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NAS CECIL FIELD, FL  
5090.3a

SECOND SEMI-ANNUAL THIRD YEAR GROUNDWATER MONITORING LETTER REPORT  
FOR OCALA F-18 CRASH SITE NAS CECIL FIELD FL  
11/17/2003  
TETRA TECH NUS INC



**TETRA TECH NUS, INC.**

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Document Number 04JAX0030

November 17, 2003

Project Number N0486

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

Reference: CLEAN Contract Number N62467-94-D-0888  
Contract Task Order (CTO) Number 0121

Subject: Annual Groundwater Monitoring Report  
2<sup>nd</sup> Semi-Annual, 3<sup>rd</sup> Year (April 2003)  
Ocala F-18 Crash Site  
Naval Air Station Cecil Field  
Jacksonville, Florida

Dear Mr. Grabka:

Tetra Tech NUS, Inc. (TtNUS) is pleased to submit this 2nd Semi-Annual Groundwater Monitoring Report for the referenced CTO for the Ocala F-18 Crash Site. This groundwater monitoring report was prepared for the United States Navy Southern Division, Naval Facilities Engineering Command (NAVFAC EDF SOUTH) under the Comprehensive Long-term Environmental Action Navy (CLEAN) Contract Number N62467-94-D-0888. The objective of this task is to monitor groundwater associated with the site semi-annually. The guidance document for this report is Chapter 62-770, Florida Administrative Code. The sampling program was accomplished in general accordance with the Monitoring Only Plan for Natural Attenuation (MONA) (see Attachment A) that was approved by the Florida Department of Environmental Protection (FDEP) on April 1, 1998.

This report summarizes the fieldwork and analytical results for the subject site for the six months preceding the sampling event conducted in April 2003. Figure 1 shows the location of the site. The work was performed in general accordance with the Base-wide Generic Work Plan Volumes I and II (TtNUS, 1998).

**FIELD OPERATIONS**

Water level measurements were recorded on April 21, 2003, from each of the monitoring wells prior to sample collection. The depth to water ranged from 20.44 feet (ft) below top of casing (btoc) (CEF-CS4) to 24.13 ft btoc (CEF-CS2). The depth-to-water measurements, along with top-of-casing elevations, were used to calculate groundwater elevations. Groundwater elevation data from this event and the previous nine sampling events are provided on Table 1. A groundwater elevation contour map generated from the April 21, 2003, data is provided as Figure 2. Based on this data, the inferred direction of groundwater flow is to the northeast.



Groundwater samples were collected from three monitoring wells (CEF-CS1A, CEF-CS3, and CEF-CS7) on April 21, 2003. Following collection, the samples were placed on ice and subsequently shipped under chain-of-custody to Accutest Laboratories in Orlando, Florida. The laboratory analyzed the samples for volatile organic compounds (VOCs) using United States Environmental Protection Agency (USEPA) Method SW846 8021B and for polynuclear aromatic hydrocarbons (PAHs) using USEPA Method SW846 8310. The reported detection limits for these methods meet the requirements for the similar methods stipulated in the MONA order.

## RESULTS

Figure 3 depicts the concentrations reported for the monitoring wells for several VOCs and the naphthalene compounds. The analytical results are summarized on Table 2. A copy of the laboratory report is provided in Attachment B. The VOC results for the source well CEF-CS1A are below both the respective action levels and the Groundwater Cleanup Target Levels (GCTLs). However, the methylnaphthalene concentrations for the source well exceed respective GCTLs. The analytical data for the perimeter monitor wells show no petroleum impacts to groundwater.

A historical comparison of the VOC data from the October 2002 event to this event (see Table 3) indicates the following:

- The benzene concentration [GCTL = 1 micrograms per liter ( $\mu\text{g/L}$ )] decreased below the standard laboratory detection limit of 1  $\mu\text{g/L}$ .
- The ethylbenzene concentration (GCTL = 30  $\mu\text{g/L}$ ) decreased from 30.2 to a low of 10.6  $\mu\text{g/L}$ .
- The toluene concentration (GCTL = 40  $\mu\text{g/L}$ ) continued to decrease and remains below the GCTL.
- The total xylenes concentration (GCTL = 20  $\mu\text{g/L}$ ) continued to decrease and remains under the GCTL.

Similar historical comparisons for the PAHs of concern (see Table 3) indicate the following:

- The naphthalene and methylnaphthalene concentrations (GCTLs = 20  $\mu\text{g/L}$ ) have decreased since the October 2002 event with the naphthalene concentration decreasing from 33.5  $\mu\text{g/L}$  to 13.4  $\mu\text{g/L}$ .
- Levels for both 1- and 2-methylnaphthalene continue to exceed the GCTL of 20  $\mu\text{g/L}$  at concentrations of 30.7  $\mu\text{g/L}$  and 30.4  $\mu\text{g/L}$ , respectively.

## CONCLUSIONS and RECOMMENDATIONS

As required by the MONA approval order, an explanation of the natural attenuation progress relative to the milestone objectives with need for corrective action is included in this annual report.

The VOC and PAH concentrations for the source well do not exceed action levels, and the contaminants of concern (COCs) reported for samples from CEF-CS1A are below the corresponding milestone objectives. Concentrations for both methylnaphthalene compounds reported for the source well, CEF-CS1A, continue to exceed respective GCTLs. Since March 2001 (see Table 3), the VOC and PAH concentrations for the source well have generally decreased. The perimeter wells show no impact from the source area hydrocarbons. The combination of decreasing petroleum COCs in samples from the source well and the lack of the same COCs in the perimeter wells appear to confirm that natural attenuation is progressing as desired. Since decreasing COC concentrations for the last three events appear to favor continued natural attenuation, TtNUS recommends continuing the monitoring program.



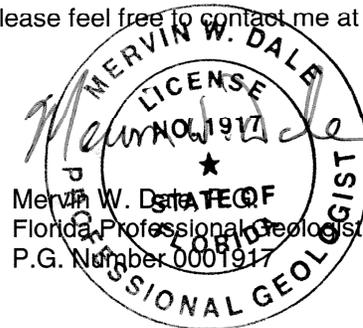
TETRA TECH NUS, INC.

Mr. David Grabka  
FDEP  
November 17, 2003 – Page 3

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

Sincerely,

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



PEC/md

Attachments (8)

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

## TABLES

**Table 1**  
**Groundwater Elevation and Monitoring Well Construction Data**

Annual Groundwater Monitoring Report  
 Ocala F-18 Crash Site  
 Naval Air Station Cecil Field  
 Jacksonville, Florida  
 Page 1 of 2

Monitoring Well Identification	Total Well Depth (ft, bls)	Screened Interval (ft, bls)	TOC Elevation (ft, msl)*	May 4, 1998		August 26, 1998		November 23, 1998		February 22, 1999		October 4, 1999	
				Depth to Water (ft, btoc)	Water Level Elevation (ft, msl)	Depth to Water (ft, btoc)	Water Level Elevation (ft, msl)	Depth to Water (ft, btoc)	Water Level Elevation (ft, msl)	Depth to Water (ft, btoc)	Water Level Elevation (ft, msl)	Depth to Water (ft, btoc)	Water Level Elevation (ft, msl)
CEF-CS1A	31	15.5 to 30.5	81.30	20.30	61.00	21.85	59.45	20.23	61.07	22.39	58.91	25.05	56.25
CEF-CS2	29.5	14.0 to 29.0	83.54	22.52	61.02	24.17	59.37	22.42	61.12	24.60	58.94	27.33	56.21
CEF-CS3	32	16.5 to 31.5	80.98	20.08	60.90	21.60	59.38	20.00	60.98	22.16	58.82	24.84	56.14
CEF-CS4	29.5	14.0 to 29.0	79.88	19.05	60.83	20.55	59.33	18.96	60.92	21.12	58.76	23.79	56.09
CEF-CS5	33	17.5 to 32.5	80.66	19.79	60.87	21.06	59.60	19.50	61.16	21.68	58.98	24.33	56.33
CEF-CS6	53.5	48.0 to 53.0	81.59	20.61	60.98	22.15	59.44	20.52	61.07	22.67	58.92	25.37	56.22
CEF-CS7	29.9	19.0 to 29.0	80.89	20.11	60.78	21.64	59.25	20.00	60.89	22.15	58.74	24.84	56.05

See notes at end of table.

**Table 1 (Continued)**  
**Groundwater Elevation and Monitoring Well Construction Data**

Annual Groundwater Monitoring Report  
 Ocala F-18 Crash Site  
 Naval Air Station Cecil Field  
 Jacksonville, Florida  
 Page 2 of 2

Monitoring Well Identification	Total Well Depth (ft, bls)	Screened Interval (ft, bls)	TOC Elevation (ft, msl)*	March 7, 2000		September 27, 2000		March 7, 2001		October 4, 2002		April 21, 2003	
				Depth to Water (ft, btoc)	Water Level Elevation (ft, msl)	Depth to Water (ft, btoc)	Water Level Elevation (ft, msl)	Depth to Water (ft, btoc)	Water Level Elevation (ft, msl)	Depth to Water (ft, btoc)	Water Level Elevation (ft, msl)	Depth to Water (ft, btoc)	Water Level Elevation (ft, msl)
CEF-CS1A	31	15.5 to 30.5	81.30	25.98	55.32	28.49	52.81	30.29	51.01	24.23	57.07	21.76	59.54
CEF-CS2	29.5	14.0 to 29.0	83.54	28.28	55.26	30.77	52.77	31.91	51.63	26.59	56.95	24.13	59.41
CEF-CS3	32	16.5 to 31.5	80.98	25.82	55.16	28.26	52.72	30.07	50.91	23.98	57.00	21.53	59.45
CEF-CS4	29.5	14.0 to 29.0	79.88	24.80	55.08	27.19	52.69	29.02	50.86	22.89	56.99	20.44	59.44
CEF-CS5	33	17.5 to 32.5	80.66	25.35	55.31	27.77	52.89	29.6	51.06	23.43	57.23	20.96	59.70
CEF-CS6	53.5	48.0 to 53.0	81.59	26.33	55.26	28.78	52.81	30.59	51.00	24.55	57.04	22.10	59.49
CEF-CS7	29.9	19.0 to 29.0	80.89	25.81	55.08	28.27	52.62	DRY	<50.99	23.97	56.92	21.52	59.37

**Notes:**

\*Top of casing elevations for monitoring wells 1A through 6 were surveyed by ARC Surveying, Inc. for the Remediation Closure Report (BEI, 1996). Following installation, monitoring well CEF-CS7 was surveyed by Harding Lawson Associates personnel based on ARC Surveying, Inc.'s data.

bls = below land surface

TOC = top of casing

msl = mean sea level

< = less than

**Table 2**  
**Summary of Detections in Groundwater**

Annual Groundwater Monitoring Report  
April 21, 2003 Sampling Event  
Ocala F-18 Crash Site  
Naval Air Station Cecil Field  
Jacksonville, Florida

Contaminant	Monitoring Well Location			Cleanup Criteria*	
	CEF-CS1A (source)	CEF-CS3 (perimeter)	CEF-CS7 (perimeter)	Action Levels (source/ perimeter)	Milestone Objectives (end of year 3)
<b>VOCs (USEPA Method 8021B) (µg/L)</b>					
Benzene	<1.0	<1.0	<1.0	100/1	8
Ethylbenzene	10.6	<1.0	<1.0	300/30	40
Toluene	0.56 J	<1.0	<1.0	400/40	80
Total Xylenes	9.2	<3.0	<3.0	NA	NA
<b>PAHs (USEPA Method 8310) (µg/L)</b>					
Naphthalene	13.4	<2.1	<2.1	200/20	60
1-Methylnaphthalene	30.7	<2.1	<2.1	NA	NA
2-Methylnaphthalene	30.4	<2.1	<2.1	NA	NA
<b>Notes:</b>					
*Based on the MONA Approval Order (Attachment A)					
< = less than					
J = estimated value					
NA = no value presented in the approval order					

**Table 3**  
**Summary of Detections in Groundwater**

Annual Groundwater Monitoring Report  
Ocala F-18 Crash Site  
Naval Air Station Cecil Field  
Jacksonville, Florida  
Page 1 of 2

Compounds Detected	Monitoring Well Identification																	Cleanup Criteria <sup>1</sup>					
	CEF-CS1A (source) <sup>2</sup>											CEF-CS2	CEF-CS3 (perimeter) <sup>2</sup>					Action Levels (source/perimeter)	Milestone Objectives (end of year 1)	Milestone Objectives (end of year 2)	Milestone Objectives (end of year 3)		
	Aug 98	Nov 98	Feb 99	Oct 99	Mar 00	Mar 00 <sup>3</sup>	Sep 00	Mar 01	Oct 02	Oct 02 <sup>3</sup>	April 03	Oct 99	Aug 98	Nov 98	Feb 99	Oct 99	Mar 00					Aug 00	Mar 01
<b>VOCs<sup>4</sup> (µg/L)</b>																							
Benzene	16	14	13	17	16.6	16.6	42	39	1.0	1.2	ND	ND	ND	ND	NS	ND	ND	ND	ND	100/1	12	10	8
Ethylbenzene	44	31	34	43	31.2	31.2	31	50	28.0	30.2	10.6	ND	ND	ND	NS	ND	ND	ND	ND	300/30	70	50	40
Toluene	7.1	3.5	1.8	3.4	2.1	2.1	6	8.9	ND	0.61	0.56	ND	ND	ND	NS	ND	ND	ND	ND	400/40	110	100	80
Total Xylenes	115	63	33	80	38.4	38.4	39	53	16.2	16.3	9.2	ND	ND	ND	NS	ND	ND	ND	ND	NA	NA	NA	NA
<b>PAHs<sup>5</sup> (µg/L)</b>																							
Naphthalene	52	75	39	16	29.5 <sup>3</sup>	16.8	34	61	35	33.5	13.4	ND	ND	ND	NS	ND	ND	ND	ND	200/20	110	90	60
1-Methylnaphthalene	45	87	31	27	37.2 <sup>3</sup>	20.3	20	32	62	62.2	30.7	ND	ND	ND	NS	ND	ND	ND	ND	NA	NA	NA	NA
2-Methylnaphthalene	75	59	42	17	33.1 <sup>3</sup>	19.6	18	38	59	57.5	30.4	ND	ND	ND	NS	ND	ND	ND	ND	NA	NA	NA	NA

**Notes:**

<sup>1</sup>Based on the MONA approval order.

<sup>2</sup>Data from May 1998 sampling has been deleted for format reasons. It can be found in all previous monitoring reports.

<sup>3</sup>Duplicate sample collected at this well.

<sup>4</sup>USEPA Method 8260B provides data at detection limits necessary to meet MONA approval order original requirement to use USEPA Method 602.

<sup>5</sup>Currently using USEPA Method 8310 in accordance with the Mona approval order.

ND = none detected

NA = no value presented in the approval order

NS = not sampled

**Table 3 (Continued)**  
**Summary of Detections in Groundwater**

Annual Groundwater Monitoring Report  
 Ocala F-18 Crash Site  
 Naval Air Station Cecil Field  
 Jacksonville, Florida  
 Page 2 of 2

Compounds Detected	Monitoring Well Identification											Cleanup Criteria <sup>1</sup>				
	CEF-CS7 <sup>3</sup>			CEF-CS7 (perimeter) <sup>2</sup>								Action Levels (source/perimeter)	Milestone Objectives (end of year 1)	Milestone Objectives (end of year 2)	Milestone Objectives (end of year 3)	
	Oct 02	April 03	April 03 <sup>3</sup>	Aug 98	Nov 98	Feb 99	Oct 99	Mar 00	Sep 00	Mar 01	Oct 02					April 03
<b>VOCs<sup>4</sup> (µg/L)</b>																
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	100/1	12	10	8
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	300/30	70	50	40
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	400/40	110	100	80
Total Xylenes	ND	ND	ND	1.2	ND	ND	ND	ND	ND	NS	ND	ND	NA	NA	NA	NA
<b>PAHs<sup>5</sup> (µg/L)</b>																
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	200/20	110	90	60
1-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	NA	NA	NA	NA
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	NA	NA	NA	NA

**Notes:**

<sup>1</sup>Based on the MONA approval order.

<sup>2</sup>Data from May 1998 sampling has been deleted for format reasons. It can be found in previous monitoring reports.

<sup>3</sup>Duplicate sample collected at this well.

<sup>4</sup>USEPA Method 8021B provides data at detection limits necessary to meet MONA approval order original requirement to use USEPA Method 602.

<sup>5</sup>May 1998 to February 1999 - USEPA Method 625; October 1999 to March 2000, USEPA Method 8310; September 2000, USEPA Method 8270C. Currently using USEPA Method 8310 in accordance with the MONA approval order.

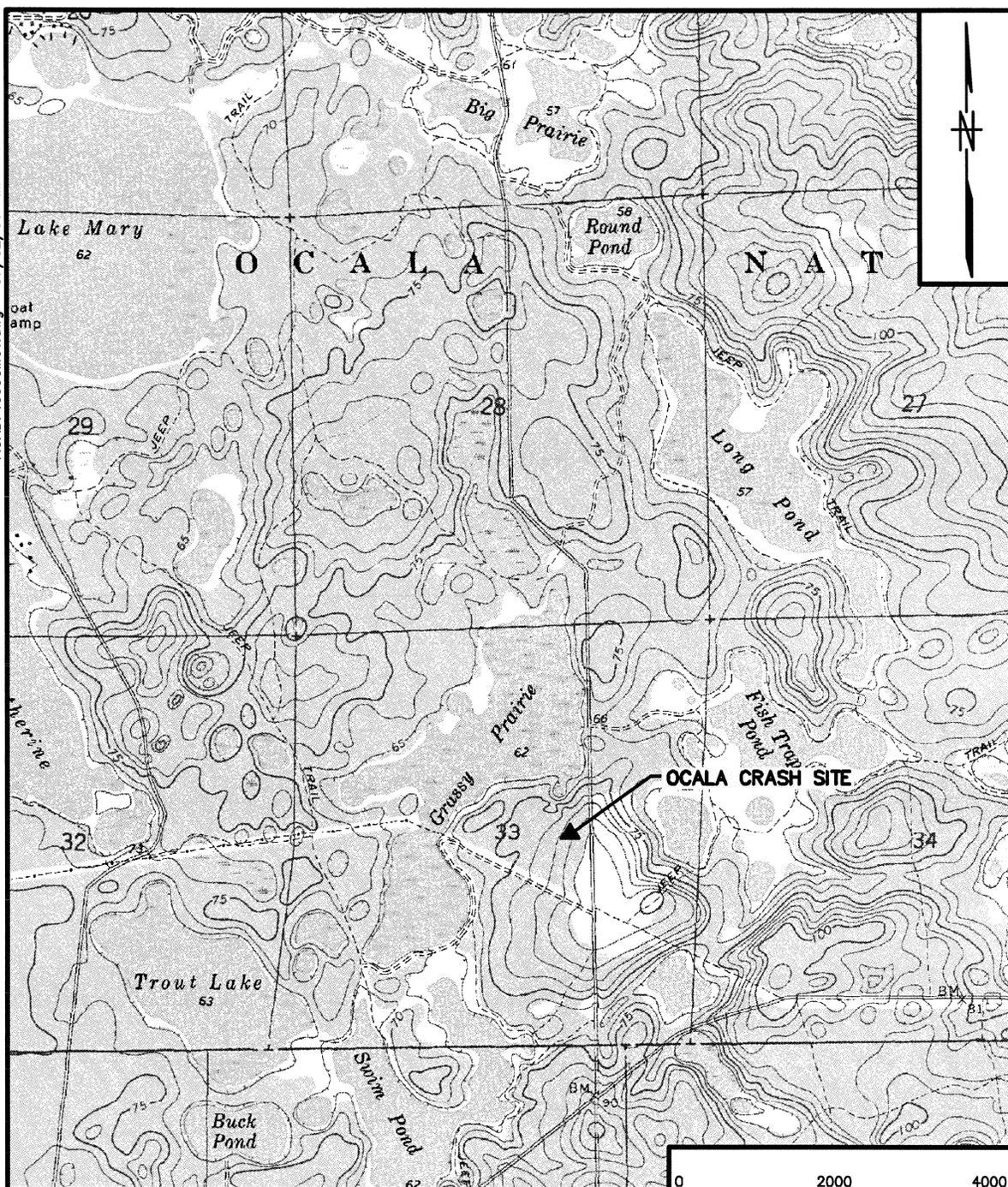
ND = none detected

NA = no value presented in the approval order

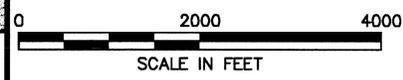
NS = not sampled

## FIGURES

ACAD: 4093CM01.dwg 07/02/03 MF PIT



SOURCE: USGS QUADRANGLE TOPOGRAPHIC MAP, LAKE MARY, FLORIDA  
1972, PHOTOREVISED 1980.



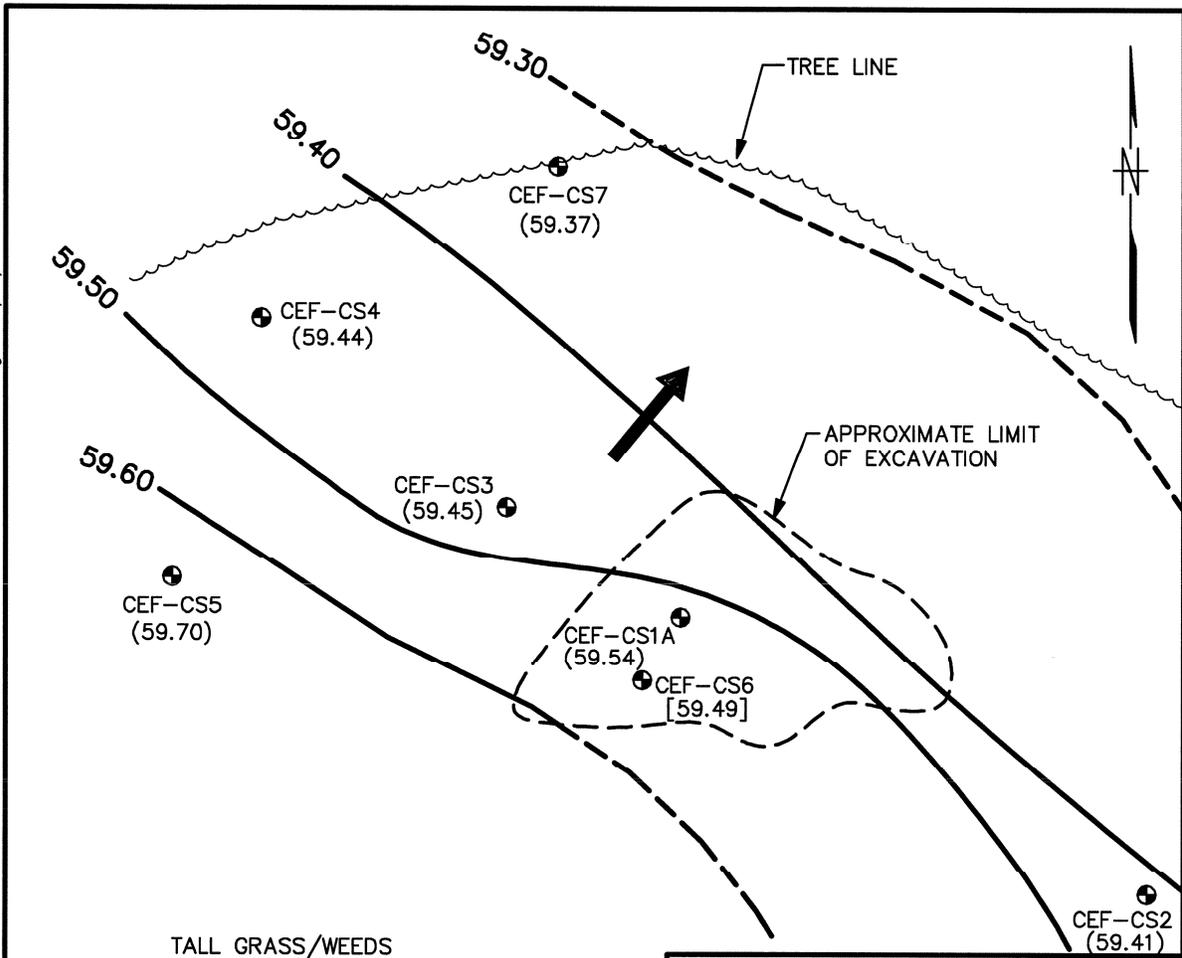
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HJB	12/2/02
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COST/SCHED-AREA	
SCALE	
AS NOTED	



**SITE LOCATION MAP**  
**OCALA F-18 CRASH SITE**  
**OCALA NATIONAL FOREST**  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

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

ACAD: 4093GP02.dwg 06/17/03 MF PIT



**LEGEND:**

- 
 CEF-CS2 MONITORING WELL LOCATION
- 59.40 ——— POTENTIOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)
- (59.54) GROUNDWATER ELEVATION (FT. MSL)
- [59.49] NOT INCLUDED IN CONTOURING
- 
 GROUNDWATER FLOW DIRECTION

0                      20                      40  
 APPROXIMATE SCALE IN FEET

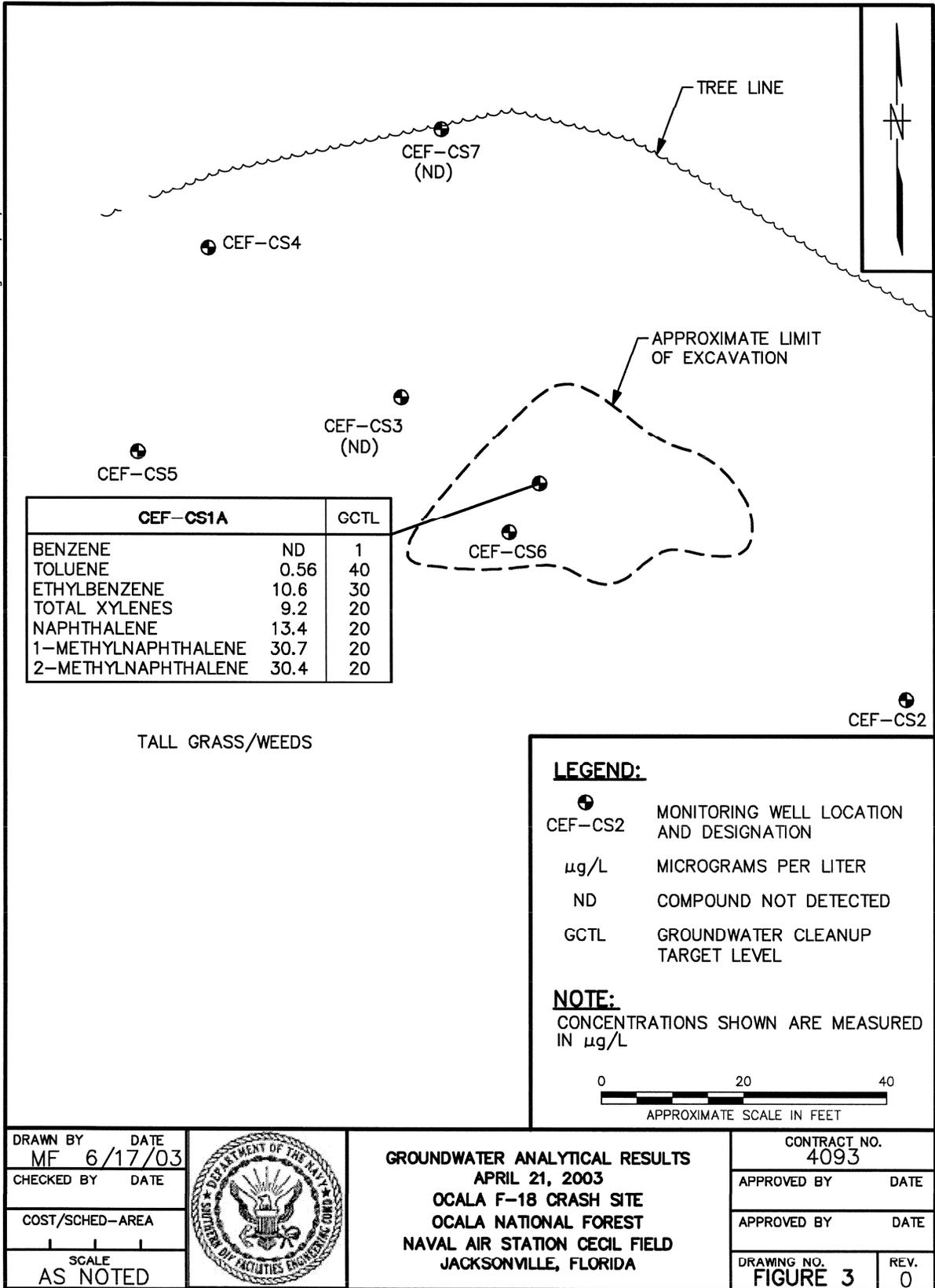
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MF	6/17/03
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COST/SCHED-AREA	
SCALE	
AS NOTED	



POTENTIOMETRIC SURFACE MAP  
 APRIL 21, 2003  
 Ocala F-18 CRASH SITE  
 Ocala National Forest  
 NAVAL AIR STATION CECIL FIELD  
 JACKSONVILLE, FLORIDA

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

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DRAWN BY	DATE
MF	6/17/03
CHECKED BY	DATE
COST/SCHED-AREA	
SCALE	
AS NOTED	



**GROUNDWATER ANALYTICAL RESULTS**  
**APRIL 21, 2003**  
**OCALA F-18 CRASH SITE**  
**OCALA NATIONAL FOREST**  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

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

**ATTACHMENT A**

**FDEP MONA APPROVAL ORDER**



## Department of Environmental Protection

Lawton Chiles  
Governor

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

Virginia B. Wetherell  
Secretary

**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

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

Subject: Monitoring Only Plan  
Approval Order  
Ocala F-18 Crash Site

Dear Mr. Kizer:

The Bureau of Waste Cleanup has completed the review of the Site Assessment Report Addendum and Monitoring Only Proposal for Natural Attenuation dated January 1998 (received January 26, 1998), submitted for this site. Pursuant to Rule 62-770.690, Florida Administrative Code (F.A.C.), the Department approves the monitoring only proposal. Pursuant to Rule 62-770.690(7), F.A.C., you are required to complete the monitoring program outlined below. The first sampling event should be performed within 60 days of receipt of this Monitoring Only Plan Approval Order (Order). Water-level measurements should be made immediately prior to each sampling event. The analytical results (laboratory report), chain of custody, cumulative summary table of the analytical results, site map(s) illustrating the most recent analytical results, and the water-level elevation information (cumulative summary table and most recent flow interpretation map), should be submitted to the Department within 60 days of sample collection.

Monitoring Wells  
CEF-CS1A; CEF-CS3;  
and CEF-CS7

Parameters  
602 and 8310

Frequency  
Quarterly

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

Mr. Bryan Kizer

Page two of 6

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

Contaminated well:

MW-CEF-CS1A: 100 µg/l Benzene; 300 µg/l Ethylbenzene; 400 µg/l Toluene; and 200 µg/l Naphthalene.

Perimeter wells:

MW-CEF-CS3 and MW-CEF-CS7: 1 µg/l Benzene; 30 µg/l Ethylbenzene; 40 µg/l Toluene; 20 µg/l Naphthalene.

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

<u>Benzene</u>	<u>MW-CEF- CS1A</u>
End of year 1	12
End of year 2	10
End of year 3	8
End of year 4	4
End of year 5	ND
 <u>Ethylbenzene</u>	
End of year 1	70
End of year 2	50
End of year 3	40
End of year 4	30
End of year 5	25
 <u>Toluene</u>	
End of year 1	110
End of year 2	100
End of year 3	80

Mr. Bryan Kizer  
Page three of 6

End of year 4	50
End of year 5	35

Naphthalene

End of year 1	110
End of year 2	90
End of year 3	60
End of year 4	30
End of year 5	15

If the applicable No Further Action criteria in Rule 62-770.680, 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:

1. File a petition for administrative hearing with the Office of the General Counsel of the Department within 21 days after receipt of this Order;

OR

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

Mr. Bryan Kizer  
Page four of 6

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

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

A request for an extension of time to file a petition for hearing must be filed (received) in the Office of the General Counsel of the Department at 3900 Commonwealth Boulevard, MS 35, Tallahassee, Florida 32399-3000, within 21 days after receipt of this Order. Pursuant to Rule 28-106.111(3), F.A.C., a request for extension of time shall contain a certificate that the moving party has consulted with all other parties, if any, concerning the extension and that the Department and any other parties agree to said extension. Petitioner, if different from Commanding Officer, Naval Air Station Cecil Field, shall mail a copy of the petition to from Commanding Officer, Naval Air Station Cecil Field at the time of filing. Timely filing a request for an extension of time tolls the time period within which a petition for administrative hearing must be filed until the request is acted upon.

How to File a Petition for Administrative Hearing

A person whose substantial interests are affected by this Order may petition for administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of the General Counsel of the Department at 3900 Commonwealth Boulevard, MS 35, Tallahassee, Florida 32399-3000, within 21 days after receipt of this Order. Petitioner, if different from from Commanding Officer, Naval Air Station Cecil Field, shall mail a copy of the petition to from Commanding Officer, Naval Air Station Cecil Field at the time of filing. Failure to file a petition within this time period shall waive the right of anyone who may request an administrative hearing under Sections 120.569 and 120.57, F.S.

Pursuant to Rules 62-103.155 and 28-106.201, F.A.C., a petition for administrative hearing shall contain the following information:

- a) The name, address, and telephone number of each petitioner, the name, address, and telephone number of the petitioner's representative, if any, the site owner's name and address, if different from the petitioner, the

Mr. Bryan Kizer  
Page five of 6

- FDEP facility number, and the name and address of the facility;
- b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
  - c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
  - d) A statement of the material facts disputed by the petitioner, if any;
  - e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
  - f) A statement of which rules or statutes petitioner contends requires reversal or modification of the Department's action or proposed action; and
  - g) A statement of the relief petitioner seeks, stating precisely what petitioner wants the Department to do regarding the Department's action or proposed action.

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

#### Judicial Review

Any party to this Order has the right to seek judicial review of this Order pursuant to Section 120.68, F.S., by filing a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Department clerk in the Office of the General Counsel, 3900 Commonwealth Boulevard, MS 35, Tallahassee, Florida 32399-3000. Simultaneously with filing a Notice of Appeal with the Department, petitioner must file a copy of the Notice of Appeal with the applicable filing fees, with the appropriate District Court of Appeal. The Notice of Appeal must be received by the Department clerk within 30 days from the date this Order was signed by the Department clerk (see below).

#### Questions

Should you have any questions regarding the legal processes, please contact the Office of the General Counsel at (850) 488-9730. Any questions you may have on the technical aspects of this Order should be directed to Michael J. Deliz,

Mr. Bryan Kizer  
Page six of 6

P.G. at (850) 921-9991. Contact with any of the above does not constitute a petition for administrative hearing.

Sincerely,



John M. Ruddell, Director  
Division of Waste Management

JMR/mjd

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

Minnie L. Lawson  
Clerk  
(or Deputy Clerk)

4/3/98  
Date

c: Deborah Metrin, FDEP Central District  
David Kruzicki, NAS Cecil Field

**ATTACHMENT B**  
**GROUNDWATER ANALYTICAL REPORT**

**Technical Report for**

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Tetra Tech, NUS

Ocala F-18 Crash site CTO209

N4093-WR332

Accutest Job Number: F17456

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Report to:

Tetra Tech, NUS

dalem@ttnus.com

ATTN: Merv Dale

Total number of pages in report: 10



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

  
Harry Behzadi, 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: F17456

Ocala F-18 Crash site CTO209  
Project No: N4093-WR332

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
F17456-1	04/21/03	13:35 CG	04/22/03	AQ	Ground Water	CEF-CS-GW-1A6
F17456-2	04/21/03	14:35 CG	04/22/03	AQ	Ground Water	CEF-CS-GW-3-6
F17456-3	04/21/03	14:03 CG	04/22/03	AQ	Ground Water	CEF-CS-GW-7-6
F17456-4	04/21/03	00:00 CG	04/22/03	AQ	Ground Water	CEF-CS-GW-DU01

## Report of Analysis

Client Sample ID:	CEF-CS-GW-1A6	Date Sampled:	04/21/03
Lab Sample ID:	F17456-1	Date Received:	04/22/03
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	Ocala F-18 Crash site CTO209		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	CD037791.D	1	04/24/03	BM	n/a	n/a	GCD1520
Run #2							

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

## Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	10.6	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	0.56	1.0	0.50	ug/l	J
1330-20-7	Xylenes (total)	9.2	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
352-33-0	1-Chloro-4-fluorobenzene	97%		74-127%
98-08-8	aaa-Trifluorotoluene	97%		73-135%

(a) All hits confirmed by dual column analysis.

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

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

## Report of Analysis

Client Sample ID:	CEF-CS-GW-1A6	Date Sampled:	04/21/03
Lab Sample ID:	F17456-1	Date Received:	04/22/03
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 8310 SW846 3510C		
Project:	Ocala F-18 Crash site CTO209		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	AA015506.D	1	04/25/03	SKW	04/24/03	OP7420	GAA739
Run #2							

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

## BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
50-32-8	Benzo(a)pyrene	ND	0.21	0.11	ug/l	
91-20-3	Naphthalene	13.4	2.1	0.53	ug/l	
90-12-0	1-Methylnaphthalene	30.7	2.1	0.53	ug/l	
91-57-6	2-Methylnaphthalene	30.4	2.1	0.53	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	98%		32-142%		
92-94-4	p-Terphenyl	73%		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

## Report of Analysis

Client Sample ID:	CEF-CS-GW-3-6	Date Sampled:	04/21/03
Lab Sample ID:	F17456-2	Date Received:	04/22/03
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	Ocala F-18 Crash site CTO209		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	CD037784.D	1	04/24/03	BM	n/a	n/a	GCD1520
Run #2							

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

## Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-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	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
352-33-0	1-Chloro-4-fluorobenzene	95%		74-127%
98-08-8	aaa-Trifluorotoluene	97%		73-135%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

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

## Report of Analysis

Client Sample ID: CEF-CS-GW-3-6 Lab Sample ID: F17456-2 Matrix: AQ - Ground Water Method: EPA 8310 SW846 3510C Project: Ocala F-18 Crash site CTO209	Date Sampled: 04/21/03 Date Received: 04/22/03 Percent Solids: n/a
--	--

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA015507.D	1	04/25/03	SKW	04/24/03	OP7420	GAA739
Run #2							

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

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
50-32-8	Benzo(a)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	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	79%		32-142%
92-94-4	p-Terphenyl	81%		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

## Report of Analysis

Client Sample ID: CEF-CS-GW-7-6	Date Sampled: 04/21/03
Lab Sample ID: F17456-3	Date Received: 04/22/03
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8021B	
Project: Ocala F-18 Crash site CTO209	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	CD037792.D	1	04/24/03	BM	n/a	n/a	GCD1520
Run #2							

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

### Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-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	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
352-33-0	1-Chloro-4-fluorobenzene	95%		74-127%
98-08-8	aaa-Trifluorotoluene	97%		73-135%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

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

## Report of Analysis

Client Sample ID:	CEF-CS-GW-7-6	Date Sampled:	04/21/03
Lab Sample ID:	F17456-3	Date Received:	04/22/03
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 8310 SW846 3510C		
Project:	Ocala F-18 Crash site CTO209		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA015508.D	1	04/25/03	SKW	04/24/03	OP7420	GAA739
Run #2							

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

## BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
50-32-8	Benzo(a)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	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	71%		32-142%
92 94 4	p-Terphenyl	73%		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

## Report of Analysis

Client Sample ID:	CEF-CS-GW-DU01	Date Sampled:	04/21/03
Lab Sample ID:	F17456-4	Date Received:	04/22/03
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	Ocala F-18 Crash site CTO209		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	CD037785.D	1	04/24/03	BM	n/a	n/a	GCD1520
Run #2							

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

## Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-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	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
352-33-0	1-Chloro-4-fluorobenzene	94%		74-127%
98-08-8	aaa-Trifluorotoluene	96%		73-135%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

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

## Report of Analysis

Client Sample ID:	CEF-CS-GW-DU01	Date Sampled:	04/21/03
Lab Sample ID:	F17456-4	Date Received:	04/22/03
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 8310 SW846 3510C		
Project:	Ocala F-18 Crash site CTO209		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA015509.D	1	04/25/03	SKW	04/24/03	OP7420	GAA739
Run #2							

Run #	Initial Volume	Final Volume
Run #1	970 ml	1.0 ml
Run #2		

## BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
50-32-8	Benzo(a)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	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	83%		32-142%
92-94-4	p-Terphenyl	85%		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



# CHAIN OF CUSTODY

4405 VINELAND ROAD • SUITE C-15  
ORLANDO, FL 32811  
TEL: 407-425-8700 • FAX: 407-425-0707

ACCUTEST JOB #: **F17456**  
ACCUTEST QUOTE #:

<b>CLIENT INFORMATION</b>	<b>FACILITY INFORMATION</b>	<b>ANALYTICAL INFORMATION</b>	<b>MATRIX CODES</b>
NAME: <u>Paul Calligan</u> Tetra Tech NUS, Inc ADDRESS: <u>5421 Beaumont Center Blvd #660</u> CITY: <u>Tampa</u> STATE: <u>FL</u> ZIP: <u>33634</u> SEND REPORT TO: <u>813-806-0202</u> PHONE #	PROJECT NAME: <u>Ocala F-18 Crash site</u> LOCATION: <u>Ocala, FL</u> PROJECT NO.: <u>N4093-WR332</u> FAX #: <u>813-806-0405</u>	* 802/B * P4Hs B310	DW - DRINKING WATER GW - GROUND WATER WW - WASTE WATER SO - SOIL SL - SLUDGE OI - OIL LIQ - OTHER LIQUID SOL - OTHER SOLID

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION			PRESERVATION					802/B *	P4Hs B310	LAB USE ONLY		
		DATE	TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	H2	H2O2	HNO3				H2SO4	NONE
1	CEF-CS-GW-1A6	4/21/03	1335	CG	GW	5						3	2	
2	CEF-CS-GW-3-6	4/21/03	1435	SRM	GW	5						3	2	
3	CEF-CS-GW-7-6	4/21/03	1403	SRM	GW	5						3	2	
4	CEF-CS-GW-DU01	4/21/03	0000	SRM	GW	5						3	2	
	<del>Trip Blank SRM</del>	<del>4/21/03</del>										<del>2</del>		
	<del>Temp Blank</del>	<del>4/21/03</del>												

<b>DATA TURNAROUND INFORMATION</b>	<b>DATA DELIVERABLE INFORMATION</b>	<b>COMMENTS/REMARKS</b>
<input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> 48 HOUR RUSH <input type="checkbox"/> 24 HOUR EMERGENCY <input type="checkbox"/> OTHER APPROVED BY: _____ EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED	<input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> COMMERCIAL "B" <input type="checkbox"/> DISK DELIVERABLE <input type="checkbox"/> STATE FORMS <input type="checkbox"/> OTHER (SPECIFY) _____	* As Per Work Release Number N4093-WR332  Cool to 4°C

**SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY**

RELINQUISHED BY: <u>Scott R. McJ</u>	DATE TIME: <u>4/22/03 0700</u>	RECEIVED BY: <u>1. Courier</u>	RELINQUISHED BY: <u>2.</u>	DATE TIME: <u>4/22/03/14</u>	RECEIVED BY: <u>2. Muna Mohammed</u>
RELINQUISHED BY: <u>3.</u>	DATE TIME:	RECEIVED BY: <u>3.</u>	RELINQUISHED BY: <u>4.</u>	DATE TIME:	RECEIVED BY: <u>4.</u>
RELINQUISHED BY: <u>5.</u>	DATE TIME:	RECEIVED BY: <u>5.</u>	SEAL #	PRESERVE WHERE APPLICABLE <input type="checkbox"/>	ON ICE <input type="checkbox"/>
					TEMPERATURE <u>2.0 C</u>