p-Terphenyl	62%	66%	30-128%

(a) All hits confirmed by spectral match using a diode array detector.
(b) Result is from Run# 2
(c) Elevated reporting 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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-502-GW-1SR-06		
Lab Sample ID:	F18314-4	Date Sampled:	06/24/03
Matrix:	AQ - Ground Water	Date Received:	06/26/03
Method:	FLORIDA-PRO SW846 3510C	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-121		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP30341.D	5	07/02/03	SM	06/30/03	OP7865	GOP1020
Run #2							

	Initial Volume	Final Volume
Run #1	960 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	10.7	1.3	0.89	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	79%		51-125%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-502-GW-8S-06		
Lab Sample ID:	F18314-5	Date Sampled:	06/24/03
Matrix:	AQ - Ground Water	Date Received:	06/26/03
Method:	SW846 8260B	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-121		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0016772.D	1	06/27/03	KW	n/a	n/a	VC743
Run #2							

	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	101%		78-125%
2037-26-5	Toluene-D8	95%		87-113%
460-00-4	4-Bromofluorobenzene	106%		84-117%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-502-GW-8S-06		
Lab Sample ID:	F18314-5	Date Sampled:	06/24/03
Matrix:	AQ - Ground Water	Date Received:	06/26/03
Method:	EPA 8310 SW846 3510C	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-121		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE016321.D	1	06/30/03	NJ	06/28/03	OP7863	GEE689
Run #2							

	Initial Volume	Final Volume
Run #1	890 ml	1.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.5	1.1	ug/l	
208-96-8	Acenaphthylene	ND	4.5	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	0.56	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	0.56	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.2	0.56	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.2	0.56	ug/l	
85-01-8	Phenanthrene	ND	2.2	1.1	ug/l	
129-00-0	Pyrene	ND	2.2	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	72%		32-142%
92-94-4	p-Terphenyl	86%		30-128%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-502-GW-8S-06		
Lab Sample ID:	F18314-5	Date Sampled:	06/24/03
Matrix:	AQ - Ground Water	Date Received:	06/26/03
Method:	FLORIDA-PRO SW846 3510C	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-121		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP30342.D	1	07/02/03	SM	06/30/03	OP7865	GOP1020
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	0.528	0.27	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	82%		51-125%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-502-GW-3S-06		
Lab Sample ID:	F18314-6	Date Sampled:	06/24/03
Matrix:	AQ - Ground Water	Date Received:	06/26/03
Method:	SW846 8260B	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-121		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0016773.D	1	06/27/03	KW	n/a	n/a	VC743
Run #2							

	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	103%		86-115%
17060-07-0	1,2-Dichloroethane-D4	102%		78-125%
2037-26-5	Toluene-D8	97%		87-113%
460-00-4	4-Bromofluorobenzene	106%		84-117%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-502-GW-3S-06		
Lab Sample ID:	F18314-6	Date Sampled:	06/24/03
Matrix:	AQ - Ground Water	Date Received:	06/26/03
Method:	EPA 8310 SW846 3510C	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-121		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE016322.D	1	06/30/03	NJ	06/28/03	OP7863	GEE689
Run #2							

	Initial Volume	Final Volume
Run #1	970 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	2.1	1.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.21	0.10	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.21	0.10	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.21	0.10	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.21	0.10	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.21	0.10	ug/l	
218-01-9	Chrysene	ND	2.1	1.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.21	0.10	ug/l	
206-44-0	Fluoranthene	ND	2.1	0.52	ug/l	
86-73-7	Fluorene	ND	2.1	1.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.21	0.10	ug/l	
91-20-3	Naphthalene	ND	2.1	0.52	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.1	0.52	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.1	0.52	ug/l	
85-01-8	Phenanthrene	ND	2.1	1.0	ug/l	
129-00-0	Pyrene	ND	2.1	0.52	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	74%		32-142%
92-94-4	p-Terphenyl	83%		30-128%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-502-GW-3S-06		
Lab Sample ID:	F18314-6	Date Sampled:	06/24/03
Matrix:	AQ - Ground Water	Date Received:	06/26/03
Method:	FLORIDA-PRO SW846 3510C	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-121		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP30343.D	1	07/02/03	SM	06/30/03	OP7865	GOP1020
Run #2							

	Initial Volume	Final Volume
Run #1	960 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	0.611	0.26	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	80%		51-125%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-502-GW-4S-06		
Lab Sample ID:	F18314-7	Date Sampled:	06/24/03
Matrix:	AQ - Ground Water	Date Received:	06/26/03
Method:	SW846 8260B	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-121		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0016785.D	1	06/30/03	KW	n/a	n/a	VC744
Run #2							

	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	104%		86-115%
17060-07-0	1,2-Dichloroethane-D4	101%		78-125%
2037-26-5	Toluene-D8	95%		87-113%
460-00-4	4-Bromofluorobenzene	107%		84-117%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-502-GW-4S-06		
Lab Sample ID:	F18314-7	Date Sampled:	06/24/03
Matrix:	AQ - Ground Water	Date Received:	06/26/03
Method:	EPA 8310 SW846 3510C	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-121		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE016323.D	1	06/30/03	NJ	06/28/03	OP7863	GEE689
Run #2							

	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	ND	2.0	0.51	ug/l	
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	63%		32-142%
92-94-4	p-Terphenyl	72%		30-128%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-502-GW-4S-06		
Lab Sample ID:	F18314-7	Date Sampled:	06/24/03
Matrix:	AQ - Ground Water	Date Received:	06/26/03
Method:	FLORIDA-PRO SW846 3510C	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-121		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP30344.D	1	07/02/03	SM	06/30/03	OP7865	GOP1020
Run #2							

	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	79%		51-125%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-502-GW-DU01-06		
Lab Sample ID:	F18314-8	Date Sampled:	06/24/03
Matrix:	AQ - Ground Water	Date Received:	06/26/03
Method:	SW846 8260B	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-121		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0016786.D	1	06/30/03	KW	n/a	n/a	VC744
Run #2							

	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	104%		86-115%
17060-07-0	1,2-Dichloroethane-D4	102%		78-125%
2037-26-5	Toluene-D8	96%		87-113%
460-00-4	4-Bromofluorobenzene	106%		84-117%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-502-GW-DU01-06		
Lab Sample ID:	F18314-8	Date Sampled:	06/24/03
Matrix:	AQ - Ground Water	Date Received:	06/26/03
Method:	EPA 8310 SW846 3510C	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-121		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE016325.D	1	06/30/03	NJ	06/28/03	OP7863	GEE689
Run #2							

	Initial Volume	Final Volume
Run #1	950 ml	1.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.2	1.1	ug/l	
208-96-8	Acenaphthylene	ND	4.2	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	67%		32-142%
92-94-4	p-Terphenyl	76%		30-128%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-502-GW-DU01-06		
Lab Sample ID:	F18314-8	Date Sampled:	06/24/03
Matrix:	AQ - Ground Water	Date Received:	06/26/03
Method:	FLORIDA-PRO SW846 3510C	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-121		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP30345.D	1	07/02/03	SM	06/30/03	OP7865	GOP1020
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	0.616	0.27	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	84%		51-125%

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

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Blank Spike Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC743-BS	C0016753.D	1	06/27/03	KW	n/a	n/a	VC743

The QC reported here applies to the following samples: Method: SW846 8260B

F18314-1, F18314-4, F18314-5, F18314-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	23.9	96	76-123
108-90-7	Chlorobenzene	25	23.1	92	78-115
541-73-1	m-Dichlorobenzene	25	24.3	97	74-117
95-50-1	o-Dichlorobenzene	25	24.3	97	73-115
106-46-7	p-Dichlorobenzene	25	24.0	96	74 117
100-41-4	Ethylbenzene	25	23.3	93	76-117
1634-04-4	Methyl Tert Butyl Ether	25	23.1	92	68-125
108-88-3	Toluene	25	22.9	92	76-118
1330-20-7	Xylene (total)	75	70.9	95	78-120

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	103%	86-115%
17060-07-0	1,2-Dichloroethane-D4	101%	78-125%
2037-26-5	Toluene-D8	97%	87-113%
460-00-4	4-Bromofluorobenzene	102%	84-117%

Blank Spike Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC744-BS	C0016780.D	1	06/30/03	KW	n/a	n/a	VC744

The QC reported here applies to the following samples: Method: SW846 8260B

F18314-3, F18314-7, F18314-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	23.2	93	76-123
108-90-7	Chlorobenzene	25	21.9	88	78-115
541-73-1	m-Dichlorobenzene	25	22.6	90	74-117
95-50-1	o-Dichlorobenzene	25	23.0	92	73-115
106-46-7	p-Dichlorobenzene	25	22.5	90	74-117
100-41-4	Ethylbenzene	25	22.0	88	76-117
1634-04-4	Methyl Tert Butyl Ether	25	22.3	89	68-125
108-88-3	Toluene	25	21.6	86	76-118
1330-20-7	Xylene (total)	75	67.2	90	78-120

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	103%	86-115%
17060-07-0	1,2-Dichloroethane-D4	101%	78-125%
2037-26-5	Toluene-D8	96%	87-113%
460-00-4	4-Bromofluorobenzene	101%	84-117%

Method Blank Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC743-MB	C0016754.D	1	06/27/03	KW	n/a	n/a	VC743

The QC reported here applies to the following samples: Method: SW846 8260B

F18314-1, F18314-4, F18314-5, F18314-6

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	2.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	0.50	ug/l	
1330-20-7	Xylene (total)	ND	6.0	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	103%	86-115%
17060-07-0	1,2-Dichloroethane-D4	99%	78-125%
2037-26-5	Toluene-D8	98%	87-113%
460-00-4	4-Bromofluorobenzene	107%	84-117%

Method Blank Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC744-MB	C0016781.D	1	06/30/03	KW	n/a	n/a	VC744

The QC reported here applies to the following samples: Method: SW846 8260B

F18314-3, F18314-7, F18314-8

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	2.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	0.50	ug/l	
1330-20-7	Xylene (total)	ND	6.0	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	104%	86-115%
17060-07-0	1,2-Dichloroethane-D4	99%	78-125%
2037-26-5	Toluene-D8	96%	87-113%
460-00-4	4-Bromofluorobenzene	107%	84-117%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F18293-2MS	C0016762.D	1	06/27/03	KW	n/a	n/a	VC743
F18293-2MSD	C0016763.D	1	06/27/03	KW	n/a	n/a	VC743
F18293-2	C0016757.D	1	06/27/03	KW	n/a	n/a	VC743

The QC reported here applies to the following samples: Method: SW846 8260B

F18314-1, F18314-4, F18314-5, F18314-6

CAS No.	Compound	F18293-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	33.9		25	53.2	77	51.3	70*	4	71-127/8
108-90-7	Chlorobenzene	ND		25	22.0	88	21.4	86	3	77-113/6
541-73-1	m-Dichlorobenzene	ND		25	23.1	92	22.5	90	3	72-115/7
95-50-1	o-Dichlorobenzene	ND		25	23.4	94	22.7	91	3	72-113/8
106-46-7	p-Dichlorobenzene	ND		25	22.8	91	22.4	90	2	72-116/7
100-41-4	Ethylbenzene	3.1		25	25.7	90	24.6	86	4	72-119/7
1634-04-4	Methyl Tert Butyl Ether	3.1		25	26.2	92	26.6	94	2	65-125/12
108-88-3	Toluene	ND		25	21.9	88	21.3	85	3	73-119/10
1330-20-7	Xylene (total)	ND		75	70.2	94	67.3	90	4	73-123/8

CAS No.	Surrogate Recoveries	MS	MSD	F18293-2	Limits
1868-53-7	Dibromofluoromethane	102%	102%	102%	86-115%
17060-07-0	1,2-Dichloroethane-D4	107%	107%	102%	78-125%
2037-26-5	Toluene-D8	98%	98%	99%	87-113%
460-00-4	4-Bromofluorobenzene	102%	103%	107%	84-117%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F18314-3MS	C0016783.D	1	06/30/03	KW	n/a	n/a	VC744
F18314-3MSD	C0016784.D	1	06/30/03	KW	n/a	n/a	VC744
F18314-3	C0016782.D	1	06/30/03	KW	n/a	n/a	VC744

The QC reported here applies to the following samples: Method: SW846 8260B

F18314-3, F18314-7, F18314-8

CAS No.	Compound	F18314-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		25	23.4	94	22.6	90	3	71-127/8
108-90-7	Chlorobenzene	ND		25	21.5	86	20.6	82	4	77-113/6
541-73-1	m-Dichlorobenzene	ND		25	22.3	89	21.9	88	2	72-115/7
95-50-1	o-Dichlorobenzene	ND		25	22.9	92	21.9	88	4	72-113/8
106-46-7	p-Dichlorobenzene	ND		25	22.4	90	21.6	86	4	72-116/7
100-41-4	Ethylbenzene	ND		25	22.1	88	21.1	84	5	72-119/7
1634-04-4	Methyl Tert Butyl Ether	ND		25	22.4	90	21.5	86	4	65-125/12
108-88-3	Toluene	ND		25	21.3	85	20.5	82	4	73-119/10
1330-20-7	Xylene (total)	ND		75	66.5	89	64.0	85	4	73-123/8

CAS No.	Surrogate Recoveries	MS	MSD	F18314-3	Limits
1868-53-7	Dibromofluoromethane	105%	104%	103%	86-115%
17060-07-0	1,2-Dichloroethane-D4	105%	104%	100%	78-125%
2037-26-5	Toluene-D8	96%	94%	98%	87-113%
460-00-4	4-Bromofluorobenzene	104%	102%	105%	84-117%

Instrument Performance Check (BFB)

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample:	VC743-BFB	Injection Date:	06/27/03
Lab File ID:	C0016751.D	Injection Time:	08:40
Instrument ID:	GCMSC		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	15247	20.9		Pass
75	30.0 - 60.0% of mass 95	32152	44.2		Pass
95	Base peak, 100% relative abundance	72808	100.0		Pass
96	5.0 - 9.0% of mass 95	5220	7.2		Pass
173	Less than 2.0% of mass 174	276	0.38	(0.48) [a]	Pass
174	50.0 - 100.0% of mass 95	57357	78.8		Pass
175	5.0 - 9.0% of mass 174	4065	5.6	(7.1) [a]	Pass
176	95.0 - 101.0% of mass 174	55082	75.7	(96.0) [a]	Pass
177	5.0 - 9.0% of mass 176	3711	5.1	(6.7) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VC743-CC737	C0016752.D	06/27/03	08:57	00:17	Continuing cal 40
VC743-BS	C0016753.D	06/27/03	09:27	00:47	Blank Spike
VC741-BS1	C0016753.D	06/27/03	09:27	00:47	Blank Spike
VC743-MB	C0016754.D	06/27/03	09:55	01:15	Method Blank
VC741-MB1	C0016754.D	06/27/03	09:55	01:15	Method Blank
ZZZZZZ	C0016755.D	06/27/03	10:25	01:45	(unrelated sample)
ZZZZZZ	C0016756.D	06/27/03	10:53	02:13	(unrelated sample)
F18293-2	C0016757.D	06/27/03	11:21	02:41	(used for QC only; not part of job F18314)
ZZZZZZ	C0016758.D	06/27/03	11:48	03:08	(unrelated sample)
ZZZZZZ	C0016759.D	06/27/03	12:16	03:36	(unrelated sample)
ZZZZZZ	C0016760.D	06/27/03	12:44	04:04	(unrelated sample)
ZZZZZZ	C0016761.D	06/27/03	13:11	04:31	(unrelated sample)
F18293-2MS	C0016762.D	06/27/03	13:39	04:59	Matrix Spike
F18293-2MSD	C0016763.D	06/27/03	14:07	05:27	Matrix Spike Duplicate
ZZZZZZ	C0016764.D	06/27/03	14:35	05:55	(unrelated sample)
ZZZZZZ	C0016765.D	06/27/03	15:03	06:23	(unrelated sample)
ZZZZZZ	C0016766.D	06/27/03	15:30	06:50	(unrelated sample)
F18268-4MS	C0016767.D	06/27/03	15:58	07:18	Matrix Spike
F18268-4MSD	C0016768.D	06/27/03	16:26	07:46	Matrix Spike Duplicate
ZZZZZZ	C0016769.D	06/27/03	16:53	08:13	(unrelated sample)
F18314-1	C0016770.D	06/27/03	17:21	08:41	CEF-502-GW-7D-06
F18314-4	C0016771.D	06/27/03	17:49	09:09	CEF-502-GW-1SR-06
F18314-5	C0016772.D	06/27/03	18:17	09:37	CEF-502-GW-8S-06
F18314-6	C0016773.D	06/27/03	18:44	10:04	CEF-502-GW-3S-06

Instrument Performance Check (BFB)

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample:	VC743-BFB	Injection Date:	06/27/03
Lab File ID:	C0016751.D	Injection Time:	08:40
Instrument ID:	GCMSC		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	C0016774.D	06/27/03	19:15	10:35	(unrelated sample)
ZZZZZZ	C0016775.D	06/27/03	19:45	11:05	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample:	VC744-BFB	Injection Date:	06/30/03
Lab File ID:	C0016777.D	Injection Time:	13:08
Instrument ID:	GCMSC		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	17012	19.1		Pass
75	30.0 - 60.0% of mass 95	36544	41.0		Pass
95	Base peak, 100% relative abundance	89186	100.0		Pass
96	5.0 - 9.0% of mass 95	6496	7.3		Pass
173	Less than 2.0% of mass 174	325	0.36	(0.47) [a]	Pass
174	50.0 - 100.0% of mass 95	68552	76.9		Pass
175	5.0 - 9.0% of mass 174	4906	5.5	(7.2) [a]	Pass
176	95.0 - 101.0% of mass 174	66016	74.0	(96.3) [a]	Pass
177	5.0 - 9.0% of mass 176	4311	4.8	(6.5) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VC744-CC737	C0016779.D	06/30/03	13:55	00:47	Continuing cal 40
VC744-BS	C0016780.D	06/30/03	14:29	01:21	Blank Spike
VC744-MB	C0016781.D	06/30/03	14:57	01:49	Method Blank
F18314-3	C0016782.D	06/30/03	15:25	02:17	CEF-502-GW-6S-06
F18314-3MS	C0016783.D	06/30/03	15:53	02:45	Matrix Spike
F18314-3MSD	C0016784.D	06/30/03	16:20	03:12	Matrix Spike Duplicate
F18314-7	C0016785.D	06/30/03	16:48	03:40	CEF-502-GW-4S-06
F18314-8	C0016786.D	06/30/03	17:16	04:08	CEF-502-GW-DU01-06
ZZZZZZ	C0016787.D	06/30/03	17:44	04:36	(unrelated sample)
ZZZZZZ	C0016788.D	06/30/03	18:11	05:03	(unrelated sample)
ZZZZZZ	C0016789.D	06/30/03	18:39	05:31	(unrelated sample)
ZZZZZZ	C0016790.D	06/30/03	19:07	05:59	(unrelated sample)
ZZZZZZ	C0016791.D	06/30/03	19:35	06:27	(unrelated sample)
ZZZZZZ	C0016792.D	06/30/03	20:02	06:54	(unrelated sample)
ZZZZZZ	C0016793.D	06/30/03	20:30	07:22	(unrelated sample)
ZZZZZZ	C0016794.D	06/30/03	20:58	07:50	(unrelated sample)
ZZZZZZ	C0016795.D	06/30/03	21:25	08:17	(unrelated sample)
ZZZZZZ	C0016796.D	06/30/03	21:53	08:45	(unrelated sample)
ZZZZZZ	C0016797.D	06/30/03	22:21	09:13	(unrelated sample)
ZZZZZZ	C0016798.D	06/30/03	22:49	09:41	(unrelated sample)
ZZZZZZ	C0016799.D	06/30/03	23:17	10:09	(unrelated sample)
ZZZZZZ	C0016800.D	06/30/03	23:44	10:36	(unrelated sample)
ZZZZZZ	C0016801.D	07/01/03	00:12	11:04	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample:	VC737-BFB	Injection Date:	06/20/03
Lab File ID:	C0016630.D	Injection Time:	11:00
Instrument ID:	GCMSC		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	15547	20.8		Pass
75	30.0 - 60.0% of mass 95	33488	44.7		Pass
95	Base peak, 100% relative abundance	74888	100.0		Pass
96	5.0 - 9.0% of mass 95	5468	7.3		Pass
173	Less than 2.0% of mass 174	509	0.68	(0.8) [a]	Pass
174	50.0 - 100.0% of mass 95	63765	85.1		Pass
175	5.0 - 9.0% of mass 174	4760	6.4	(7.5) [a]	Pass
176	95.0 - 101.0% of mass 174	62248	83.1	(97.6) [a]	Pass
177	5.0 - 9.0% of mass 176	3808	5.1	(6.1) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VC737-IC737	C0016631.D	06/20/03	11:27	00:27	Initial cal 1
VC737-IC737	C0016632.D	06/20/03	11:55	00:55	Initial cal 5
VC737-IC737	C0016633.D	06/20/03	12:23	01:23	Initial cal 20
VC737-ICC737	C0016634.D	06/20/03	12:51	01:51	Initial cal 40
VC737-IC737	C0016635.D	06/20/03	13:18	02:18	Initial cal 70
VC737-IC737	C0016636.D	06/20/03	13:46	02:46	Initial cal 100

Volatile Internal Standard Area Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Check Std:	VC743-CC737	Injection Date:	06/27/03
Lab File ID:	C0016752.D	Injection Time:	08:57
Instrument ID:	GCMSC	Method:	SW846 8260B

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
Check Std	1357225	10.27	1127648	13.50	587973	16.05	98867	7.49
Upper Limit [a]	2714450	10.77	2255296	14.00	1175946	16.55	197734	7.99
Lower Limit [b]	678613	9.77	563824	13.00	293987	15.55	49434	6.99

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
VC743-BS	1381290	10.26	1130765	13.50	589170	16.05	94714	7.49
VC741-BS1	1381290	10.26	1130765	13.50	589170	16.05	94714	7.49
VC743-MB	1368547	10.27	1101896	13.50	532362	16.05	93445	7.51
VC741-MB1	1368547	10.27	1101896	13.50	532362	16.05	93445	7.51
ZZZZZZ	1312893	10.26	1047642	13.50	513807	16.05	88591	7.51
ZZZZZZ	1279348	10.27	1032068	13.50	494665	16.05	89835	7.50
F18293-2	1258090	10.27	1012627	13.50	499999	16.05	93843	7.50
ZZZZZZ	1258412	10.27	990138	13.50	492746	16.05	94974	7.50
ZZZZZZ	1246171	10.27	990077	13.50	508017	16.05	95634	7.49
ZZZZZZ	1243033	10.27	988217	13.50	479621	16.05	87554	7.50
ZZZZZZ	1207741	10.27	953250	13.50	450832	16.05	86180	7.51
F18293 2MS	1221718	10.27	993317	13.50	535180	16.05	99166	7.49
F18293-2MSD	1297511	10.27	1059384	13.50	558196	16.05	104352	7.49
ZZZZZZ	1292395	10.27	1022218	13.50	490293	16.05	93698	7.50
ZZZZZZ	1212607	10.27	977685	13.50	470169	16.05	85689	7.50
ZZZZZZ	1195309	10.27	962900	13.50	491749	16.05	86023	7.50
F18268-4MS	1282247	10.27	1046350	13.50	544819	16.05	102618	7.50
F18268-4MSD	1292992	10.27	1061285	13.50	559450	16.05	99661	7.49
ZZZZZZ	1276757	10.27	1053222	13.50	511465	16.05	103789	7.49
F18314-1	1238972	10.27	985921	13.50	475022	16.05	92531	7.51
F18314-4	1188594	10.27	955204	13.50	511162	16.05	89260	7.50
F18314-5	1321838	10.27	1100470	13.50	554225	16.05	98276	7.51
F18314-6	1303698	10.27	1056709	13.50	522064	16.05	92616	7.51
ZZZZZZ	1295255	10.26	1047281	13.50	514577	16.05	86582	7.50
ZZZZZZ	1266433	10.27	1015598	13.50	514917	16.05	84995	7.51

IS 1 = Fluorobenzene
IS 2 = Chlorobenzene-D5
IS 3 = 1,4-Dichlorobenzene-d4
IS 4 = Tert Butyl Alcohol-D10

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Volatile Internal Standard Area Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Check Std:	VC744-CC737	Injection Date:	06/30/03
Lab File ID:	C0016779.D	Injection Time:	13:55
Instrument ID:	GCMSC	Method:	SW846 8260B

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
Check Std	1402737	10.26	1171738	13.50	622549	16.05	109794	7.49
Upper Limit [a]	2805474	10.76	2343476	14.00	1245098	16.55	219588	7.99
Lower Limit [b]	701369	9.76	585869	13.00	311275	15.55	54897	6.99

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
VC744-BS	1383020	10.26	1165454	13.50	616006	16.04	103328	7.50
VC744-MB	1327753	10.27	1102628	13.50	539002	16.05	100858	7.51
F18314-3	1284471	10.27	1046277	13.50	531102	16.05	95900	7.51
F18314-3MS	1292580	10.27	1087086	13.50	574841	16.05	99203	7.49
F18314-3MSD	1344492	10.27	1138691	13.50	594344	16.05	101684	7.49
F18314-7	1342666	10.27	1121599	13.50	553006	16.05	96116	7.50
F18314-8	1290152	10.27	1074973	13.50	532666	16.05	92740	7.51
ZZZZZZ	1259044	10.27	1028791	13.50	503355	16.05	92828	7.51
ZZZZZZ	1245663	10.27	1020349	13.50	505401	16.05	86648	7.51
ZZZZZZ	1230798	10.27	1011059	13.50	493543	16.05	86171	7.50
ZZZZZZ	1225933	10.27	997176	13.50	489448	16.05	87146	7.50
ZZZZZZ	1188458	10.27	969384	13.50	474193	16.05	84241	7.50
ZZZZZZ	1174509	10.27	956625	13.50	471147	16.05	81540	7.50
ZZZZZZ	1151655	10.27	945834	13.50	465263	16.05	81344	7.50
ZZZZZZ	1151156	10.27	951735	13.50	466026	16.05	79456	7.50
ZZZZZZ	1142555	10.27	942521	13.50	460534	16.05	78803	7.50
ZZZZZZ	1116978	10.27	918475	13.50	445465	16.05	79592	7.50
ZZZZZZ	1111067	10.27	907486	13.50	446510	16.05	79122	7.50
ZZZZZZ	1104105	10.27	905519	13.50	440347	16.05	79851	7.50
ZZZZZZ	1089042	10.27	892851	13.50	429507	16.05	76025	7.50
ZZZZZZ	1047637	10.27	850199	13.50	409002	16.05	76180	7.50
ZZZZZZ	1048815	10.27	849992	13.50	431970	16.05	71391	7.50

IS 1 = Fluorobenzene
IS 2 = Chlorobenzene-D5
IS 3 = 1,4-Dichlorobenzene-d4
IS 4 = Tert Butyl Alcohol-D10

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Volatile Surrogate Recovery Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Method: SW846 8260B Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
F18314-1	C0016770.D	102.0	104.0	99.0	108.0
F18314-3	C0016782.D	103.0	100.0	98.0	105.0
F18314-4	C0016771.D	103.0	105.0	99.0	101.0
F18314-5	C0016772.D	101.0	101.0	95.0	106.0
F18314-6	C0016773.D	103.0	102.0	97.0	106.0
F18314-7	C0016785.D	104.0	101.0	95.0	107.0
F18314-8	C0016786.D	104.0	102.0	96.0	106.0
F18293-2MS	C0016762.D	102.0	107.0	98.0	102.0
F18293-2MSD	C0016763.D	102.0	107.0	98.0	103.0
F18314-3MS	C0016783.D	105.0	105.0	96.0	104.0
F18314-3MSD	C0016784.D	104.0	104.0	94.0	102.0
VC743-BS	C0016753.D	103.0	101.0	97.0	102.0
VC743-MB	C0016754.D	103.0	99.0	98.0	107.0
VC744-BS	C0016780.D	103.0	101.0	96.0	101.0
VC744-MB	C0016781.D	104.0	99.0	96.0	107.0

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	86-115%
S2 = 1,2-Dichloroethane-D4	78-125%
S3 = Toluene-D8	87-113%
S4 = 4-Bromofluorobenzene	84-117%

Initial Calibration Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample: VC737-ICC737
Lab FileID: C0016634.D

Response Factor Report MSVOA5

Method : C:\MSDCHEM\2\METHODS\82600620.M (RTE Integrator)
Title : EPA 624 & SWA 5030B/8260B
Last Update : Fri Jun 20 14:15:37 2003
Response via : Initial Calibration

Calibration Files
1 =C0016631.D 2 =C0016632.D 3 =C0016633.D
4 =C0016634.D 5 =C0016635.D 6 =C0016636.D

		Compound	1	2	3	4	5	6	Avg	%RSD
1)	I	Fluorobenzene	----------	----------	----------	ISTD	----------	----------	----------	
2)		Dichlorodifluoromet	0.234	0.207	0.278	0.277	0.275	0.262	0.256	11.30
3)	P	Chloromethane	0.467	0.356	0.420	0.424	0.409	0.398	0.412	8.81
4)	C	Vinyl Chloride	0.321	0.249	0.327	0.323	0.314	0.301	0.306	9.62
5)		Bromomethane	0.201	0.153	0.177	0.164	0.149	0.136	0.163	14.15
6)		Chloroethane	0.157	0.133	0.151	0.147	0.138	0.128	0.142	7.79
7)		Trichlorofluorometh	0.324	0.238	0.314	0.309	0.310	0.296	0.298	10.39
8)		Ethyl ether	0.231	0.239	0.249	0.252	0.250	0.242	0.244	3.30
9)		Acrolein		0.032	0.027	0.027	0.026	0.025	0.027	10.42
10)		Freon 113	0.280	0.254	0.264	0.260	0.254	0.250	0.261	4.19
11)		Acetone		0.122	0.118	0.114	0.109	0.103	0.113	6.69
12)	C	1,1-Dichloroethene	0.504	0.448	0.493	0.491	0.480	0.472	0.481	4.09
13)		Iodomethane	0.411	0.367	0.406	0.404	0.406	0.412	0.401	4.19
14)		Methyl Acetate	0.259	0.241	0.243	0.245	0.240	0.234	0.244	3.49
15)		Carbon Disulfide		0.830	0.879	0.868	0.855	0.832	0.853	2.52
16)		Methylene Chloride		0.658	0.543	0.525	0.500	0.483	0.542	12.70
17)		Acrylonitrile		0.127	0.116	0.113	0.114	0.111	0.116	5.55
18)		Methyl Tert Butyl E	0.566	0.609	0.653	0.665	0.680	0.668	0.640	6.87
19)		trans-1,2-Dichloroe	0.440	0.417	0.447	0.439	0.440	0.422	0.434	2.70
20)		Hexane	0.386	0.372	0.417	0.419	0.421	0.396	0.402	5.06
21)		Vinyl acetate	0.622	0.728	0.753	0.770	0.737	0.734	0.724	7.23
22)		Di-isopropyl ether	1.130	1.158	1.191	1.165	1.123	1.053	1.137	4.19
23)	P	1,1-Dichloroethane	0.509	0.514	0.533	0.528	0.514	0.494	0.515	2.74
24)		ETBE		0.592	0.694	0.719	0.763	0.745	0.703	9.60
25)		2-Butanone	0.165	0.163	0.167	0.166	0.166	0.159	0.164	1.80
26)		cis-1,2-Dichloroeth	0.314	0.283	0.297	0.292	0.291	0.281	0.293	3.98
27)		2,2-Dichloropropane	0.174	0.182	0.212	0.207	0.213	0.206	0.199	8.44
28)		Bromochloromethane	0.142	0.140	0.136	0.137	0.136	0.134	0.138	2.20
29)	C	Chloroform	0.480	0.455	0.464	0.457	0.454	0.444	0.459	2.69
30)		Tetrahydrofuran	0.084	0.094	0.101	0.102	0.100	0.100	0.097	7.28
31)	S	Dibromofluoromethan	0.257	0.247	0.252	0.252	0.250	0.249	0.251	1.33
32)		1,1,1-Trichloroetha	0.374	0.345	0.371	0.365	0.366	0.355	0.363	2.92
33)		Cyclohexane	0.474	0.474	0.564	0.567	0.568	0.542	0.531	8.57
34)		1,1-Dichloropropene	0.333	0.328	0.349	0.352	0.349	0.336	0.341	2.93
35)		Carbon Tetrachlorid	0.337	0.319	0.345	0.345	0.348	0.340	0.339	3.18
36)	S	1,2-Dichloroethane-	0.301	0.289	0.301	0.287	0.288	0.280	0.291	2.93
37)		1,2-Dichloroethane	0.419	0.382	0.389	0.391	0.385	0.376	0.390	3.83
38)		Benzene	1.183	1.033	1.089	1.084	1.060	1.000	1.075	5.82
39)		TAME		0.453	0.525	0.544	0.582	0.562	0.533	9.35
40)		Trichloroethene	0.281	0.262	0.276	0.280	0.282	0.272	0.276	2.83
41)	C	1,2-Dichloropropane	0.309	0.309	0.320	0.321	0.310	0.293	0.310	3.20
42)		Methylcyclohexane	0.358	0.370	0.435	0.444	0.445	0.419	0.412	9.30
43)		Dibromomethane	0.170	0.170	0.176	0.176	0.176	0.173	0.173	1.76
44)		Bromodichloromethan	0.376	0.352	0.358	0.361	0.360	0.355	0.360	2.32
45)		2-Nitropropane	0.074	0.080	0.082	0.082	0.082	0.080	0.080	3.95
46)		2-Chloroethyl vinyl		0.049	0.060	0.061	0.065	0.066	0.060	11.44

Initial Calibration Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample: VC737-ICC737
Lab FileID: C0016634.D

47)		cis-1,3-Dichloropro	0.402	0.414	0.454	0.458	0.456	0.449	0.439	5.55
48)		4-Methyl-2-pentanon	0.323	0.347	0.359	0.354	0.342	0.326	0.342	4.27
49)	I	Chlorobenzene-d5	----------ISTD----------							
50)	S	Toluene-d8	1.222	1.246	1.234	1.233	1.230	1.223	1.231	0.71
51)	C	Toluene	1.585	1.425	1.442	1.462	1.460	1.432	1.468	4.04
52)		trans-1,3-Dichlorop	0.452	0.469	0.502	0.519	0.520	0.514	0.496	5.80
53)		1,1,2-Trichloroetha	0.290	0.272	0.277	0.277	0.271	0.264	0.275	3.26
54)		2-hexanone	0.267	0.302	0.326	0.323	0.310	0.295	0.304	7.08
55)		1,3-Dichloropropane	0.577	0.546	0.567	0.555	0.537	0.522	0.551	3.64
56)		Tetrachloroethene	0.368	0.335	0.354	0.357	0.354	0.349	0.353	3.05
57)		Dibromochloromethan	0.352	0.324	0.355	0.362	0.361	0.361	0.353	4.11
58)		1,2-Dibromoethane	0.306	0.312	0.320	0.330	0.334	0.333	0.322	3.63
59)		1-Chlorohexane		0.380	0.458	0.468	0.480	0.468	0.451	9.01
60)	P	Chlorobenzene	1.060	0.969	0.995	1.000	0.995	0.980	1.000	3.16
61)		1,1,1,2-Tetrachloro	0.366	0.327	0.341	0.345	0.338	0.324	0.340	4.44
62)	C	Ethylbenzene	1.619	1.562	1.656	1.669	1.634	1.558	1.616	2.90
63)		m,p-Xylene	1.246	1.208	1.272	1.287	1.260	1.205	1.246	2.72
64)		o-Xylene	1.183	1.251	1.329	1.344	1.307	1.250	1.277	4.75
65)		Styrene		0.955	1.060	1.096	1.077	1.019	1.041	5.38
66)	P	Bromoform	0.238	0.232	0.258	0.268	0.273	0.277	0.258	7.27
67)	I	1,4-Dichlorobenzene-d	----------ISTD----------							
68)		Isopropylbenzene	2.379	2.513	2.759	2.800	2.846	2.834	2.688	7.25
69)		Cyclohexanone		0.029	0.023	0.023	0.024	0.024	0.024	9.85
70)	S	4-Bromofluorobenzen	1.002	0.984	0.961	0.950	0.965	0.974	0.973	1.87
71)	P	1,1,2,2-Tetrachloro	0.938	0.828	0.813	0.802	0.792	0.787	0.827	6.84
72)		trans-1,4-Dichloro-		0.196	0.222	0.234	0.245	0.250	0.230	9.39
73)		1,2,3-Trichloroprop	0.255	0.225	0.225	0.220	0.220	0.221	0.228	6.01
74)		Bromobenzene	0.827	0.783	0.792	0.791	0.778	0.747	0.786	3.30
75)		n-Propylbenzene	3.520	3.490	3.668	3.659	3.665	3.481	3.580	2.58
76)		1,3,5-Trimethylbenz	2.310	2.266	2.455	2.469	2.423	2.326	2.375	3.57
77)		2-Chlorotoluene	2.505	2.382	2.452	2.425	2.390	2.284	2.406	3.11
78)		4-Chlorotoluene	2.198	2.104	2.232	2.219	2.236	2.220	2.201	2.24
79)		tert-Butylbenzene	1.350	1.364	1.648	1.672	1.662	1.645	1.557	9.97
80)		1,2,4-Trimethylbenz	2.366	2.377	2.549	2.586	2.589	2.551	2.503	4.12
81)		sec-Butylbenzene	2.719	2.686	3.066	3.125	3.159	3.124	2.980	7.28
82)		4-Isopropyltoluene	2.096	2.212	2.513	2.538	2.576	2.533	2.411	8.44
83)		1,3-Dichlorobenzene	1.533	1.311	1.368	1.392	1.394	1.390	1.398	5.25
84)		1,4-Dichlorobenzene	1.533	1.383	1.413	1.423	1.430	1.425	1.435	3.57
85)		Benzyl chloride	1.175	1.142	1.343	1.395	1.418	1.424	1.316	9.56
86)		n-Butylbenzene	2.118	2.173	2.423	2.463	2.470	2.455	2.350	6.83
87)		1,2-Dichlorobenzene	1.386	1.273	1.312	1.342	1.341	1.360	1.336	2.93
88)		1,2-Dibromo-3-Chlor		0.124	0.131	0.136	0.136	0.139	0.133	4.60
89)		1,2,4-Trichlorobenz	0.801	0.738	0.847	0.896	0.920	0.945	0.858	9.12
90)		Hexachlorobutadiene	0.489	0.395	0.418	0.411	0.413	0.419	0.424	7.74
91)		Naphthalene	1.916	1.504	1.796	1.939	2.040	2.107	1.884	11.39
92)		1,2,3-Trichlorobenz	0.787	0.653	0.749	0.774	0.805	0.824	0.765	7.94
93)	I	Tert Butyl alcohol-d1	----------ISTD----------							
94)		Tert-Butyl alcohol	1.950	1.878	1.968	1.958	1.950	1.910	1.936	1.79
95)		1,4-Dioxane	0.199	0.183	0.214	0.213	0.204	0.198	0.202	5.65

(#) = Out of Range

82600620.M Tue Jun 24 08:33:02 2003 RPT1

Continuing Calibration Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample: VC743-CC737
Lab FileID: C0016752.D

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\062703\C0016752.D Vial: 1
Acq On : 27 Jun 2003 8:57 am Operator: KarenW
Sample : CC737-70 Inst : MSVOA5
Misc : ms2357,vc743,,,,, Multiplr: 1.00
MS Integration Params: Rteint.p

Method : C:\MSDCHEM\2\METHODS\82600620.M (RTE Integrator)
Title : EPA 624 & SWA 5030B/8260B
Last Update : Fri Jun 20 14:15:37 2003
Response via : Multiple Level Calibration

Min. RRF : 0.001 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.000	1.000	0.0	79	0.00
2		Dichlorodifluoromethane	0.256	0.215	16.0	62	0.00
3	P	Chloromethane	0.412	0.388	5.8	75	0.00
4	C	Vinyl Chloride	0.306	0.299	2.3	75	0.00
5		Bromomethane	0.163	0.153	6.1	81	0.00
6		Chloroethane	0.142	0.140	1.4	80	-0.01
7		Trichlorofluoromethane	0.298	0.334	-12.1	85	0.00
8		Ethyl ether	0.244	0.250	-2.5	79	0.00
9		Acrolein	0.027	0.029	-7.4	89	0.00
10		Freon 113	0.261	0.277	-6.1	86	0.00
11		Acetone	0.113	0.092	18.6	67	0.00
12	C	1,1-Dichloroethene	0.481	0.495	-2.9	81	0.00
13		Iodomethane	0.401	0.435	-8.5	85	0.00
14		Methyl Acetate	0.244	0.231	5.3	76	0.00
15		Carbon Disulfide	0.853	0.888	-4.1	82	0.00
16		Methylene Chloride	0.542	0.509	6.1	81	0.00
17		Acrylonitrile	0.116	0.113	2.6	78	0.00
18		Methyl Tert Butyl Ether	0.640	0.664	-3.8	77	0.00
19		trans-1,2-Dichloroethene	0.434	0.450	-3.7	81	0.00
20		Hexane	0.402	0.426	-6.0	80	0.00
21		Vinyl acetate	0.724	0.835	-15.3	90	0.00
22		Di-isopropyl ether	1.137	1.122	1.3	79	0.00
23	P	1,1-Dichloroethane	0.515	0.527	-2.3	81	0.00
24		ETBE	0.703	0.697	0.9	72	0.00
25		2-Butanone	0.164	0.147	10.4	70	0.00
26		cis-1,2-Dichloroethene	0.293	0.302	-3.1	82	0.00
27		2,2-Dichloropropane	0.199	0.233	-17.1	86	0.00
28		Bromochloromethane	0.138	0.145	-5.1	84	0.00
29	C	Chloroform	0.459	0.481	-4.8	84	0.00
30		Tetrahydrofuran	0.097	0.096	1.0	76	0.00
31	S	Dibromofluoromethane	0.251	0.256	-2.0	81	0.00
32		1,1,1-Trichloroethane	0.363	0.393	-8.3	85	0.00
33		Cyclohexane	0.531	0.565	-6.4	79	0.00
34		1,1-Dichloropropene	0.341	0.359	-5.3	81	0.00
35		Carbon Tetrachloride	0.339	0.378	-11.5	86	0.00
36	S	1,2-Dichloroethane-d4	0.291	0.285	2.1	78	0.00
37		1,2-Dichloroethane	0.390	0.394	-1.0	81	0.00
38		Benzene	1.075	1.077	-0.2	80	0.00
39		TAME	0.533	0.524	1.7	71	0.00
40		Trichloroethene	0.276	0.284	-2.9	80	0.00
41	C	1,2-Dichloropropane	0.310	0.311	-0.3	79	0.00
42		Methylcyclohexane	0.412	0.454	-10.2	81	0.00

Continuing Calibration Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample: VC743-CC737
Lab FileID: C0016752.D

43		Dibromomethane	0.173	0.184	-6.4	83	0.00
44		Bromodichloromethane	0.360	0.377	-4.7	83	0.00
45		2-Nitropropane	0.080	0.080	0.0	78	0.00
46		2-Chloroethyl vinyl ether	0.060	0.056	6.7	67	0.00
47		cis-1,3-Dichloropropene	0.439	0.470	-7.1	82	0.00
48		4-Methyl-2-pentanone	0.342	0.323	5.6	75	0.00
49	I	Chlorobenzene-d5	1.000	1.000	0.0	83	0.00
50	S	Toluene-d8	1.231	1.194	3.0	80	0.00
51	C	Toluene	1.468	1.436	2.2	81	0.00
52		trans-1,3-Dichloropropene	0.496	0.509	-2.6	81	0.00
53		1,1,2-Trichloroethane	0.275	0.266	3.3	81	0.00
54		2-hexanone	0.304	0.268	11.8	71	0.00
55		1,3-Dichloropropane	0.551	0.531	3.6	82	0.00
56		Tetrachloroethene	0.353	0.362	-2.5	85	0.00
57		Dibromochloromethane	0.353	0.366	-3.7	84	0.00
58		1,2-Dibromoethane	0.322	0.330	-2.5	82	0.00
59		1-Chlorohexane	0.451	0.468	-3.8	81	0.00
60	P	Chlorobenzene	1.000	1.008	-0.8	84	0.00
61		1,1,1,2-Tetrachloroethane	0.340	0.348	-2.4	85	0.00
62	C	Ethylbenzene	1.616	1.633	-1.1	83	0.00
63		m,p-Xylene	1.246	1.258	-1.0	82	0.00
64		o-Xylene	1.277	1.290	-1.0	82	0.00
65		Styrene	1.041	1.053	-1.2	81	0.00
66	P	Bromoform	0.258	0.253	1.9	76	0.00
67	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	79	0.00
68		Isopropylbenzene	2.688	2.978	-10.8	83	0.00
69		Cyclohexanone	0.024	0.022	8.3	72	0.00
70	S	4-Bromofluorobenzene	0.973	1.018	-4.6	83	0.00
71	P	1,1,2,2-Tetrachloroethane	0.827	0.828	-0.1	83	0.00
72		trans-1,4-Dichloro-2-butene	0.230	0.252	-9.6	81	0.00
73		1,2,3-Trichloropropane	0.228	0.225	1.3	81	0.00
74		Bromobenzene	0.786	0.783	0.4	80	0.00
75		n-Propylbenzene	3.580	3.809	-6.4	82	0.00
76		1,3,5-Trimethylbenzene	2.375	2.559	-7.7	84	0.00
77		2-Chlorotoluene	2.406	2.517	-4.6	83	0.00
78		4-Chlorotoluene	2.201	2.374	-7.9	84	0.00
79		tert-Butylbenzene	1.557	1.753	-12.6	83	0.00
80		1,2,4-Trimethylbenzene	2.503	2.727	-8.9	83	0.00
81		sec-Butylbenzene	2.980	3.317	-11.3	83	0.00
82		4-Isopropyltoluene	2.411	2.703	-12.1	83	0.00
83		1,3-Dichlorobenzene	1.398	1.500	-7.3	85	0.00
84		1,4-Dichlorobenzene	1.435	1.536	-7.0	85	0.00
85		Benzyl chloride	1.316	1.571	-19.4	88	0.00
86		n-Butylbenzene	2.350	2.619	-11.4	84	0.00
87		1,2-Dichlorobenzene	1.336	1.453	-8.8	86	0.00
88		1,2-Dibromo-3-Chloropropane	0.133	0.133	0.0	77	0.00
89		1,2,4-Trichlorobenzene	0.858	0.943	-9.9	81	0.00
90		Hexachlorobutadiene	0.424	0.401	5.4	77	0.00
91		Naphthalene	1.884	2.093	-11.1	81	0.00
92		1,2,3-Trichlorobenzene	0.765	0.804	-5.1	79	0.00
93	I	Tert Butyl alcohol-d10	1.000	1.000	0.0	76	0.00
94		Tert-Butyl alcohol	1.936	1.844	4.8	72	0.00
95		1,4-Dioxane	0.202	0.206	-2.0	76	0.00

Average % D = 5.6

Continuing Calibration Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample: VC743-CC737
Lab FileID: C0016752.D

```
(#) = Out of Range                SPCC's out = 0  CCC's out = 0
 C0016635.D 82600620.M        Mon Jun 30 09:50:06 2003   RPT1
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Continuing Calibration Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample: VC744-CC737
Lab FileID: C0016779.D

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\063003\C0016779.D Vial: 1
Acq On : 30 Jun 2003 1:55 pm Operator: KarenW
Sample : CC737-40 Inst : MSVOA5
Misc : ms2361,vc744,,,,, Multiplr: 1.00
MS Integration Params: Rteint.p

Method : C:\MSDCHEM\2\METHODS\82600620.M (RTE Integrator)
Title : EPA 624 & SWA 5030B/8260B
Last Update : Fri Jun 20 14:15:37 2003
Response via : Multiple Level Calibration

Min. RRF : 0.001 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.000	1.000	0.0	84	0.00
2		Dichlorodifluoromethane	0.256	0.283	-10.5	86	0.00
3	P	Chloromethane	0.412	0.425	-3.2	84	0.00
4	C	Vinyl Chloride	0.306	0.315	-2.9	82	0.00
5		Bromomethane	0.163	0.166	-1.8	85	0.00
6		Chloroethane	0.142	0.141	0.7	81	0.00
7		Trichlorofluoromethane	0.298	0.352	-18.1	96	0.00
8		Ethyl ether	0.244	0.449	-84.0#	150	0.00
9		Acrolein	0.027	0.027	0.0	84	0.00
10		Freon 113	0.261	0.261	0.0	85	0.00
11		Acetone	0.113	0.095	15.9	70	0.00
12	C	1,1-Dichloroethene	0.481	0.443	7.9	76	0.00
13		Iodomethane	0.401	0.403	-0.5	84	0.00
14		Methyl Acetate	0.244	0.235	3.7	81	0.00
15		Carbon Disulfide	0.853	0.836	2.0	81	0.00
16		Methylene Chloride	0.542	0.475	12.4	76	0.00
17		Acrylonitrile	0.116	0.103	11.2	77	0.00
18		Methyl Tert Butyl Ether	0.640	0.624	2.5	79	0.00
19		trans-1,2-Dichloroethene	0.434	0.395	9.0	76	0.00
20		Hexane	0.402	0.393	2.2	79	0.00
21		Vinyl acetate	0.724	0.763	-5.4	83	0.00
22		Di-isopropyl ether	1.137	1.048	7.8	76	0.00
23	P	1,1-Dichloroethane	0.515	0.474	8.0	76	0.00
24		ETBE	0.703	0.610	13.2	71	0.00
25		2-Butanone	0.164	0.149	9.1	75	0.00
26		cis-1,2-Dichloroethene	0.293	0.276	5.8	80	0.00
27		2,2-Dichloropropane	0.199	0.203	-2.0	83	0.00
28		Bromochloromethane	0.138	0.137	0.7	84	0.00
29	C	Chloroform	0.459	0.436	5.0	81	0.00
30		Tetrahydrofuran	0.097	0.095	2.1	78	0.00
31	S	Dibromofluoromethane	0.251	0.259	-3.2	87	0.00
32		1,1,1-Trichloroethane	0.363	0.352	3.0	81	0.00
33		Cyclohexane	0.531	0.509	4.1	76	0.00
34		1,1-Dichloropropene	0.341	0.321	5.9	77	0.00
35		Carbon Tetrachloride	0.339	0.333	1.8	81	0.00
36	S	1,2-Dichloroethane-d4	0.291	0.277	4.8	81	0.00
37		1,2-Dichloroethane	0.390	0.361	7.4	78	0.00
38		Benzene	1.075	0.993	7.6	77	0.00
39		TAME	0.533	0.462	13.3	72	0.00
40		Trichloroethene	0.276	0.259	6.2	78	0.00
41	C	1,2-Dichloropropane	0.310	0.286	7.7	75	0.00
42		Methylcyclohexane	0.412	0.412	0.0	78	0.00

Continuing Calibration Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample: VC744-CC737
Lab FileID: C0016779.D

43		Dibromomethane	0.173	0.170	1.7	82	0.00
44		Bromodichloromethane	0.360	0.343	4.7	80	0.00
45		2-Nitropropane	0.080	0.078	2.5	81	0.00
46		2-Chloroethyl vinyl ether	0.060	0.050	16.7	69	0.00
47		cis-1,3-Dichloropropene	0.439	0.434	1.1	80	0.00
48		4-Methyl-2-pentanone	0.342	0.329	3.8	79	0.00
49	I	Chlorobenzene-d5	1.000	1.000	0.0	89	0.00
50	S	Toluene-d8	1.231	1.183	3.9	86	0.00
51	C	Toluene	1.468	1.294	11.9	79	0.00
52		trans-1,3-Dichloropropene	0.496	0.460	7.3	79	0.00
53		1,1,2-Trichloroethane	0.275	0.246	10.5	79	0.00
54		2-hexanone	0.304	0.274	9.9	76	0.00
55		1,3-Dichloropropane	0.551	0.500	9.3	80	0.00
56		Tetrachloroethene	0.353	0.324	8.2	81	0.00
57		Dibromochloromethane	0.353	0.332	5.9	82	0.00
58		1,2-Dibromoethane	0.322	0.314	2.5	85	0.00
59		1-Chlorohexane	0.451	0.418	7.3	80	0.00
60	P	Chlorobenzene	1.000	0.909	9.1	81	0.00
61		1,1,1,2-Tetrachloroethane	0.340	0.317	6.8	82	0.00
62	C	Ethylbenzene	1.616	1.461	9.6	78	0.00
63		m,p-Xylene	1.246	1.133	9.1	79	0.00
64		o-Xylene	1.277	1.175	8.0	78	0.00
65		Styrene	1.041	0.944	9.3	77	0.00
66	P	Bromoform	0.258	0.234	9.3	78	0.00
67	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	86	0.00
68		Isopropylbenzene	2.688	2.601	3.2	80	0.00
69		Cyclohexanone	0.024	0.022	8.3	85	0.00
70	S	4-Bromofluorobenzene	0.973	0.989	-1.6	90	0.00
71	P	1,1,2,2-Tetrachloroethane	0.827	0.804	2.8	86	0.00
72		trans-1,4-Dichloro-2-butene	0.230	0.198	13.9	73	0.00
73		1,2,3-Trichloropropane	0.228	0.223	2.2	88	0.00
74		Bromobenzene	0.786	0.710	9.7	77	0.00
75		n-Propylbenzene	3.580	3.366	6.0	79	0.00
76		1,3,5-Trimethylbenzene	2.375	2.318	2.4	81	0.00
77		2-Chlorotoluene	2.406	2.254	6.3	80	0.00
78		4-Chlorotoluene	2.201	2.082	5.4	81	0.00
79		tert-Butylbenzene	1.557	1.544	0.8	80	0.00
80		1,2,4-Trimethylbenzene	2.503	2.440	2.5	81	0.00
81		sec-Butylbenzene	2.980	2.933	1.6	81	0.00
82		4-Isopropyltoluene	2.411	2.399	0.5	82	0.00
83		1,3-Dichlorobenzene	1.398	1.357	2.9	84	0.00
84		1,4-Dichlorobenzene	1.435	1.399	2.5	85	0.00
85		Benzyl chloride	1.316	1.451	-10.3	90	0.00
86		n-Butylbenzene	2.350	2.317	1.4	81	0.00
87		1,2-Dichlorobenzene	1.336	1.327	0.7	85	0.00
88		1,2-Dibromo-3-Chloropropane	0.133	0.126	5.3	80	0.00
89		1,2,4-Trichlorobenzene	0.858	0.833	2.9	80	0.00
90		Hexachlorobutadiene	0.424	0.364	14.2	77	0.00
91		Naphthalene	1.884	2.052	-8.9	91	0.00
92		1,2,3-Trichlorobenzene	0.765	0.761	0.5	85	0.00
93	I	Tert Butyl alcohol-d10	1.000	1.000	0.0	88	0.00
94		Tert-Butyl alcohol	1.936	1.799	7.1	81	0.00
95		1,4-Dioxane	0.202	0.202	0.0	84	0.00

Average % D = 6.6

Continuing Calibration Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample: VC744-CC737
Lab FileID: C0016779.D

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(#) = Out of Range                SPCC's out = 0  CCC's out = 0
 C0016634.D 82600620.M       Tue Jul 01 09:04:23 2003   RPT1
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GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries
- GC Surrogate Retention Time Summaries
- Initial and Continuing Calibration Summaries

Blank Spike Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7863 BS	EE016314.D	1	06/30/03	NJ	06/28/03	OP7863	GEE689

The QC reported here applies to the following samples: Method: EPA 8310

F18314-1, F18314-3, F18314-4, F18314-5, F18314-6, F18314-7, F18314-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
83-32-9	Acenaphthene	20	15.3	77	52-104
208-96-8	Acenaphthylene	20	14.7	74	51-103
120-12-7	Anthracene	20	17.2	86	60-112
56-55-3	Benzo(a)anthracene	10	8.3	83	64-111
50-32-8	Benzo(a)pyrene	10	8.3	83	56-118
205-99-2	Benzo(b)fluoranthene	10	8.3	83	63-117
191-24-2	Benzo(g,h,i)perylene	10	8.5	85	45-118
207-08-9	Benzo(k)fluoranthene	10	8.3	83	56-118
218-01-9	Chrysene	10	8.6	86	67-112
53-70-3	Dibenzo(a,h)anthracene	10	8.5	85	41-119
206-44-0	Fluoranthene	20	16.1	81	61-111
86-73-7	Fluorene	20	15.3	77	54-105
193-39-5	Indeno(1,2,3-cd)pyrene	10	8.4	84	46-118
91-20-3	Naphthalene	20	13.2	66	44-105
90-12-0	1-Methylnaphthalene	20	13.9	70	47-102
91-57-6	2-Methylnaphthalene	20	14.1	71	47-101
85-01-8	Phenanthrene	20	15.7	79	55-109
129-00-0	Pyrene	20	16.0	80	61-109

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	75%	32-142%
92-94-4	p-Terphenyl	87%	30-128%

Blank Spike Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7865-BS	OP30320.D	1	07/02/03	SM	06/30/03	OP7865	GOP1020

The QC reported here applies to the following samples: Method: FLORIDA-PRO

F18314-1, F18314-3, F18314-4, F18314-5, F18314-6, F18314-7, F18314-8

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH (C8-C40)	0.85	0.665	78	59-109

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	80%	51-125%

Method Blank Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7863-MB	EE016315.D	1	06/30/03	NJ	06/28/03	OP7863	GEE689

The QC reported here applies to the following samples: Method: EPA 8310

F18314-1, F18314-3, F18314-4, F18314-5, F18314-6, F18314-7, F18314-8

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.0	1.0	ug/l	
208-96-8	Acenaphthylene	ND	4.0	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	0.50	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	0.50	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.0	0.50	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.0	0.50	ug/l	
85-01-8	Phenanthrene	ND	2.0	1.0	ug/l	
129-00-0	Pyrene	ND	2.0	0.50	ug/l	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	71%	32-142%
92-94-4	p-Terphenyl	80%	30-128%

Method Blank Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7865-MB	OP30321.D	1	07/02/03	SM	06/30/03	OP7865	GOP1020

The QC reported here applies to the following samples: Method: FLORIDA-PRO

F18314-1, F18314-3, F18314-4, F18314-5, F18314-6, F18314-7, F18314-8

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	ND	0.25	0.17	mg/l	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	90%	51-125%

Method Blank Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7865-MB	OP30356.D	1	07/03/03	SM	06/30/03	OP7865	GOP1021

The QC reported here applies to the following samples: Method: FLORIDA-PRO

F18314-1, F18314-3, F18314-4, F18314-5, F18314-6, F18314-7, F18314-8

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	ND	0.25	0.17	mg/l	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	95%	51-125%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7863-MS	EE016318.D	1	06/30/03	NJ	06/28/03	OP7863	GEE689
OP7863-MSD	EE016319.D	1	06/30/03	NJ	06/28/03	OP7863	GEE689
F18314-3 [a]	EE016317.D	1	06/30/03	NJ	06/28/03	OP7863	GEE689

The QC reported here applies to the following samples: Method: EPA 8310

F18314-1, F18314-3, F18314-4, F18314-5, F18314-6, F18314-7, F18314-8

CAS No.	Compound	F18314-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	1.4	J	41.7	32.6	75	33.0	76	1	20-140/45
208-96-8	Acenaphthylene	ND		41.7	31.6	76	31.9	77	1	17-141/46
120-12-7	Anthracene	ND		41.7	35.7	86	36.9	89	3	48-123/23
56-55-3	Benzo(a)anthracene	ND		20.8	17.1	82	17.8	85	4	42-134/22
50-32-8	Benzo(a)pyrene	ND		20.8	17.4	84	17.9	86	3	55-119/23
205-99-2	Benzo(b)fluoranthene	ND		20.8	17.5	84	18.0	86	3	58-118/22
191-24-2	Benzo(g,h,i)perylene	ND		20.8	17.8	85	18.2	87	2	57-118/23
207-08-9	Benzo(k)fluoranthene	ND		20.8	17.4	84	17.9	86	3	58-120/22
218-01-9	Chrysene	ND		20.8	17.7	85	18.3	88	3	49-137/23
53-70-3	Dibenzo(a,h)anthracene	ND		20.8	17.8	85	18.2	87	2	57-120/23
206-44-0	Fluoranthene	ND		41.7	34.0	82	35.6	85	5	55-117/22
86-73-7	Fluorene	1.5	J	41.7	32.8	75	33.7	77	3	25-135/38
193-39-5	Indeno(1,2,3-cd)pyrene	ND		20.8	17.6	84	18.0	86	2	57-118/22
91-20-3	Naphthalene	ND		41.7	27.8	67	28.5	68	2	18-129/45
90-12-0	1-Methylnaphthalene	ND		41.7	28.3	68	28.9	69	2	18-131/46
91-57-6	2-Methylnaphthalene	5.1		41.7	33.0	67	33.6	68	2	12-135/48
85-01-8	Phenanthrene	ND		41.7	33.8	81	34.7	83	3	39-129/27
129-00-0	Pyrene	ND		41.7	33.1	79	34.9	84	5	57-116/21

CAS No.	Surrogate Recoveries	MS	MSD	F18314-3	Limits
84-15-1	o-Terphenyl	81%	84%	89%	32-142%
92-94-4	p-Terphenyl	84%	89%	72%	30-128%

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

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7865-MS	OP30323.D	4	07/02/03	SM	06/30/03	OP7865	GOP1020
OP7865-MSD	OP30324.D	4	07/02/03	SM	06/30/03	OP7865	GOP1020
F18335-1A	OP30322.D	4	07/02/03	SM	06/30/03	OP7865	GOP1020

The QC reported here applies to the following samples: Method: FLORIDA-PRO

F18314-1, F18314-3, F18314-4, F18314-5, F18314-6, F18314-7, F18314-8

CAS No.	Compound	F18335-1A mg/l	Q	Spike mg/l	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH (C8-C40)	2.30		1.77	4.33	115	4.09	101	6	38-133/23

CAS No.	Surrogate Recoveries	MS	MSD	F18335-1A	Limits
84-15-1	o-Terphenyl	96%	91%	87%	51-125%

Semivolatile Surrogate Recovery Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Method: EPA 8310 Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S2 [a]
F18314-1	EE016377.D	70.0	64.0
F18314-3	EE016317.D	89.0	72.0
F18314-4	EE016370.D	122.0	66.0
F18314-4	EE016320.D	123.0	62.0
F18314-5	EE016321.D	72.0	86.0
F18314-6	EE016322.D	74.0	83.0
F18314-7	EE016323.D	63.0	72.0
F18314-8	EE016325.D	67.0	76.0
OP7863-BS	EE016314.D	75.0	87.0
OP7863-MB	EE016315.D	71.0	80.0
OP7863-MS	EE016318.D	81.0	84.0
OP7863-MSD	EE016319.D	84.0	89.0

Surrogate Compounds	Recovery Limits
S1 = o-Terphenyl	32-142%
S2 = p-Terphenyl	30-128%

(a) Recovery from GC signal #1

Semivolatile Surrogate Recovery Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Method: FLORIDA-PRO Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]
F18314-1	OP30339.D	80.0
F18314-3	OP30340.D	83.0
F18314-4	OP30341.D	79.0
F18314-5	OP30342.D	82.0
F18314-6	OP30343.D	80.0
F18314-7	OP30344.D	79.0
F18314-8	OP30345.D	84.0
OP7865-BS	OP30320.D	80.0
OP7865-MB	OP30321.D	90.0
OP7865-MB	OP30356.D	95.0
OP7865-MS	OP30323.D	96.0
OP7865-MSD	OP30324.D	91.0

Surrogate Compounds	Recovery Limits
S1 = o-Terphenyl	51-125%

(a) Recovery from GC signal #1

GC Surrogate Retention Time Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Check Std:	GEE689-CC666	Injection Date:	06/30/03
Lab File ID:	EE016313.D	Injection Time:	17:32
Instrument ID:	GCEE	Method:	EPA 8310

	S1 [a] RT	S2 [a] RT
Check Std	7.68	10.18

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S2 [a] RT
OP7863-BS	EE016314.D	06/30/03	17:53	7.68	10.19
OP7863-MB	EE016315.D	06/30/03	18:14	7.68	10.18
F18314-3	EE016317.D	06/30/03	18:56	7.65	10.18
OP7863-MS	EE016318.D	06/30/03	19:18	7.68	10.19
OP7863-MSD	EE016319.D	06/30/03	19:39	7.67	10.19
F18314-4	EE016320.D	06/30/03	20:00	7.67	10.19
F18314-5	EE016321.D	06/30/03	20:21	7.68	10.19
F18314-6	EE016322.D	06/30/03	20:42	7.67	10.18
F18314-7	EE016323.D	06/30/03	21:04	7.68	10.19

Surrogate Compounds

S1 = o-Terphenyl
S2 = p-Terphenyl

(a) Retention time from GC signal #1

GC Surrogate Retention Time Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Check Std:	GEE689-CC666	Injection Date:	06/30/03
Lab File ID:	EE016324.D	Injection Time:	21:25
Instrument ID:	GCEE	Method:	EPA 8310

	S1 [a] RT	S2 [a] RT
Check Std	7.67	10.19

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S2 [a] RT
F18314-8	EE016325.D	06/30/03	21:46	7.67	10.19
ZZZZZZ	EE016326.D	06/30/03	22:07	7.68	10.19
ZZZZZZ	EE016327.D	06/30/03	22:28	7.67	10.19
ZZZZZZ	EE016328.D	06/30/03	22:49	7.67	10.19
ZZZZZZ	EE016329.D	06/30/03	23:11	7.67	10.19
ZZZZZZ	EE016330.D	06/30/03	23:32	7.67	10.19
ZZZZZZ	EE016331.D	06/30/03	23:53	7.67	10.19
ZZZZZZ	EE016332.D	07/01/03	00:14	7.67	10.19
ZZZZZZ	EE016333.D	07/01/03	00:35	7.67	10.19
ZZZZZZ	EE016334.D	07/01/03	00:57	7.67	10.19

Surrogate Compounds

S1 = o-Terphenyl
S2 = p-Terphenyl

(a) Retention time from GC signal #1

GC Surrogate Retention Time Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Check Std:	GEE689-CC666	Injection Date:	07/01/03
Lab File ID:	EE016367.D	Injection Time:	12:36
Instrument ID:	GCEE	Method:	EPA 8310

	S1 [a] RT	S1 [b] RT	S2 [a] RT	S2 [b] RT
Check Std	7.67	7.67	10.17	10.17

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT	S2 [a] RT	S2 [b] RT
ZZZZZZ	EE016368.D	07/01/03	12:57	7.66		10.18	
ZZZZZZ	EE016369.D	07/01/03	13:18	7.67		10.19	
F18314-4	EE016370.D	07/01/03	13:39	7.66		10.18	
OP7848-MB	EE016371.D	07/01/03	14:00	7.67		10.17	
ZZZZZZ	EE016372.D	07/01/03	14:22	7.66		10.17	
ZZZZZZ	EE016373.D	07/01/03	14:43	0.00		0.00	
ZZZZZZ	EE016374.D	07/01/03	15:04	7.67		10.18	
ZZZZZZ	EE016375.D	07/01/03	15:25	7.67		10.18	
ZZZZZZ	EE016376.D	07/01/03	15:47	7.62		10.17	
F18314-1	EE016377.D	07/01/03	16:08	7.67		10.17	
GEE689-ECC666	EE016378.D	07/01/03	16:29	7.67	7.67	10.17	10.17

Surrogate
Compounds

S1 = o-Terphenyl
S2 = p-Terphenyl

(a) Retention time from GC signal #1
(b) Retention time from GC signal #2

GC Surrogate Retention Time Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Check Std:	GOP1020-CC1017	Injection Date:	07/02/03
Lab File ID:	OP30338.D	Injection Time:	20:30
Instrument ID:	GCOP	Method:	FLORIDA-PRO

	S1 [a] RT
Check Std	5.07

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT
F18314-1	OP30339.D	07/02/03	20:53	5.07
F18314-3	OP30340.D	07/02/03	21:15	5.07
F18314-4	OP30341.D	07/02/03	21:38	5.07
F18314-5	OP30342.D	07/02/03	22:00	5.07
F18314-6	OP30343.D	07/02/03	22:23	5.07
F18314-7	OP30344.D	07/02/03	22:45	5.07
F18314-8	OP30345.D	07/02/03	23:08	5.07
GOP1020-ECC1010	OP30346.D	07/02/03	23:30	5.07

Surrogate Compounds

S1 = o-Terphenyl

(a) Retention time from GC signal #1

GC Surrogate Retention Time Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Check Std:	GOP1020-CC1017	Injection Date:	07/02/03
Lab File ID:	OP30317.D	Injection Time:	12:02
Instrument ID:	GCOP	Method:	FLORIDA-PRO

	S1 [a] RT
Check Std	5.07

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT
OP7865-BS	OP30320.D	07/02/03	13:33	5.07
OP7865-MB	OP30321.D	07/02/03	13:56	5.07
F18335-1A	OP30322.D	07/02/03	14:19	5.07
OP7865-MS	OP30323.D	07/02/03	14:42	5.07
OP7865-MSD	OP30324.D	07/02/03	15:05	5.07

Surrogate Compounds

S1 = o-Terphenyl

(a) Retention time from GC signal #1

GC Surrogate Retention Time Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Check Std:	GOP1021-ICC1021	Injection Date:	07/03/03
Lab File ID:	OP30349.D	Injection Time:	12:37
Instrument ID:	GCOP	Method:	FLORIDA-PRO

	S1 [a] RT
Check Std	5.07

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT
OP7865-MB	OP30356.D	07/03/03	15:16	5.07
ZZZZZZ	OP30357.D	07/03/03	15:39	5.07
ZZZZZZ	OP30358.D	07/03/03	16:02	5.07
ZZZZZZ	OP30359.D	07/03/03	16:24	5.07

Surrogate Compounds

S1 = o-Terphenyl

(a) Retention time from GC signal #1

Initial Calibration Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample: GEE666-ICC666
Lab FileID: EE015565.D

Response Factor Report G1315A

Method : C:\HPCHEM\2\METHODS\8310_32.M (Chemstation Integrator)
Title : PAH's BY EPA 8310
Last Update : Thu Jun 05 13:41:21 2003
Response via : Initial Calibration

Calibration Files
L1 =EE015562.D L2 =EE015563.D L3 =EE015564.D
L4 =EE015565.D L5 =EE015566.D L6 =EE015567.D

		Compound	L1	L2	L3	L4	L5	L6	Avg		%RSD
1)		Naphthalene	8.577	7.299	6.963	6.710	6.685	6.779	7.169	E5	10.13
2)		Acenaphthylene	3.352	2.814	2.730	2.628	2.624	2.648	2.799	E5	10.02
3)		1-Methyl Naphthalen	7.403	6.167	5.824	5.633	5.603	5.710	6.057	E5	11.40
4)		2-Methyl Naphthalen	7.014	6.152	5.795	5.594	5.588	5.666	5.968	E5	9.28
5)		Acenaphthene	5.053	4.699	4.452	4.290	4.267	4.329	4.515	E5	6.82
6)		Fluorene	1.959	1.696	1.607	1.552	1.542	1.567	1.654	E6	9.66
7)		Phenanthrene	1.749	1.488	1.409	1.355	1.343	1.364	1.452	E6	10.68
8)	S	O-Terphenyl	7.024	5.925	5.756	5.562	5.532	5.623	5.904	E5	9.61
9)		Anthracene		1.892	1.535	1.415	1.345	1.341	1.506	E5	15.26
10)		Fluoranthene	1.450	1.233	1.162	1.138	1.130	1.145	1.210	E6	10.22
11)		Pyrene	2.302	1.945	1.832	1.745	1.711	1.712	1.875	E6	12.16
12)	S	P-Terphenyl	2.266	1.965	1.867	1.813	1.805	1.832	1.925	E6	9.19
13)		Benzo(a)Anthracene	3.770	3.265	3.032	2.941	2.920	2.958	3.148	E6	10.49
14)		Chrysene		4.197	3.781	3.610	3.559	3.559	3.741	E6	7.24
15)		Benzo(b)Fluoranthen	1.693	1.457	1.391	1.345	1.337	1.361	1.431	E6	9.50
16)		Benzo(k)Fluoranthen	9.651	8.228	7.864	7.620	7.576	7.709	8.108	E5	9.76
17)		Benzo(a) Pyrene	1.883	1.587	1.516	1.467	1.460	1.484	1.566	E6	10.35
18)		Dibenzo(a,h)anthrac	1.350	1.148	1.095	1.061	1.054	1.078	1.131	E6	9.95
19)		Benzo(g,h,i) Peryle	9.329	7.992	7.641	7.458	7.431	7.537	7.898	E5	9.24
20)		Indeno(1,2,3-cd)pyr	7.310	6.142	5.911	5.663	5.632	5.740	6.066	E5	10.51

Signal #2

1)		Naphthalene	5.252	4.271	4.169	4.008	3.986	4.039	4.287	E5	11.31
2)		Acenaphthylene	3.680	2.902	2.809	2.688	2.693	2.694	2.911	E5	13.27
3)		1-Methyl Naphthalen	3.455	2.742	2.565	2.477	2.473	2.501	2.702	E5	14.15
4)		2-Methyl Naphthalen	4.824	3.786	3.552	3.431	3.439	3.471	3.751	E5	14.46
5)		Acenaphthene	1.782	1.843	1.608	1.547	1.545	1.551	1.646	E5	8.04
6)		Fluorene	2.188	1.913	1.811	1.753	1.745	1.769	1.863	E6	9.18
7)		Phenanthrene	5.939	5.050	4.751	4.554	4.480	4.475	4.875	E6	11.59
8)	S	O-Terphenyl	1.134	0.991	0.946	0.928	0.922	0.936	0.976	E6	8.34
9)		Anthracene	1.271	1.065	0.931	0.795	0.678	0.594	0.889	E7	28.39

----- Quadratic regression ----- Coefficient = 0.9995
Response Ratio = 2494436.77967 + 9746411.54389 *A + -97657.14901 *A^2

10)		Fluoranthene	1.398	1.191	1.124	1.119	1.113	1.126	1.179	E6	9.44
11)		Pyrene	1.321	1.112	1.058	1.021	1.013	1.022	1.091	E6	10.85
12)	S	P-Terphenyl	1.122	0.970	0.922	0.892	0.888	0.904	0.950	E6	9.41
13)		Benzo(a)Anthracene	2.787	2.365	2.241	2.170	2.158	2.197	2.320	E6	10.39
14)		Chrysene	3.944	3.394	3.122	3.005	2.980	3.017	3.244	E6	11.58
15)		Benzo(b)Fluoranthen	1.508	1.307	1.248	1.205	1.196	1.213	1.279	E6	9.31
16)		Benzo(k)Fluoranthen	2.242	1.921	1.825	1.766	1.755	1.785	1.882	E6	9.89
17)		Benzo(a) Pyrene	1.545	1.296	1.232	1.189	1.180	1.194	1.273	E6	11.01
18)		Dibenzo(a,h)anthrac	3.545	3.001	2.834	2.725	2.688	2.714	2.918	E6	11.25
19)		Benzo(g,h,i) Peryle	1.526	1.303	1.240	1.204	1.197	1.216	1.281	E6	9.85
20)		Indeno(1,2,3-cd)pyr	9.975	8.467	8.119	7.818	7.782	7.924	8.347	E5	10.02

(#) = Out of Range

Initial Calibration Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample: GEE666-ICC666
Lab FileID: EE015565.D

8310_32.M Thu Jun 05 13:56:07 2003

Continuing Calibration Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample: GEE689-CC666
Lab FileID: EE016313.D

Evaluate Continuing Calibration Report

Signal #1 : E:\HPCHEM\1\DATA\0630APAH\EE016313.D\DAD1B.CH Vial: 2
Signal #2 : E:\HPCHEM\1\DATA\0630APAH\EE016313.D\DAD1A.CH
Acq On : 30-Jun-2003, 17:32:13 Operator: NARESHJ
Sample : CC666-10 Inst : G1315A
Misc : op7863,gee689,1000,,,1,,water Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e

Method : C:\HPCHEM\2\METHODS\8310_32.M (Chemstation Integrator)
Title : PAH's BY EPA 8310
Last Update : Fri Jun 27 11:12:44 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	10.000	9.678	3.2	100	0.00
2		Acenaphthylene	10.000	9.690	3.1	99	0.00
3		1-Methyl Naphthalene	10.000	9.695	3.0	101	0.00
4		2-Methyl Naphthalene	10.000	9.834	1.7	101	0.00
5		Acenaphthene	10.000	10.124	-1.2	103	0.00
6		Fluorene	10.000	9.895	1.1	102	0.00
7		Phenanthrene	10.000	9.899	1.0	102	0.00
8	S	O-Terphenyl	10.000	10.169	-1.7	104	0.00
9		Anthracene	10.000	10.838	-8.4	106	0.00
10		Fluoranthene	10.000	9.858	1.4	103	0.00
11		Pyrene	10.000	9.858	1.4	101	0.00
12	S	P-Terphenyl	10.000	9.939	0.6	102	0.00
13		Benzo(a)Anthracene	5.000	4.925	1.5	102	0.00
14		Chrysene	5.000	5.115	-2.3	101	0.00
15		Benzo(b)Fluoranthene	5.000	4.934	1.3	102	0.00
16		Benzo(k)Fluoranthene	5.000	4.920	1.6	101	0.00
17		Benzo(a) Pyrene	5.000	4.868	2.6	101	0.00
18		Dibenzo(a,h)anthracene	5.000	4.978	0.4	103	0.00
19		Benzo(g,h,i) Perylene	5.000	4.935	1.3	102	0.00
20		Indeno(1,2,3-cd)pyrene	5.000	4.932	1.4	101	0.00

Signal #2

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	10.000	9.679	3.2	100	0.00
2		Acenaphthylene	10.000	9.611	3.9	100	0.00
3		1-Methyl Naphthalene	10.000	9.584	4.2	101	0.00
4		2-Methyl Naphthalene	10.000	9.569	4.3	101	0.00
5		Acenaphthene	10.000	10.092	-0.9	103	0.00
6		Fluorene	10.000	9.864	1.4	102	0.00
7		Phenanthrene	10.000	9.905	1.0	102	0.00
8	S	O-Terphenyl	10.000	10.491	-4.9	108	0.00
9		Anthracene	10.000	10.702	-7.0	103	0.00
10		Fluoranthene	10.000	10.314	-3.1	108	0.00
11		Pyrene	10.000	10.222	-2.2	105	0.00
12	S	P-Terphenyl	10.000	9.902	1.0	102	0.00
13		Benzo(a)Anthracene	5.000	4.898	2.0	101	0.00
14		Chrysene	5.000	4.869	2.6	101	0.00
15		Benzo(b)Fluoranthene	5.000	4.939	1.2	101	0.00

Continuing Calibration Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample: GEE689-CC666
Lab FileID: EE016313.D

16	Benzo(k)Fluoranthene	5.000	4.891	2.2	101	0.00
17	Benzo(a) Pyrene	5.000	4.873	2.5	101	0.00
18	Dibenzo(a,h)anthracene	5.000	4.999	0.0	103	0.00
19	Benzo(g,h,i) Perylene	5.000	4.925	1.5	102	0.00
20	Indeno(1,2,3-cd)pyrene	5.000	4.922	1.6	101	0.00

Average % D = 2.3

(#) = Out of Range SPCC's out = 0 CCC's out = 0
EE015564.D 8310_32.M Tue Jul 01 14:45:16 2003

Continuing Calibration Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample: GEE689-CC666
Lab FileID: EE016324.D

Evaluate Continuing Calibration Report

Signal #1 : E:\HPCHEM\1\DATA\0630APAH\EE016324.D\DAD1B.CH Vial: 3
Signal #2 : E:\HPCHEM\1\DATA\0630APAH\EE016324.D\DAD1A.CH
Acq On : 30-Jun-2003, 21:25:12 Operator: NARESHJ
Sample : CC666-20 Inst : G1315A
Misc : op7863,gee689,1000,,,1,,water Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e

Method : C:\HPCHEM\2\METHODS\8310_32.M (Chemstation Integrator)
Title : PAH's BY EPA 8310
Last Update : Fri Jun 27 11:12:44 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	20.000	18.858	5.7	101	-0.01
2		Acenaphthylene	20.000	19.154	4.2	102	-0.01
3		1-Methyl Naphthalene	20.000	18.828	5.9	101	-0.01
4		2-Methyl Naphthalene	20.000	19.088	4.6	102	-0.01
5		Acenaphthene	20.000	19.709	1.5	104	0.00
6		Fluorene	20.000	19.233	3.8	102	0.00
7		Phenanthrene	20.000	19.249	3.8	103	0.00
8	S	O-Terphenyl	20.000	19.859	0.7	105	0.00
9		Anthracene	20.000	20.047	-0.2	107	0.00
10		Fluoranthene	20.000	19.280	3.6	103	0.00
11		Pyrene	20.000	19.211	3.9	103	0.00
12	S	P-Terphenyl	20.000	19.362	3.2	103	0.00
13		Benzo(a)Anthracene	10.000	9.656	3.4	103	0.00
14		Chrysene	10.000	10.015	-0.2	104	0.00
15		Benzo(b)Fluoranthene	10.000	9.577	4.2	102	0.00
16		Benzo(k)Fluoranthene	10.000	9.513	4.9	101	0.00
17		Benzo(a) Pyrene	10.000	9.518	4.8	102	0.00
18		Dibenzo(a,h)anthracene	10.000	9.685	3.1	103	0.00
19		Benzo(g,h,i) Perylene	10.000	9.647	3.5	102	0.00
20		Indeno(1,2,3-cd)pyrene	10.000	9.581	4.2	103	0.00

Signal #2

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	20.000	18.672	6.6	100	-0.01
2		Acenaphthylene	20.000	18.652	6.7	101	-0.01
3		1-Methyl Naphthalene	20.000	18.554	7.2	101	-0.01
4		2-Methyl Naphthalene	20.000	18.525	7.4	101	-0.01
5		Acenaphthene	20.000	19.495	2.5	104	0.00
6		Fluorene	20.000	19.206	4.0	102	0.00
7		Phenanthrene	20.000	19.156	4.2	103	0.00
8	S	O-Terphenyl	20.000	20.527	-2.6	108	0.00
9		Anthracene	20.000	21.115	-5.6	104	0.00
10		Fluoranthene	20.000	20.170	-0.9	106	0.00
11		Pyrene	20.000	20.220	-1.1	108	0.00
12	S	P-Terphenyl	20.000	19.286	3.6	103	0.00
13		Benzo(a)Anthracene	10.000	9.557	4.4	102	0.00
14		Chrysene	10.000	9.471	5.3	102	0.00
15		Benzo(b)Fluoranthene	10.000	9.589	4.1	102	0.00

Continuing Calibration Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample: GEE689-CC666
Lab FileID: EE016324.D

16	Benzo(k)Fluoranthene	10.000	9.639	3.6	103	0.00
17	Benzo(a) Pyrene	10.000	9.604	4.0	103	0.00
18	Dibenzo(a,h)anthracene	10.000	9.650	3.5	103	0.00
19	Benzo(g,h,i) Perylene	10.000	9.623	3.8	102	0.00
20	Indeno(1,2,3-cd)pyrene	10.000	9.647	3.5	103	0.00

Average % D = 3.9

(#) = Out of Range SPCC's out = 0 CCC's out = 0
EE015565.D 8310_32.M Wed Jul 02 10:35:55 2003

Continuing Calibration Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample: GEE689-CC666
Lab FileID: EE016335.D

Evaluate Continuing Calibration Report

Signal #1 : E:\HPCHEM\1\DATA\0630APAH\EE016335.D\DAD1B.CH Vial: 3
Signal #2 : E:\HPCHEM\1\DATA\0630APAH\EE016335.D\DAD1A.CH
Acq On : 01-Jul-2003, 01:18:12 Operator: NARESHJ
Sample : CC666-20 Inst : G1315A
Misc : op7863,gee689,1000,,,1,,water Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e

Method : C:\HPCHEM\2\METHODS\8310_32.M (Chemstation Integrator)
Title : PAH's BY EPA 8310
Last Update : Fri Jun 27 11:12:44 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	20.000	18.995	5.0	101	-0.01
2		Acenaphthylene	20.000	19.575	2.1	104	-0.01
3		1-Methyl Naphthalene	20.000	18.912	5.4	102	-0.01
4		2-Methyl Naphthalene	20.000	19.166	4.2	102	-0.01
5		Acenaphthene	20.000	19.759	1.2	104	-0.01
6		Fluorene	20.000	19.277	3.6	103	-0.01
7		Phenanthrene	20.000	19.299	3.5	103	-0.01
8	S	O-Terphenyl	20.000	19.943	0.3	106	-0.01
9		Anthracene	20.000	20.103	-0.5	107	0.00
10		Fluoranthene	20.000	19.168	4.2	102	0.00
11		Pyrene	20.000	18.946	5.3	102	0.00
12	S	P-Terphenyl	20.000	19.243	3.8	102	0.00
13		Benzo(a)Anthracene	10.000	9.494	5.1	102	0.00
14		Chrysene	10.000	9.814	1.9	102	0.00
15		Benzo(b)Fluoranthene	10.000	9.587	4.1	102	0.00
16		Benzo(k)Fluoranthene	10.000	9.473	5.3	101	0.00
17		Benzo(a) Pyrene	10.000	9.705	2.9	104	0.00
18		Dibenzo(a,h)anthracene	10.000	9.675	3.2	103	0.00
19		Benzo(g,h,i) Perylene	10.000	9.665	3.4	102	0.00
20		Indeno(1,2,3-cd)pyrene	10.000	9.576	4.2	103	0.00

Signal #2

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	20.000	18.830	5.9	101	-0.01
2		Acenaphthylene	20.000	18.636	6.8	101	-0.01
3		1-Methyl Naphthalene	20.000	18.602	7.0	101	-0.01
4		2-Methyl Naphthalene	20.000	18.587	7.1	102	-0.01
5		Acenaphthene	20.000	19.539	2.3	104	-0.01
6		Fluorene	20.000	19.234	3.8	102	-0.01
7		Phenanthrene	20.000	19.180	4.1	103	-0.01
8	S	O-Terphenyl	20.000	20.594	-3.0	108	-0.01
9		Anthracene	20.000	21.249	-6.2	104	0.00
10		Fluoranthene	20.000	20.115	-0.6	106	0.00
11		Pyrene	20.000	20.222	-1.1	108	0.00
12	S	P-Terphenyl	20.000	19.275	3.6	103	0.00
13		Benzo(a)Anthracene	10.000	9.574	4.3	102	0.00
14		Chrysene	10.000	9.562	4.4	103	0.00
15		Benzo(b)Fluoranthene	10.000	9.581	4.2	102	0.00

Continuing Calibration Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample: GEE689-CC666
Lab FileID: EE016335.D

16	Benzo(k)Fluoranthene	10.000	9.641	3.6	103	0.00
17	Benzo(a) Pyrene	10.000	9.580	4.2	103	0.00
18	Dibenzo(a,h)anthracene	10.000	9.651	3.5	103	0.00
19	Benzo(g,h,i) Perylene	10.000	9.641	3.6	103	0.00
20	Indeno(1,2,3-cd)pyrene	10.000	9.664	3.4	103	0.00

Average % D = 3.8

(#) = Out of Range SPCC's out = 0 CCC's out = 0
EE015565.D 8310_32.M Wed Jul 02 10:35:57 2003

Continuing Calibration Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample: GEE689-CC666
Lab FileID: EE016367.D

Evaluate Continuing Calibration Report

Signal #1 : E:\HPCHEM\1\DATA\0630APAH\EE016367.D\DAD1B.CH Vial: 3
Signal #2 : E:\HPCHEM\1\DATA\0630APAH\EE016367.D\DAD1A.CH
Acq On : 01-Jul-2003, 12:36:08 Operator: NARESHJ
Sample : CC666-20 Inst : G1315A
Misc : op7858,gee689,1000,,,1,,water Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e

Method : C:\HPCHEM\2\METHODS\8310_32.M (Chemstation Integrator)
Title : PAH's BY EPA 8310
Last Update : Fri Jun 27 11:12:44 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	20.000	19.072	4.6	102	-0.02
2		Acenaphthylene	20.000	19.734	1.3	105	-0.02
3		1-Methyl Naphthalene	20.000	19.002	5.0	102	-0.02
4		2-Methyl Naphthalene	20.000	19.282	3.6	103	-0.02
5		Acenaphthene	20.000	19.856	0.7	104	-0.02
6		Fluorene	20.000	19.388	3.1	103	-0.02
7		Phenanthrene	20.000	19.436	2.8	104	-0.02
8	S	O-Terphenyl	20.000	19.868	0.7	105	-0.02
9		Anthracene	20.000	20.373	-1.9	108	-0.02
10		Fluoranthene	20.000	19.369	3.2	103	-0.02
11		Pyrene	20.000	19.552	2.2	105	-0.02
12	S	P-Terphenyl	20.000	19.465	2.7	103	-0.02
13		Benzo(a)Anthracene	10.000	9.700	3.0	104	-0.02
14		Chrysene	10.000	10.055	-0.5	104	-0.02
15		Benzo(b)Fluoranthene	10.000	9.725	2.8	103	-0.01
16		Benzo(k)Fluoranthene	10.000	9.571	4.3	102	-0.01
17		Benzo(a) Pyrene	10.000	9.780	2.2	104	-0.01
18		Dibenzo(a,h)anthracene	10.000	9.762	2.4	104	-0.01
19		Benzo(g,h,i) Perylene	10.000	9.752	2.5	103	-0.01
20		Indeno(1,2,3-cd)pyrene	10.000	9.687	3.1	104	-0.01

Signal #2

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	20.000	18.919	5.4	101	-0.02
2		Acenaphthylene	20.000	18.672	6.6	101	-0.02
3		1-Methyl Naphthalene	20.000	18.645	6.8	102	-0.02
4		2-Methyl Naphthalene	20.000	18.670	6.6	102	-0.02
5		Acenaphthene	20.000	19.599	2.0	104	-0.02
6		Fluorene	20.000	19.320	3.4	103	-0.02
7		Phenanthrene	20.000	19.286	3.6	103	-0.02
8	S	O-Terphenyl	20.000	20.530	-2.7	108	-0.02
9		Anthracene	20.000	21.569	-7.8	105	-0.02
10		Fluoranthene	20.000	20.242	-1.2	107	-0.02
11		Pyrene	20.000	20.270	-1.3	108	-0.02
12	S	P-Terphenyl	20.000	19.461	2.7	104	-0.02
13		Benzo(a)Anthracene	10.000	9.686	3.1	104	-0.02
14		Chrysene	10.000	9.646	3.5	104	-0.02
15		Benzo(b)Fluoranthene	10.000	9.675	3.2	103	-0.01

Continuing Calibration Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample: GEE689-CC666
Lab FileID: EE016367.D

16	Benzo(k)Fluoranthene	10.000	9.711	2.9	103	-0.01
17	Benzo(a) Pyrene	10.000	9.721	2.8	104	-0.01
18	Dibenzo(a,h)anthracene	10.000	9.713	2.9	104	-0.01
19	Benzo(g,h,i) Perylene	10.000	9.720	2.8	103	-0.01
20	Indeno(1,2,3-cd)pyrene	10.000	9.733	2.7	104	-0.01

Average % D = 3.2

(#) = Out of Range SPCC's out = 0 CCC's out = 0
EE015565.D 8310_32.M Wed Jul 02 10:36:00 2003

Continuing Calibration Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample: GEE689-ECC666
Lab FileID: EE016378.D

Evaluate Continuing Calibration Report

Signal #1 : E:\HPCHEM\1\DATA\0630APAH\EE016378.D\DAD1B.CH Vial: 3
Signal #2 : E:\HPCHEM\1\DATA\0630APAH\EE016378.D\DAD1A.CH
Acq On : 01-Jul-2003, 16:29:20 Operator: NARESHJ
Sample : eCC666-20 Inst : G1315A
Misc : op7858,gee689,1000,,,1,,water Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e

Method : C:\HPCHEM\2\METHODS\8310_32.M (Chemstation Integrator)
Title : PAH's BY EPA 8310
Last Update : Fri Jun 27 11:12:44 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	20.000	19.018	4.9	102	-0.02
2		Acenaphthylene	20.000	19.721	1.4	105	-0.02
3		1-Methyl Naphthalene	20.000	19.024	4.9	102	-0.02
4		2-Methyl Naphthalene	20.000	19.273	3.6	103	-0.03
5		Acenaphthene	20.000	19.837	0.8	104	-0.03
6		Fluorene	20.000	19.412	2.9	103	-0.03
7		Phenanthrene	20.000	19.424	2.9	104	-0.02
8	S	O-Terphenyl	20.000	19.746	1.3	105	-0.01
9		Anthracene	20.000	20.379	-1.9	108	-0.02
10		Fluoranthene	20.000	19.367	3.2	103	-0.02
11		Pyrene	20.000	19.562	2.2	105	-0.02
12	S	P-Terphenyl	20.000	19.455	2.7	103	-0.02
13		Benzo(a)Anthracene	10.000	9.703	3.0	104	-0.02
14		Chrysene	10.000	10.043	-0.4	104	-0.02
15		Benzo(b)Fluoranthene	10.000	9.662	3.4	103	-0.02
16		Benzo(k)Fluoranthene	10.000	9.508	4.9	101	-0.02
17		Benzo(a) Pyrene	10.000	9.605	3.9	103	-0.02
18		Dibenzo(a,h)anthracene	10.000	9.769	2.3	104	-0.02
19		Benzo(g,h,i) Perylene	10.000	9.759	2.4	103	-0.02
20		Indeno(1,2,3-cd)pyrene	10.000	9.701	3.0	104	-0.02

Signal #2

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	20.000	18.858	5.7	101	-0.02
2		Acenaphthylene	20.000	18.599	7.0	101	-0.02
3		1-Methyl Naphthalene	20.000	18.633	6.8	102	-0.02
4		2-Methyl Naphthalene	20.000	18.639	6.8	102	-0.03
5		Acenaphthene	20.000	19.544	2.3	104	-0.03
6		Fluorene	20.000	19.331	3.3	103	-0.03
7		Phenanthrene	20.000	19.257	3.7	103	-0.02
8	S	O-Terphenyl	20.000	20.443	-2.2	108	-0.01
9		Anthracene	20.000	21.660	-8.3	106	-0.02
10		Fluoranthene	20.000	20.207	-1.0	106	-0.02
11		Pyrene	20.000	20.244	-1.2	108	-0.02
12	S	P-Terphenyl	20.000	19.450	2.8	103	-0.02
13		Benzo(a)Anthracene	10.000	9.682	3.2	103	-0.02
14		Chrysene	10.000	9.627	3.7	104	-0.02
15		Benzo(b)Fluoranthene	10.000	9.679	3.2	103	-0.02

Continuing Calibration Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample: GEE689-ECC666
Lab FileID: EE016378.D

16	Benzo(k)Fluoranthene	10.000	9.712	2.9	103	-0.02
17	Benzo(a) Pyrene	10.000	9.705	2.9	104	-0.02
18	Dibenzo(a,h)anthracene	10.000	9.705	2.9	104	-0.02
19	Benzo(g,h,i) Perylene	10.000	9.712	2.9	103	-0.02
20	Indeno(1,2,3-cd)pyrene	10.000	9.734	2.7	104	-0.02

Average % D = 3.3

(#) = Out of Range SPCC's out = 0 CCC's out = 0
EE015565.D 8310_32.M Wed Jul 02 10:36:02 2003

Initial Calibration Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample: GOP1017-ICC1017
Lab FileID: OP30161.D

Response Factor Report FID 2

Method : C:\HPCHEM\2\METHODS\FL_PRO_F.M (Chemstation Integrator)
Title : TPH by FL_PRO
Last Update : Fri Jun 27 08:07:33 2003
Response via : Initial Calibration

Calibration Files
1 =OP30159.D 2 =OP30160.D 3 =OP30161.D
4 =OP30162.D 5 =OP30163.D 6 =OP30164.D 7 =OP30165.D

Compound	1	2	3	4	5	6	7	Avg	%RSD
1)S O-TERPHENYL	2.767	2.787	3.063	3.063	3.146			2.965 E4	5.90
2)H TPH (C8-C40)	2.991	2.775	2.918	2.877	2.945	2.511	2.012	2.718 E4	12.88

Average % RSD = 9.4

(#) = Out of Range

FL_PRO_F.M Fri Jun 27 13:52:11 2003

Continuing Calibration Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample: GOP1020-CC1017
Lab FileID: OP30338.D

Evaluate Continuing Calibration Report

```
Data File : C:\HPCHEM\2\DATA\0702PRO\OP30338.D          Vial: 1
Acq On    :  2 Jul 2003   8:30 pm                    Operator: SARAHM
Sample    : CC1017-1020                              Inst    : FID 2
Misc      : op7865,gop1020,1000,,,1,1,water          Multiplr: 1.00
IntFile   : events.e

Method       : C:\HPCHEM\2\METHODS\FL_PRO_F.M (Chemstation Integrator)
Title        : TPH by FL_PRO
Last Update  : Thu Jul 03 09:04:12 2003
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  25%     Max. Rel. Area : 150%
```

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 S	O-TERPHENYL	60.000	57.727	3.8	93	0.00
2 H	TPH (C8-C40)	1020.000	1009.992	1.0	92	0.00

Average % D = 2.4

(#) = Out of Range SPCC's out = 0 CCC's out = 0
OP30161.D FL_PRO_F.M Thu Jul 03 09:17:48 2003

Continuing Calibration Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample: GOP1020-ECC1017
Lab FileID: OP30346.D

Evaluate Continuing Calibration Report

```
Data File : C:\HPCHEM\2\DATA\0702PRO\OP30346.D          Vial: 1
Acq On    :  2 Jul 2003  11:30 pm                     Operator: SARAHM
Sample    : ECC1017-1020                              Inst    : FID 2
Misc      : op7865,gop1020,1000,,,1,1,water           Multiplr: 1.00
IntFile   : events.e

Method       : C:\HPCHEM\2\METHODS\FL_PRO_F.M (Chemstation Integrator)
Title        : TPH by FL_PRO
Last Update  : Thu Jul 03 09:04:12 2003
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  25%     Max. Rel. Area : 150%
```

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 S	O-TERPHENYL	60.000	53.556	10.7	86	0.00
2 H	TPH (C8-C40)	1020.000	939.066	7.9	86	0.00

Average % D = 9.3

(#) = Out of Range SPCC's out = 0 CCC's out = 0
OP30161.D FL_PRO_F.M Thu Jul 03 09:17:49 2003

Continuing Calibration Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample: GOP1020-CC1017
Lab FileID: OP30317.D

Evaluate Continuing Calibration Report

```
Data File : C:\HPCHEM\2\DATA\0702PRO\OP30317.D          Vial: 1
Acq On    :  2 Jul 2003  12:02 pm                     Operator: SARAHM
Sample    : CC1017-1020                               Inst    : FID 2
Misc      : op7865,gop1020,1000,,,1,1,water           Multiplr: 1.00
IntFile   : events.e

Method       : C:\HPCHEM\2\METHODS\FL_PRO_F.M (Chemstation Integrator)
Title        : TPH by FL_PRO
Last Update  : Thu Jul 03 09:04:12 2003
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  25%     Max. Rel. Area : 150%
```

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 S	O-TERPHENYL	60.000	53.657	10.6	87	0.00
2 H	TPH (C8-C40)	1020.000	960.041	5.9	88	0.00

Average % D = 8.2

(#) = Out of Range SPCC's out = 0 CCC's out = 0
OP30161.D FL_PRO_F.M Thu Jul 03 09:17:47 2003

Continuing Calibration Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample: GOP1020-CC1017
Lab FileID: OP30327.D

Evaluate Continuing Calibration Report

```
Data File : C:\HPCHEM\2\DATA\0702PRO\OP30327.D          Vial: 1
Acq On    :  2 Jul 2003   4:14 pm                    Operator: SARAHM
Sample    : cc1017-1020                              Inst    : FID 2
Misc      : op7865,gop1020,1000,,,1,1,water          Multiplr: 1.00
IntFile   : events.e

Method       : C:\HPCHEM\2\METHODS\FL_PRO_F.M (Chemstation Integrator)
Title        : TPH by FL_PRO
Last Update  : Thu Jul 03 09:04:12 2003
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  25%     Max. Rel. Area : 150%
```

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 S	O-TERPHENYL	60.000	55.226	8.0	89	0.00
2 H	TPH (C8-C40)	1020.000	952.661	6.6	87	0.00

Average % D = 7.3

(#) = Out of Range SPCC's out = 0 CCC's out = 0
OP30161.D FL_PRO_F.M Thu Jul 03 09:17:48 2003

Initial Calibration Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample: GOP1021-ICC1021
Lab FileID: OP30349.D

Response Factor Report FID 2

Method : C:\HPCHEM\2\METHODS\FL_PRO_F.M (Chemstation Integrator)
Title : TPH by FL_PRO
Last Update : Thu Jul 03 14:51:29 2003
Response via : Initial Calibration

Calibration Files
1 =OP30347.D 2 =OP30348.D 3 =OP30349.D
4 =OP30350.D 5 =OP30351.D 6 =OP30352.D 7 =OP30353.D

Compound	1	2	3	4	5	6	7	Avg	%RSD
1)S O-TERPHENYL	2.554	2.732	2.822	2.704	2.866			2.735 E4	4.43
2)H TPH (C8-C40)	2.589	2.575	2.626	2.509	2.656	2.171	2.195	2.474 E4	8.25

Average % RSD = 6.3

(#) = Out of Range

FL_PRO_F.M Thu Jul 03 14:52:26 2003

Continuing Calibration Summary

Job Number: F18314
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-121

Sample: GOP1021-CC1021
Lab FileID: OP30360.D

Evaluate Continuing Calibration Report

```
Data File : C:\HPCHEM\2\DATA\0703PRO\OP30360.D          Vial: 3
Acq On    :  3 Jul 2003   4:47 pm                    Operator: SARAHM
Sample    : cc1021-1020                              Inst    : FID 2
Misc      : op7865,gop1021,960,,,1,1,water           Multiplr: 1.00
IntFile   : events.e

Method       : C:\HPCHEM\2\METHODS\FL_PRO_F.M (Chemstation Integrator)
Title        : TPH by FL_PRO
Last Update  : Thu Jul 03 14:51:29 2003
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  25%     Max. Rel. Area : 150%
```

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 S	O-TERPHENYL	60.000	56.225	6.3	91	0.00
2 H	TPH (C8-C40)	1020.000	1005.575	1.4	93	0.00

Average % D = 3.9

(#) = Out of Range SPCC's out = 0 CCC's out = 0
OP30349.D FL_PRO_F.M Sat Jul 05 11:17:46 2003

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** 2319 | **PAGE** 1 **OF** 1

PROJECT NO: N0486, CTO 121	**FACILITY:** Bldg. 502, TANK 502 NASCF	**PROJECT MANAGER** P. CALLIGAN	**PHONE NUMBER** 813 806 0202	**LABORATORY NAME AND CONTACT:** ACCUTEST Sue Bell
SAMPLERS (SIGNATURE) Pete Lamontagne, Scott R. McGuire		**FIELD OPERATIONS LEADER** M. DAVE	**PHONE NUMBER** 904 636 6125	**ADDRESS** 4405 Vineland Rd
		CARRIER/WAYBILL NUMBER Fedex		**CITY, STATE** ORLANDO, FL 32811

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2003	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAP (G) COMP (C)	No. OF CONTAINERS	TYPE OF ANALYSIS: SELECT VOCS SW846 8260B *	PAHs SW846 8310	TRPH FL-PRO						COMMENTS
		CONTAINER TYPE PLASTIC (P) or GLASS (G)							G	G	G						
		PRESERVATIVE USED							HCL	None	H_2SO_4						
6/24	1035	CEF-502-GW-70-06				GW	G	7	3	2	2						Cool to 4°C
6/24	1050	CEF-502-GW-68-06				GW	G	7	3	2	2						
6/24	1050	CEF-502-GW-MW01-06				GW	G	14	6	4	4						* Report only
6/24	1430	CEF-502-GW-18R-06				GW	G	7	3	2	2						EPA 602 compounds
6/24	1515	CEF-502-GW-85-06				GW	G	7	3	2	2						listed on work
6/24	1525	CEF-502-GW-36-06				GW	G	7	3	2	2						order #
6/24	1655	CEF-502-GW-45-06				GW	G	7	3	2	2						N0486-WR356.
6/24	0000	CEF-502-GW-DW01-06				GW	G	7	3	2	2						(BTEX, MTBE +
																	chlorinated VOCs).

1. RELINQUISHED BY Pete Lamontagne	DATE 6/25/03	TIME 1700	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) 4/02R