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NAS CECIL FIELD
5090.3a

LETTER REPORT ANNUAL GROUNDWATER MONITORING REPORT FIRST SEMI ANNUAL
FOURTH YEAR OCTOBER 2003
1/15/2004
TETRA TECH



TETRA TECH NUS, INC.

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Document Number 04JAX0052

January 15, 2004

Project Number N3996

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 (CTO) Number 0168

Subject: Annual Groundwater Monitoring Report
1st Semi-Annual, 4th Year (October 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 1st Semi-Annual, 4th year Groundwater Monitoring Report for the referenced CTO. 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 associated with 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 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 and including the sampling event conducted in October 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 October 24, 2003, from each of the monitoring wells prior to sample collection. The depth to water ranged from 17.78 feet (ft) below top of casing (btoc) (CEF-CS4) to 21.23 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 October 24, 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 October 24, 2003. Following collection, the samples were placed on ice and subsequently shipped under chain-of-custody to ENCO Laboratories in Jacksonville, Florida. The laboratory analyzed the samples for volatile organic compounds (VOCs) using United States Environmental Protection Agency (USEPA) Method SW846 8260 and for polynuclear aromatic hydrocarbons (PAHs) using USEPA Method SW846 8270. 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 concentrations of the VOC contaminants of concern (COCs), benzene and 1,2,4-trimethylbenzene, exceeded the respective groundwater cleanup target levels (GCTLs). Benzene was below the action level and milestone objective for the source well. The other VOC COCs that were detected were below applicable GCTLs. The PAH concentrations reported for the source well CEF-CS1A were below applicable GCTLs. The analytical data for the perimeter monitor wells show no petroleum impacts to groundwater.

A historical comparison of the VOC data for the source well from the April 2003 event to this event (see Table 3) indicates the following:

- The benzene concentration [GCTL = 1 micrograms per liter ($\mu\text{g/L}$)] has remained approximately static at 1.0 to 1.2 $\mu\text{g/L}$ for two of the last three events.
- The ethylbenzene concentration has decreased from an average concentration of approximately 37 $\mu\text{g/L}$ for the period from August 1998 to October 2002 to its current concentration of 11 $\mu\text{g/L}$, which is below the GCTL of 30 $\mu\text{g/L}$.
- The toluene concentration of 1.1 $\mu\text{g/L}$ has consistently stayed below the GCTL of 40 $\mu\text{g/L}$ since the monitoring program began for this site.
- The total xylenes concentration (GCTL = 20 $\mu\text{g/L}$) continued to decrease, and it has remained under the GCTL for the last three events.
- 1,2,4-Trimethylbenzene was reported at 53 $\mu\text{g/L}$, which is above the GCTL of 10 $\mu\text{g/L}$.

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

- The naphthalene concentrations have steadily decreased since the March 2001 event with the naphthalene concentration decreasing from 13.4 $\mu\text{g/L}$ to 8.4 $\mu\text{g/L}$ over the last two events. This event is the second time that the concentration has been below the GCTL of 20 $\mu\text{g/L}$.
- The concentrations for both 1- and 2-methylnaphthalene have steadily decreased since October 2002, and they have decreased to levels below the GCTL of 20 $\mu\text{g/L}$. Concentrations of 1- and 2-methylnaphthalene decreased from 30.7 $\mu\text{g/L}$ to 12 $\mu\text{g/L}$ and from 30.4 $\mu\text{g/L}$ to 13 $\mu\text{g/L}$, respectively.

CONCLUSIONS and RECOMMENDATIONS

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.

TtNUS recommends the addition of 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene to the list of COCs that will be monitored for future events at this site. TtNUS also recommends establishing an action level of 100 µg/L for each one. Since decreasing COC concentrations for the last three events appear to favor continued natural attenuation, TtNUS recommends continuing the monitoring program.

If you have any questions with regard to this submittal, please feel free to contact me please contact me by phone at (813) 806-0202, or via e-mail at calliganp@ttnus.com.

Sincerely,

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

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

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 (CD)

TABLES

Table 1
Groundwater Elevation and Monitoring Well Construction Data

Semi-Annual Groundwater Monitoring Report
 Ocala F-18 Crash Site
 Naval Air Station Cecil Field
 Jacksonville, Florida
 Page 1 of 3

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	
				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
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
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
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
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
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
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

See notes at end of table.

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

Semi-Annual Groundwater Monitoring Report
 Ocala F-18 Crash Site
 Naval Air Station Cecil Field
 Jacksonville, Florida
 Page 2 of 3

Monitoring Well Identification	Total Well Depth (ft, bls)	Screened Interval (ft, bls)	TOC Elevation (ft, msl)*	February 22, 1999		October 4, 1999		March 7, 2000		September 27, 2000	
				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	22.39	58.91	25.05	56.25	25.98	55.32	28.49	52.81
CEF-CS2	29.5	14.0 to 29.0	83.54	24.60	58.94	27.33	56.21	28.28	55.26	30.77	52.77
CEF-CS3	32	16.5 to 31.5	80.98	22.16	58.82	24.84	56.14	25.82	55.16	28.26	52.72
CEF-CS4	29.5	14.0 to 29.0	79.88	21.12	58.76	23.79	56.09	24.80	55.08	27.19	52.69
CEF-CS5	33	17.5 to 32.5	80.66	21.68	58.98	24.33	56.33	25.35	55.31	27.77	52.89
CEF-CS6	53.5	48.0 to 53.0	81.59	22.67	58.92	25.37	56.22	26.33	55.26	28.78	52.81
CEF-CS7	29.9	19.0 to 29.0	80.89	22.15	58.74	24.84	56.05	25.81	55.08	28.27	52.62

See notes at end of table.

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

Semi-Annual Groundwater Monitoring Report
 Ocala F-18 Crash Site
 Naval Air Station Cecil Field
 Jacksonville, Florida
 Page 3 of 3

Monitoring Well Identification	Total Well Depth (ft, bis)	Screened Interval (ft, bis)	TOC Elevation (ft, msl)*	March 7, 2001		October 4, 2002		April 21, 2003		October 24, 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)
CEF-CS1A	31	15.5 to 30.5	81.30	30.29	51.01	24.23	57.07	21.76	59.54	18.99	62.31
CEF-CS2	29.5	14.0 to 29.0	83.54	31.91	51.63	26.59	56.95	24.13	59.41	21.23	62.31
CEF-CS3	32	16.5 to 31.5	80.98	30.07	50.91	23.98	57.00	21.53	59.45	18.80	62.18
CEF-CS4	29.5	14.0 to 29.0	79.88	29.02	50.86	22.89	56.99	20.44	59.44	17.78	62.10
CEF-CS5	33	17.5 to 32.5	80.66	29.6	51.06	23.43	57.23	20.96	59.70	18.26	62.40
CEF-CS6	53.5	48.0 to 53.0	81.59	30.59	51.00	24.55	57.04	22.10	59.49	19.32	62.27
CEF-CS7	29.9	19.0 to 29.0	80.89	DRY	<50.99	23.97	56.92	21.52	59.37	18.82	62.07

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.

bis = below land surface

TOC = top of casing

msl = mean sea level

< = less than

**Table 2
Summary of Detections in Groundwater**

Semi-Annual Groundwater Monitoring Report
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)	GCTL ⁽¹⁾	Action Levels (source/ perimeter)	Milestone Objectives (end of year 4)
<u>VOCs (USEPA Method 8260) (µg/L)</u>						
Benzene	1.2	<1.0	<1.0	1	100/1	4
Ethylbenzene	11	<1.0	<1.0	30	300/30	30
Toluene	1.1	<1.0	<1.0	20	400/40	50
Total Xylenes	8.2	<3.0	<3.0	20	NA	NA
1,2,4 - Trimethylbenzene	53	<1.0	<1.0	10	NA	NA
<u>PAHs (USEPA Method 8270) (µg/L)</u>						
Naphthalene	8.4	<0.10	<0.10	20	200/20	30
1-Methylnaphthalene	12	<0.10	<0.10	20	NA	NA
2-Methylnaphthalene	13	<0.10	<0.10	20	NA	NA
Notes:						
*Based on the MONA Approval Order (Attachment A)						
(1) Groundwater Cleanup Target Level as defined by Chapter 62-777, FAC.						
NA = no value presented in the approval order						

Table 3
Summary of Detections in Groundwater

Semi-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 ¹					
	CEF-CS1A (source) ²												CEF-CS2	Action Levels (source/perimeter)	Milestone Objectives (end of year 1)	Milestone Objectives (end of year 2)	Milestone Objectives (end of year 3)	Milestone Objectives (end of year 4)	
	Aug 98	Nov 98	Feb 99	Oct 99	Mar 00	Mar 00 ³	Sep 00	Mar 01	Oct 02	Oct 02 ³	April 03	Oct 03							Oct 03 ³
VOCs⁴ (µg/L)																			
Benzene	16	14	13	16.9	16.6	16.6	42	39	1.0	1.2	ND	1.2	1.3	ND	100/1	12	10	8	4
Ethylbenzene	44	31	34	43.2	31.2	31.2	31	50	28.0	30.2	10.6	11	11	ND	300/30	70	50	40	30
Toluene	7.1	3.5	1.8	3.4	2.1	2.1	6	8.9	ND	0.61	0.56	1.1	1.0	ND	400/40	110	100	80	50
Total Xylenes	115	63	33	80.4	38.4	38.4	39	53	16.2	16.3	9.2	8.2	7.8	ND	NA	NA	NA	NA	NA
1,3,5- Trimethylbenzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	3.3	3.3	NS	NA	NA	NA	NA
1,2,4- Trimethylbenzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	53	51	NS	NA	NA	NA	NA	NA
PAHs⁵ (µg/L)																			
Naphthalene	52	75	39	16	29.5 ³	16.8	34	61	34.5	33.5	13.4	8.4	9.6	ND	200/20	110	90	60	30
1-Methylnaphthalene	45	87	31	27	37.2 ³	20.3	20	32	62.4	62.2	30.7	12	11	ND	NA	NA	NA	NA	NA
2-Methylnaphthalene	75	59	42	17	33.1 ³	19.6	18	38	58.7	57.5	30.4	13	14	ND	NA	NA	NA	NA	NA
See notes at the end of the table.																			

Table 3 (Continued)
Summary of Detections in Groundwater

Semi-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																			
	CEF-CS3 (perimeter)										CEF-CS7 (perimeter) ²									
	Aug 98	Nov 98	Feb 99	Oct 99	Mar 00	Aug 00	Mar 01	Oct 02	April 03	April 03 ³	Oct 03	Aug 98	Nov 98	Feb 99	Oct 99	Mar 00	Sep 00	Mar 01	Oct 02	April 03
VOCs⁴ (µg/L)																				
Benzene	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND
Ethylbenzene	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND
Toluene	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND
Total Xylenes	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	1.2	ND	ND	ND	NS	ND	ND	ND
1,3,5- Trimethylbenzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	ND							
1,2,4- Trimethylbenzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	ND							
PAHs⁵ (µg/L)																				
Naphthalene	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND
1-Methylnaphthalene	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND
2-Methylnaphthalene	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND

Notes:

¹Based on the MONA approval order.

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

³Duplicate sample collected at this well.

⁴USEPA Method 8021B or 8260 provides data at detection limits necessary to meet MONA approval order original requirement to use USEPA Method 602.

⁵May 1998 to February 1999 - USEPA Method 625; October 1999 to March 2000, USEPA Method 8310; September 2000, USEPA Method 8270C. Currently using either USEPA Method 8270C or 8310 to meet necessary detection limits.

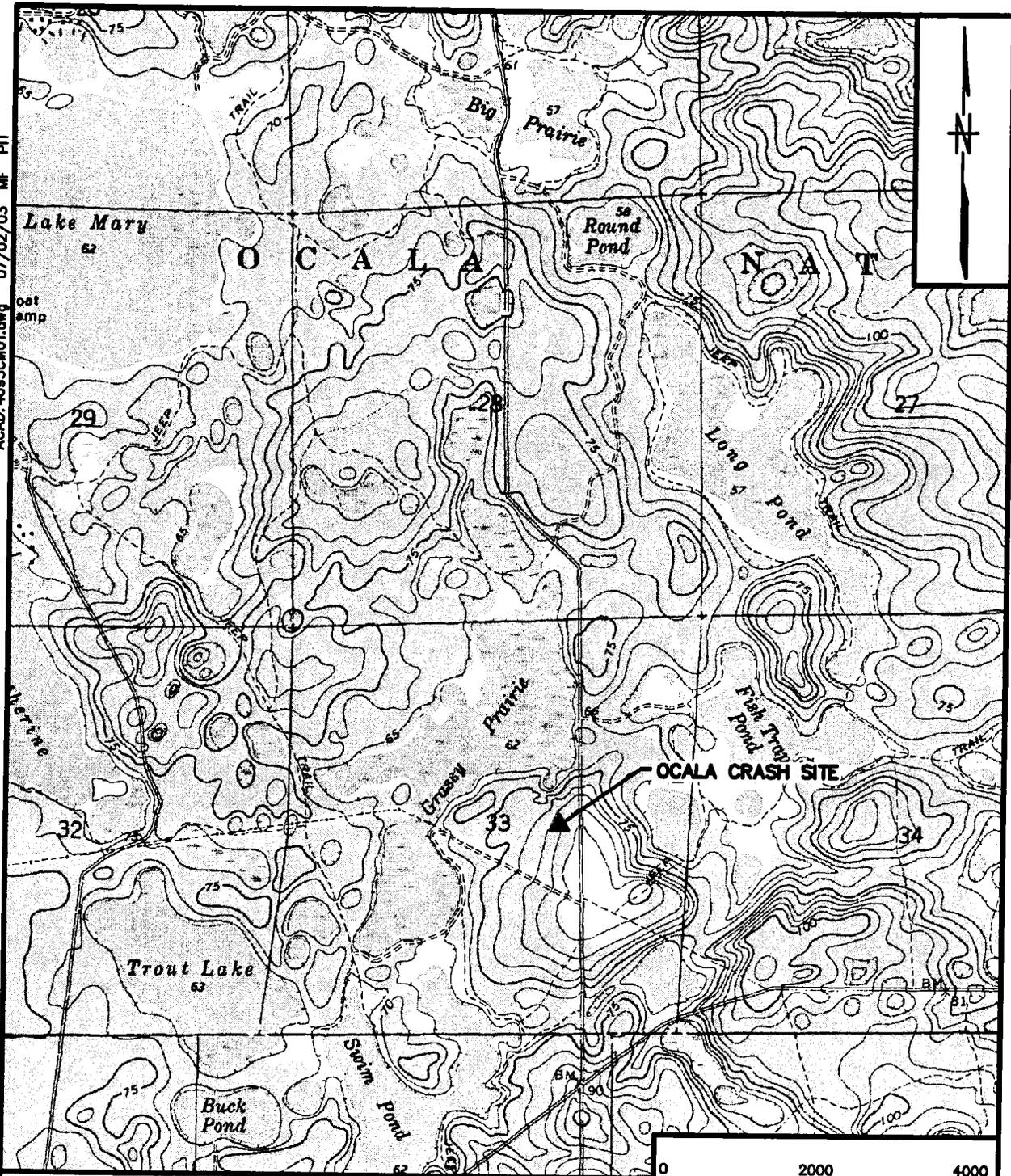
ND = none detected

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.



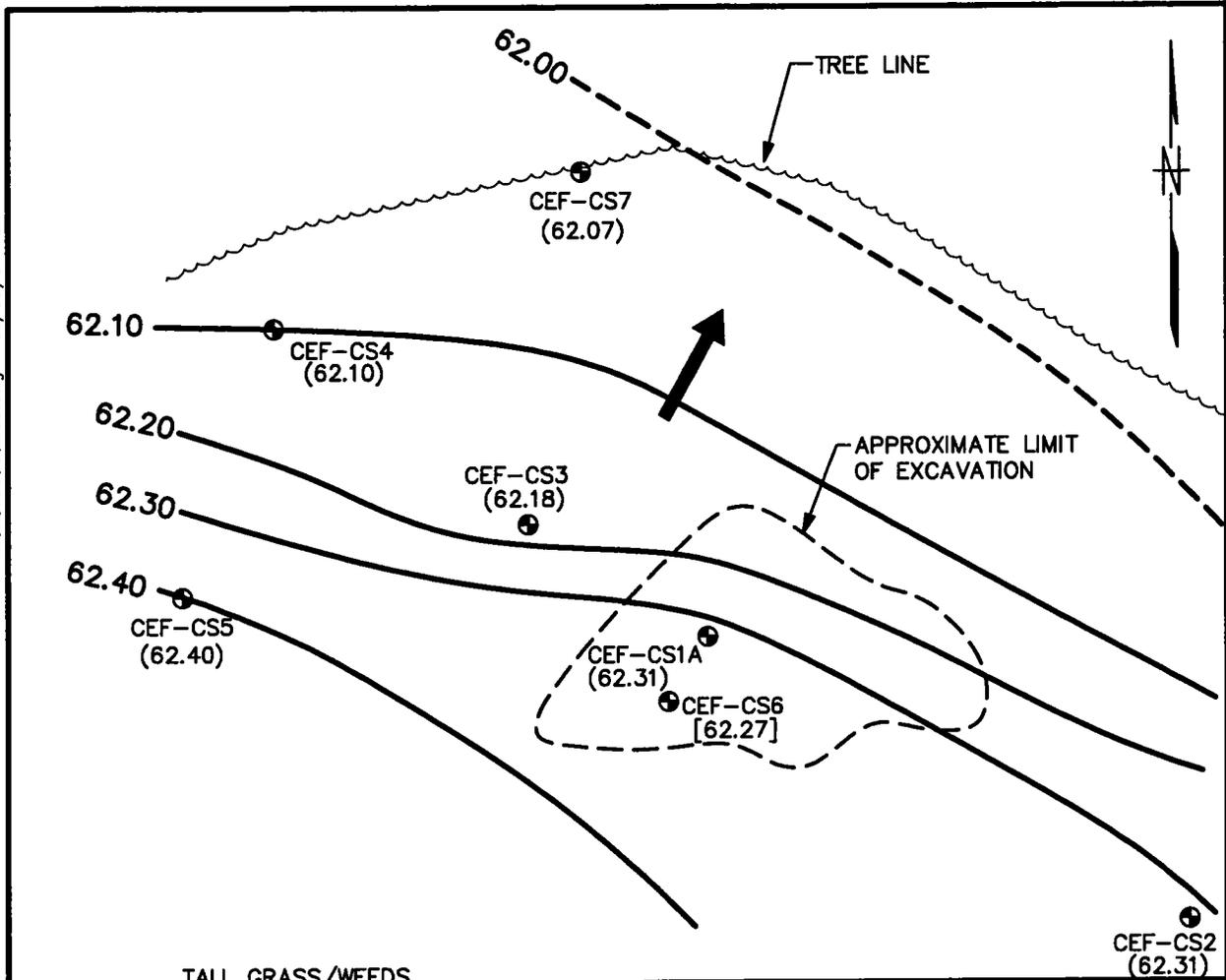
DRAWN BY	DATE
HJB	12/2/02
CHECKED BY	DATE
COST/SCHED-AREA	
SCALE	
AS NOTED	



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. FIGURE 1	REV. 0

ACAD: 3996CM06.dwg 01/09/04 DM PIT



LEGEND:

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

0 20 40
APPROXIMATE SCALE IN FEET

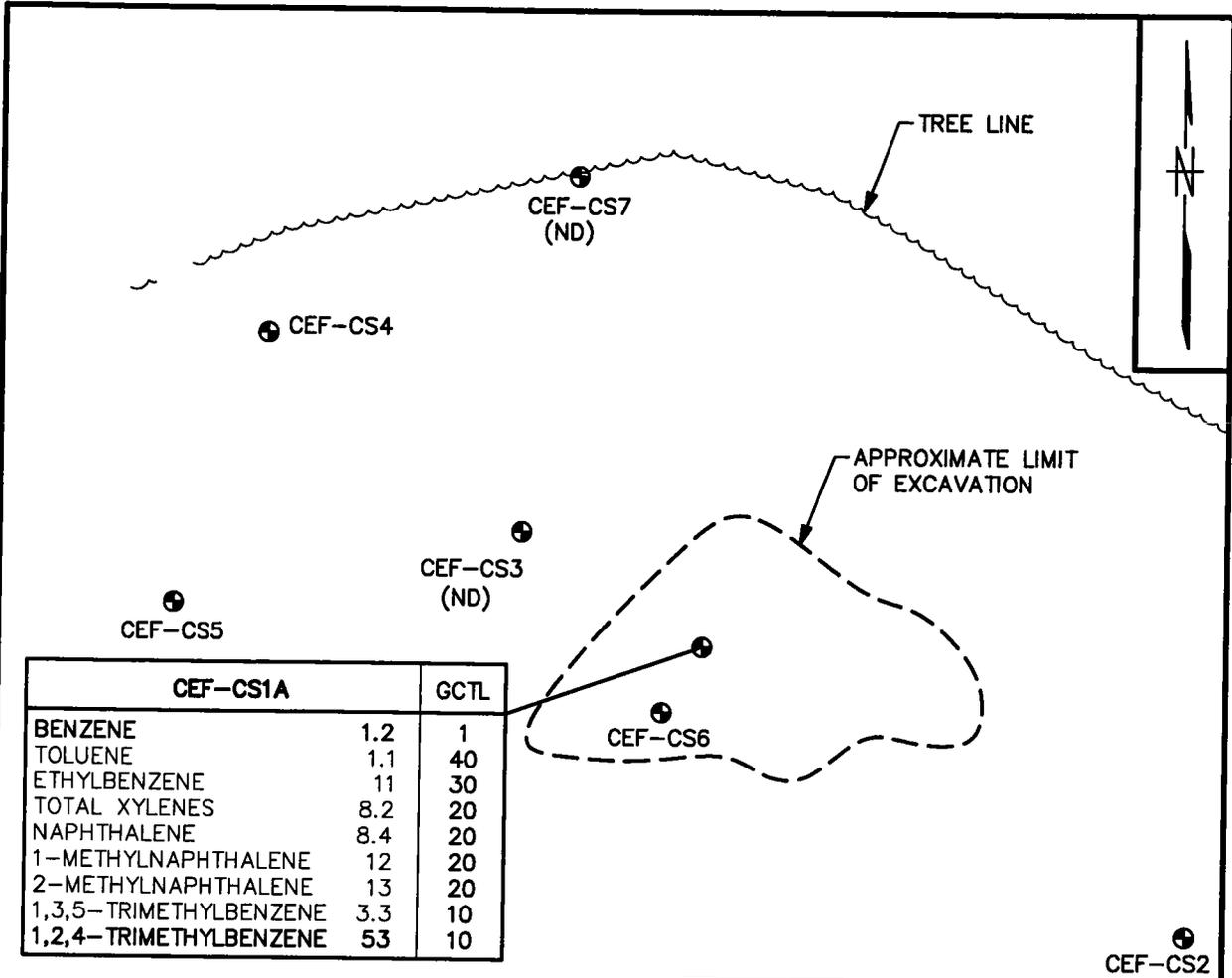
DRAWN BY	DATE
MF	12/8/03
CHECKED BY	DATE
COST/SCHED-AREA	
SCALE	
AS NOTED	



POTENTIOMETRIC SURFACE MAP
 OCTOBER 24, 2003
 OCALA F-18 CRASH SITE
 OCALA NATIONAL FOREST
 NAVAL AIR STATION CECIL FIELD
 JACKSONVILLE, FLORIDA

CONTRACT NO. 3996	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 2	REV. 0

ACAD: 3996GT01.dwg 01/09/04 DM PIT



CEF-CS1A		GCTL
BENZENE	1.2	1
TOLUENE	1.1	40
ETHYLBENZENE	11	30
TOTAL XYLENES	8.2	20
NAPHTHALENE	8.4	20
1-METHYLNAPHTHALENE	12	20
2-METHYLNAPHTHALENE	13	20
1,3,5-TRIMETHYLBENZENE	3.3	10
1,2,4-TRIMETHYLBENZENE	53	10

TALL GRASS/WEEDS

LEGEND:

- ⊕ CEF-CS2 MONITORING WELL LOCATION AND DESIGNATION
- μg/L MICROGRAMS PER LITER
- ND COMPOUND NOT DETECTED
- GCTL GROUNDWATER CLEANUP TARGET LEVEL

NOTE:

1. CONCENTRATIONS SHOWN ARE MEASURED IN μg/L.
2. EXCEEDANCES ARE SHOWN BOLD.

0 20 40
 APPROXIMATE SCALE IN FEET

DRAWN BY	DATE
MF	12/8/03
CHECKED BY	DATE
COST/SCHED-AREA	
SCALE	
AS NOTED	



GROUNDWATER ANALYTICAL RESULTS
 OCTOBER 24, 2003
 Ocala F-18 CRASH SITE
 Ocala National Forest
 NAVAL AIR STATION CECIL FIELD
 JACKSONVILLE, FLORIDA

CONTRACT NO. 3996	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 3	REV. 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

<u>Naphthalene</u>	
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
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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).

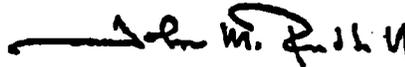
Questions

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

Sincerely,



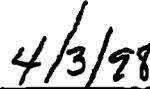
John M. Ruddell, Director
Division of Waste Management

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.



Clerk
(or Deputy Clerk)



Date

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

ATTACHMENT B
GROUNDWATER ANALYTICAL REPORT

CLIENT : Tetra Tech NUS
ADDRESS: Foster Plaza 7
661 Andersen Dr.
Pittsburg, PA 15220-2745

INVOICE # : JAX35103
DATE SUBMITTED : October 24, 2003
DATE REPORTED : October 31, 2003

CLIENT #: BR006

ATTENTION: Mr. Paul Calligan
REFERENCE: Ocala Crash Site Project
CTO 121

P.O. # : N0486-P3531(SS)

INVOICE

DESCRIPTION	PRICE	QTY	AMOUNT
SW-846 Method 8260 (Volatile Organics)	\$ 85.00	X 4	\$ 340.00
8270 (PAH's by Selected Ion Monitoring)	\$ 100.00	X 4	\$ 400.00
	TOTAL		\$ 740.00

Please remit payment to :
Environmental Conservation Laboratories, Inc.
9500 Satellite Blvd., Suite 190
Orlando, FL 32837-8466

TERMS: NET 30 DAYS

Past Due Balances are subject to a 1.5% per month service charge.

CLIENT : Tetra Tech NUS
ADDRESS: 8640 Philips Highway
Suite 16
Jacksonville, FL 32256

REPORT # : JAX35103
DATE SUBMITTED: October 24, 2003
DATE REPORTED : October 31, 2003

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ATTENTION: Mr. Paul Calligan

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

REFERENCE: CTO 121

Ocala Crash Site Project

10/24/03

JAX35103-1	:	CEF-CS-GW-7-7	@	14:30
JAX35103-2	:	CEF-CS-GW-3-7	@	15:00
JAX35103-3	:	CEF-CS-GW-1A-7	@	15:20
JAX35103-4	:	CEF-CS-GW-DUP01-7	@	00:00

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. This data has been produced in accordance with NELAC Standards (July, 1999). This report shall not be reproduced except in full, without the written approval of the laboratory. Results for these procedures apply only to the samples as submitted.

NOTE: The attached project narrative is a integral part of this report.

PROJECT MANAGER

Christopher K. Devore

ENCO LABORATORIES

REPORT # : JAX35103
 DATE REPORTED: October 31, 2003
 REFERENCE : CTO 121
 PROJECT NAME : Ocala Crash Site

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RESULTS OF ANALYSIS

EPA METHOD 8260 -
VOLATILE ORGANICS

	<u>CEF-CS-GW-7-7</u>	<u>CEF-CS-GW-3-7</u>	<u>Units</u>
Dichlorodifluoromethane	2.0 U	2.0 U	ug/L
Chloromethane	3.7 V	3.8 V	ug/L
Vinyl Chloride	1.0 U	1.0 U	ug/L
Bromomethane	2.0 U	2.0 U	ug/L
Chloroethane	2.0 U	2.0 U	ug/L
Trichlorofluoromethane	1.0 U	1.0 U	ug/L
1,1-Dichloroethene	1.0 U	1.0 U	ug/L
Acetone	50 U	50 U	ug/L
Carbon Disulfide	50 U	50 U	ug/L
Methylene Chloride	5.0 U	5.0 U	ug/L
t-1,2-Dichloroethene	1.0 U	1.0 U	ug/L
Methyl tert-butyl ether	1.0 U	1.0 U	ug/L
1,1-Dichloroethane	1.0 U	1.0 U	ug/L
2,2-Dichloropropane	2.0 U	2.0 U	ug/L
c-1,2-Dichloroethene	1.0 U	1.0 U	ug/L
2-Butanone	20 U	20 U	ug/L
Chloroform	1.0 U	1.0 U	ug/L
1,1,1-Trichloroethane	1.0 U	1.0 U	ug/L
Carbon tetrachloride	1.0 U	1.0 U	ug/L
1,1-Dichloropropene	1.0 U	1.0 U	ug/L
Benzene	1.0 U	1.0 U	ug/L
1,2-Dichloroethane	1.0 U	1.0 U	ug/L
Trichloroethene	1.0 U	1.0 U	ug/L
1,2-Dichloropropane	1.0 U	1.0 U	ug/L
Dibromomethane	1.0 U	1.0 U	ug/L
Bromodichloromethane	1.0 U	1.0 U	ug/L

V = Analyte was detected in both the sample and the associated method blank.
 U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES

REPORT # : JAX35103
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RESULTS OF ANALYSIS

EPA METHOD 8260 (cont.) -
VOLATILE ORGANICS

	<u>CEF-CS-GW-7-7</u>	<u>CEF-CS-GW-3-7</u>	<u>Units</u>
2-Chloroethyl vinyl ether	6.0 U	6.0 U	ug/L
c-1,3-Dichloropropene	1.0 U	1.0 U	ug/L
4-Methyl-2-pentanone	20 U	20 U	ug/L
Toluene	1.0 U	1.0 U	ug/L
t-1,3-Dichloropropene	1.0 U	1.0 U	ug/L
1,1,2-Trichloroethane	1.0 U	1.0 U	ug/L
Tetrachloroethene	3.0 U	3.0 U	ug/L
1,3-Dichloropropane	1.0 U	1.0 U	ug/L
2-Hexanone	20 U	20 U	ug/L
Dibromochloromethane	1.0 U	1.0 U	ug/L
1,2-Dibromoethane	1.0 U	1.0 U	ug/L
Chlorobenzene	1.0 U	1.0 U	ug/L
1,1,1,2-Tetrachloroethane	1.0 U	1.0 U	ug/L
Ethylbenzene	1.0 U	1.0 U	ug/L
m-Xylene & p-Xylene	2.0 U	2.0 U	ug/L
o-Xylene	1.0 U	1.0 U	ug/L
Styrene	1.0 U	1.0 U	ug/L
Bromoform	1.0 U	1.0 U	ug/L
Isopropylbenzene	1.0 U	1.0 U	ug/L
1,1,2,2-Tetrachloroethane	1.0 U	1.0 U	ug/L
Bromobenzene	1.0 U	1.0 U	ug/L
1,2,3-Trichlorobenzene	1.0 U	1.0 U	ug/L
n-Propylbenzene	1.0 U	1.0 U	ug/L
2-Chlorotoluene	1.0 U	1.0 U	ug/L
1,3,5-Trimethylbenzene	1.0 U	1.0 U	ug/L
4-Chlorotoluene	1.0 U	1.0 U	ug/L

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
 REPORT # : JAX35103
 DATE REPORTED: October 31, 2003
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RESULTS OF ANALYSIS

<u>EPA METHOD 8260 (cont.) - VOLATILE ORGANICS</u>	<u>CEF-CS-GW-7-7</u>	<u>CEF-CS-GW-3-7</u>	<u>Units</u>
tert-Butylbenzene	1.0 U	1.0 U	ug/L
1,2,4-Trimethylbenzene	1.0 U	1.0 U	ug/L
s-Butylbenzene	1.0 U	1.0 U	ug/L
1,3-Dichlorobenzene	1.0 U	1.0 U	ug/L
p-Isopropyltoluene	1.0 U	1.0 U	ug/L
1,4-Dichlorobenzene	1.0 U	1.0 U	ug/L
n-Butylbenzene	1.0 U	1.0 U	ug/L
1,2-Dichlorobenzene	1.0 U	1.0 U	ug/L
1,2-Dibromo-3-chloropropane	1.0 U	1.0 U	ug/L
1,2,4-Trichlorobenzene	1.0 U	1.0 U	ug/L
Hexachlorobutadiene	1.0 U	1.0 U	ug/L
Naphthalene	2.0 U	2.0 U	ug/L
1,2,3-Trichloropropane	1.0 U	1.0 U	ug/L
Bromochloromethane	1.0 U	1.0 U	ug/L
<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
Dibromofluoromethane	70	59	67-139
D8-Toluene	98	113	80-115
Bromofluorobenzene	94	88	66-131
Date Analyzed	10/31/03 12:31	10/31/03 13:08	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES

REPORT # : JAX35103
 DATE REPORTED: October 31, 2003
 REFERENCE : CTO 121
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RESULTS OF ANALYSIS

EPA METHOD 8270 -
PAH Compounds by SIM

	<u>CEF-CS-GW-7-7</u>	<u>CEF-CS-GW-3-7</u>	<u>Units</u>
Naphthalene	0.10 U	0.10 U	ug/L
2-Methylnaphthalene	0.10 U	0.10 U	ug/L
1-Methylnaphthalene	0.10 U	0.10 U	ug/L
Acenaphthylene	0.10 U	0.10 U	ug/L
Acenaphthene	0.10 U	0.10 U	ug/L
Fluorene	0.10 U	0.10 U	ug/L
Phenanthrene	0.10 U	0.10 U	ug/L
Anthracene	0.10 U	0.10 U	ug/L
Fluoranthene	0.10 U	0.10 U	ug/L
Pyrene	0.10 U	0.10 U	ug/L
Chrysene	0.10 U	0.10 U	ug/L
Benzo (a) anthracene	0.10 U	0.10 U	ug/L
Benzo (b) fluoranthene	0.10 U	0.10 U	ug/L
Benzo (k) fluoranthene	0.10 U	0.10 U	ug/L
Benzo (a) pyrene	0.10 U	0.10 U	ug/L
Indeno (1, 2, 3-cd) pyrene	0.10 U	0.10 U	ug/L
Dibenzo (a, h) anthracene	0.10 U	0.10 U	ug/L
Benzo (g, h, i) perylene	0.10 U	0.10 U	ug/L
<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
p-Terphenyl	64	65	20-148
Date Prepared	10/27/03	10/27/03	
Date Analyzed	10/27/03 21:16	10/27/03 21:39	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES

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 DATE REPORTED: October 31, 2003
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 PROJECT NAME : Ocala Crash Site

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RESULTS OF ANALYSIS

<u>EPA METHOD 8260 - VOLATILE ORGANICS</u>	<u>CEF-CS-GW-1A-7</u>	<u>CEF-CS-GW-DUP01-7</u>	<u>Units</u>
Dichlorodifluoromethane	2.0 U	2.0 U	ug/L
Chloromethane	3.6 V	3.7 V	ug/L
Vinyl Chloride	1.0 U	1.0 U	ug/L
Bromomethane	2.0 U	2.0 U	ug/L
Chloroethane	2.0 U	2.0 U	ug/L
Trichlorofluoromethane	1.0 U	1.0 U	ug/L
1,1-Dichloroethene	1.0 U	1.0 U	ug/L
Acetone	50 U	50 U	ug/L
Carbon Disulfide	50 U	50 U	ug/L
Methylene Chloride	5.0 U	5.0 U	ug/L
t-1,2-Dichloroethene	1.0 U	1.0 U	ug/L
Methyl tert-butyl ether	1.0 U	1.0 U	ug/L
1,1-Dichloroethane	1.0 U	1.0 U	ug/L
2,2-Dichloropropane	2.0 U	2.0 U	ug/L
c-1,2-Dichloroethene	1.0 U	1.0 U	ug/L
2-Butanone	20 U	20 U	ug/L
Chloroform	1.0 U	1.0 U	ug/L
1,1,1-Trichloroethane	1.0 U	1.0 U	ug/L
Carbon tetrachloride	1.0 U	1.0 U	ug/L
1,1-Dichloropropene	1.0 U	1.0 U	ug/L
Benzene	1.2	1.3	ug/L
1,2-Dichloroethane	1.0 U	1.0 U	ug/L
Trichloroethene	1.0 U	1.0 U	ug/L
1,2-Dichloropropane	1.0 U	1.0 U	ug/L
Dibromomethane	1.0 U	1.0 U	ug/L
Bromodichloromethane	1.0 U	1.0 U	ug/L

V = Analyte was detected in both the sample and the associated method blank.
 U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES

REPORT # : JAX35103
 DATE REPORTED: October 31, 2003
 REFERENCE : CTO 121
 PROJECT NAME : Ocala Crash Site

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RESULTS OF ANALYSIS

EPA METHOD 8260 (cont.) -
 VOLATILE ORGANICS

	<u>CEF-CS-GW-1A-7</u>	<u>CEF-CS-GW-DUP01-7</u>	<u>Units</u>
2-Chloroethyl vinyl ether	6.0 U	6.0 U	ug/L
c-1,3-Dichloropropene	1.0 U	1.0 U	ug/L
4-Methyl-2-pentanone	20 U	20 U	ug/L
Toluene	1.1	1.0	ug/L
t-1,3-Dichloropropene	1.0 U	1.0 U	ug/L
1,1,2-Trichloroethane	1.0 U	1.0 U	ug/L
Tetrachloroethene	3.0 U	3.0 U	ug/L
1,3-Dichloropropane	1.0 U	1.0 U	ug/L
2-Hexanone	20 U	20 U	ug/L
Dibromochloromethane	1.0 U	1.0 U	ug/L
1,2-Dibromoethane	1.0 U	1.0 U	ug/L
Chlorobenzene	1.0 U	1.0 U	ug/L
1,1,1,2-Tetrachloroethane	1.0 U	1.0 U	ug/L
Ethylbenzene	11	11	ug/L
m-Xylene & p-Xylene	6.5	6.1	ug/L
o-Xylene	1.7	1.7	ug/L
Styrene	1.0 U	1.0 U	ug/L
Bromoform	1.0 U	1.0 U	ug/L
Isopropylbenzene	6.0	6.0	ug/L
1,1,2,2-Tetrachloroethane	1.0 U	1.0 U	ug/L
Bromobenzene	1.0 U	1.0 U	ug/L
1,2,3-Trichlorobenzene	1.0 U	1.0 U	ug/L
n-Propylbenzene	10	10	ug/L
2-Chlorotoluene	1.0 U	1.0 U	ug/L
1,3,5-Trimethylbenzene	3.3	3.3	ug/L
4-Chlorotoluene	1.0 U	1.0 U	ug/L

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES

REPORT # : JAX35103
 DATE REPORTED: October 31, 2003
 REFERENCE : CTO 121
 PROJECT NAME : Ocala Crash Site

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RESULTS OF ANALYSIS

EPA METHOD 8260 (cont.) -
VOLATILE ORGANICS

	<u>CEF-CS-GW-1A-7</u>	<u>CEF-CS-GW-DUP01-7</u>	<u>Units</u>
tert-Butylbenzene	1.0 U	1.0 U	ug/L
1,2,4-Trimethylbenzene	53	51	ug/L
s-Butylbenzene	8.3	8.6	ug/L
1,3-Dichlorobenzene	1.0 U	1.0 U	ug/L
p-Isopropyltoluene	5.8	5.6	ug/L
1,4-Dichlorobenzene	1.0 U	1.0 U	ug/L
n-Butylbenzene	5.7	5.8	ug/L
1,2-Dichlorobenzene	1.0 U	1.0 U	ug/L
1,2-Dibromo-3-chloropropane	1.0 U	1.0 U	ug/L
1,2,4-Trichlorobenzene	1.0 U	1.0 U	ug/L
Hexachlorobutadiene	1.0 U	1.0 U	ug/L
Naphthalene	20	22	ug/L
1,2,3-Trichloropropane	1.0 U	1.0 U	ug/L
Bromochloromethane	1.0 U	1.0 U	ug/L
<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
Dibromofluoromethane	76	62	67-139
D8-Toluene	102	96	80-115
Bromofluorobenzene	95	96	66-131
Date Analyzed	10/31/03 13:44	10/31/03 14:21	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES

REPORT # : JAX35103
 DATE REPORTED: October 31, 2003
 REFERENCE : CTO 121
 PROJECT NAME : Ocala Crash Site

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RESULTS OF ANALYSIS

EPA METHOD 8270 -
PAH Compounds by SIM

	<u>CEF-CS-GW-1A-7</u>	<u>CEF-CS-GW-DUP01-7</u>	<u>Units</u>
Naphthalene	8.4	9.6	ug/L
2-Methylnaphthalene	13	14	ug/L
1-Methylnaphthalene	12	11	ug/L
Acenaphthylene	0.10 U	0.10 U	ug/L
Acenaphthene	0.10 U	0.10 U	ug/L
Fluorene	0.10 U	0.10 U	ug/L
Phenanthrene	0.10 U	0.10 U	ug/L
Anthracene	0.10 U	0.10 U	ug/L
Fluoranthene	0.10 U	0.10 U	ug/L
Pyrene	0.10 U	0.10 U	ug/L
Chrysene	0.10 U	0.10 U	ug/L
Benzo(a) anthracene	0.10 U	0.10 U	ug/L
Benzo(b) fluoranthene	0.10 U	0.10 U	ug/L
Benzo(k) fluoranthene	0.10 U	0.10 U	ug/L
Benzo(a) pyrene	0.10 U	0.10 U	ug/L
Indeno(1,2,3-cd) pyrene	0.10 U	0.10 U	ug/L
Dibenzo(a,h) anthracene	0.10 U	0.10 U	ug/L
Benzo(g,h,i) perylene	0.10 U	0.10 U	ug/L
<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
p-Terphenyl	67	69	20-148
Date Prepared	10/27/03	10/27/03	
Date Analyzed	10/28/03 17:22	10/27/03 22:25	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES

REPORT # : JAX35103
DATE REPORTED: October 31, 2003
REFERENCE : CTO 121
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RESULTS OF ANALYSIS

EPA METHOD 8260 -
VOLATILE ORGANICS

	<u>LAB BLANK</u>	<u>Units</u>
Dichlorodifluoromethane	2.0 U	ug/L
Chloromethane	4.1	ug/L
Vinyl Chloride	1.0 U	ug/L
Bromomethane	2.0 U	ug/L
Chloroethane	2.0 U	ug/L
Trichlorofluoromethane	1.0 U	ug/L
1,1-Dichloroethene	1.0 U	ug/L
Acetone	50 U	ug/L
Carbon Disulfide	50 U	ug/L
Methylene Chloride	5.0 U	ug/L
t-1,2-Dichloroethene	1.0 U	ug/L
Methyl tert-butyl ether	1.0 U	ug/L
1,1-Dichloroethane	1.0 U	ug/L
2,2-Dichloropropane	2.0 U	ug/L
c-1,2-Dichloroethene	1.0 U	ug/L
2-Butanone	20 U	ug/L
Chloroform	1.0 U	ug/L
1,1,1-Trichloroethane	1.0 U	ug/L
Carbon tetrachloride	1.0 U	ug/L
1,1-Dichloropropene	1.0 U	ug/L
Benzene	1.0 U	ug/L
1,2-Dichloroethane	1.0 U	ug/L
Trichloroethene	1.0 U	ug/L
1,2-Dichloropropane	1.0 U	ug/L
Dibromomethane	1.0 U	ug/L
Bromodichloromethane	1.0 U	ug/L

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES

REPORT # : JAX35103
DATE REPORTED: October 31, 2003
REFERENCE : CTO 121
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RESULTS OF ANALYSIS

EPA METHOD 8260 (cont.) -
VOLATILE ORGANICS

	<u>LAB BLANK</u>	<u>Units</u>
2-Chloroethyl vinyl ether	6.0 U	ug/L
c-1,3-Dichloropropene	1.0 U	ug/L
4-Methyl-2-pentanone	20 U	ug/L
Toluene	1.0 U	ug/L
t-1,3-Dichloropropene	1.0 U	ug/L
1,1,2-Trichloroethane	1.0 U	ug/L
Tetrachloroethene	3.0 U	ug/L
1,3-Dichloropropane	1.0 U	ug/L
2-Hexanone	20 U	ug/L
Dibromochloromethane	1.0 U	ug/L
1,2-Dibromoethane	1.0 U	ug/L
Chlorobenzene	1.0 U	ug/L
1,1,1,2-Tetrachloroethane	1.0 U	ug/L
Ethylbenzene	1.0 U	ug/L
m-Xylene & p-Xylene	2.0 U	ug/L
o-Xylene	1.0 U	ug/L
Styrene	1.0 U	ug/L
Bromoform	1.0 U	ug/L
Isopropylbenzene	1.0 U	ug/L
1,1,2,2-Tetrachloroethane	1.0 U	ug/L
Bromobenzene	1.0 U	ug/L
1,2,3-Trichlorobenzene	1.0 U	ug/L
n-Propylbenzene	1.0 U	ug/L
2-Chlorotoluene	1.0 U	ug/L
1,3,5-Trimethylbenzene	1.0 U	ug/L
4-Chlorotoluene	1.0 U	ug/L

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES

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RESULTS OF ANALYSIS

EPA METHOD 8260 (cont.) -
VOLATILE ORGANICS

	<u>LAB BLANK</u>	<u>Units</u>
tert-Butylbenzene	1.0 U	ug/L
1,2,4-Trimethylbenzene	1.0 U	ug/L
s-Butylbenzene	1.0 U	ug/L
1,3-Dichlorobenzene	1.0 U	ug/L
p-Isopropyltoluene	1.0 U	ug/L
1,4-Dichlorobenzene	1.0 U	ug/L
n-Butylbenzene	1.0 U	ug/L
1,2-Dichlorobenzene	1.0 U	ug/L
1,2-Dibromo-3-chloropropane	1.0 U	ug/L
1,2,4-Trichlorobenzene	1.0 U	ug/L
Hexachlorobutadiene	1.0 U	ug/L
Naphthalene	2.0 U	ug/L
1,2,3-Trichloropropane	1.0 U	ug/L
Bromochloromethane	1.0 U	ug/L
<u>Surrogate:</u>	<u>% RECOV</u>	<u>LIMITS</u>
Dibromofluoromethane	72	67-139
D8-Toluene	99	80-115
Bromofluorobenzene	98	66-131
Date Analyzed	10/31/03 11:55	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES

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RESULTS OF ANALYSIS

EPA METHOD 8270 -
PAH Compounds by SIM

	<u>LAB BLANK</u>	<u>Units</u>
Naphthalene	0.10 U	ug/L
2-Methylnaphthalene	0.10 U	ug/L
1-Methylnaphthalene	0.10 U	ug/L
Acenaphthylene	0.10 U	ug/L
Acenaphthene	0.10 U	ug/L
Fluorene	0.10 U	ug/L
Phenanthrene	0.10 U	ug/L
Anthracene	0.10 U	ug/L
Fluoranthene	0.10 U	ug/L
Pyrene	0.10 U	ug/L
Chrysene	0.10 U	ug/L
Benzo (a) anthracene	0.10 U	ug/L
Benzo (b) fluoranthene	0.10 U	ug/L
Benzo (k) fluoranthene	0.10 U	ug/L
Benzo (a) pyrene	0.10 U	ug/L
Indeno (1, 2, 3-cd) pyrene	0.10 U	ug/L
Dibenzo (a, h) anthracene	0.10 U	ug/L
Benzo (g, h, i) perylene	0.10 U	ug/L
<u>Surrogate:</u>	<u>% RECOV</u>	<u>LIMITS</u>
p-Terphenyl	68	20-148
Date Prepared	10/27/03	
Date Analyzed	10/27/03 20:29	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES

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LABORATORY CERTIFICATIONS

Laboratory Certification: NELAC:E82277

All analyses reported with this project were analyzed by the facility indicated unless identified below.

ENCO LABORATORIES
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QUALITY CONTROL DATA

<u>Parameter</u>	<u>% RECOVERY</u> <u>MS/MSD/LCS</u>	<u>ACCEPT</u> <u>LIMITS</u>	<u>% RPD</u> <u>MS/MSD</u>	<u>ACCEPT</u> <u>LIMITS</u>
<u>EPA Method 8260</u>				
1,1-Dichloroethene	102/108/106	40-155	6	30
Benzene	107/114/111	70-131	6	23
Trichloroethene	113/106/114	68-128	6	10
Toluene	103/101/110	84-116	2	12
Chlorobenzene	107/113/108	88-123	5	11
<u>EPA Method 8270</u>				
Naphthalene	48/ 48/ 59	30-112	<1	28
Acenaphthene	48/ 44/ 54	28-113	9	32
Benzo(a)pyrene	64/ 58/ 78	39-148	10	38
Benzo(g,h,i)perylene	71/ 66/ 71	20-130	7	43

< = Less Than
 MS = Matrix Spike
 MSD = Matrix Spike Duplicate
 LCS = Laboratory Control Standard
 RPD = Relative Percent Difference



ENVIRONMENTAL CONSERVATION LABORATORIES

طابق 3.0.4.0.0

QSARF # _____

P17154

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ENCO CompQAP No.: 960038G/0

CHAIN OF CUSTODY RECORD

PROJECT REFERENCE Ocala Crash Site Project					PROJECT NO. CTO 121					NO 486 P.D. NUMBER P3531(SS)					MATRIX TYPE					REQUIRED ANALYSIS					PAGE / OF	
PROJECT LOC. (State) FL		SAMPLER(S) NAME M. DATE / C. GLEATON			PHONE (904)-638-6125			FAX (904)-638-6165			SURFACE WATER GROUND WATER WASTEWATER DRINKING WATER SOIL/SOLID/SEDIMENT NONAQUEOUS LIQUID (oil, solvent, etc.) AIR SLUDGE OTHER					827/PP/PAV/S/M P280					STANDARD REPORT DELIVERY <input checked="" type="checkbox"/> EXPEDITED REPORT DELIVERY (surcharge) <input type="checkbox"/> Date Due: _____					
CLIENT NAME Tetra Tech NUS					CLIENT PROJECT MANAGER Mr. Shawn Coaff PAUL CALLIGAN																					
CLIENT ADDRESS (CITY, STATE, ZIP) 8640 Philips Highway Suite 16 Jacksonville, FL 32256																										
SAMPLE																										
STATION	DATE	TIME	GRAB	COMP	SAMPLE IDENTIFICATION					PRESERVATIVE					NUMBER OF CONTAINERS SUBMITTED					REMARKS						
1	10/24/03	1430	✓		CEF-CS-GW-7-7										1 2											
2	10/24/03	1500	✓		CEF-CS-GW-3-7										1 2											
3	10/24/03	1520	✓		CEF-CS-GW-1A-7										1 2											
4	10/24/03	0000	✓		CEF-CS-GW-DUPLO-7X										1 2											
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
SAMPLE KIT PREPARED BY:		DATE	TIME	RELINQUISHED BY: (SIGNATURE)					DATE	TIME	RECEIVED BY: (SIGNATURE)					DATE	TIME									
JACKSONVILLE ORLANDO		10/23/03	1720	M. DATE					10/24/03	1835																
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)					DATE	TIME	RELINQUISHED BY: (SIGNATURE)					DATE	TIME									
RECEIVED BY: (SIGNATURE)		DATE	TIME	RELINQUISHED BY: (SIGNATURE)					DATE	TIME	RECEIVED BY: (SIGNATURE)					DATE	TIME									
RECEIVED FOR LABORATORY BY: (SIGNATURE)		DATE	TIME	CUSTODY INTACT		ENCO LOG NO.		REMARKS																		
JACKSONVILLE ORLANDO		10/24/03	1835	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>				Samples received on wet ice CTO 168, 4.6																		