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NAS CECIL FIELD, FL
5090.3a

SECOND SEMI-ANNUAL SECOND YEAR GROUNDWATER MONITORING LETTER REPORT
FOR OCALA F-18 CRASH SITE NAS CECIL FIELD FL
9/20/2001
TETRA TECH NUS INC

Document Tracking No. 01JAX0089

September 20, 2001

Project Number 0486

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 No. N62467-94-D-0888
Contract Task Order No. 0121

Subject: Groundwater Monitoring Report, 2nd Semi-Annual, 2nd Year (March 2001)
Ocala F-18 Crash Site
Former Naval Air Station Cecil Field
Jacksonville, Florida

Dear Mr. Grabka:

Tetra Tech NUS, Inc. (TtNUS) is pleased to submit this second semi-annual Groundwater Monitoring Report for the referenced Contract Task Order (CTO) for the Ocala F-18 Crash Site. This groundwater monitoring report was prepared for the U.S. Navy Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) under the Comprehensive Long-term Environmental Action Navy (CLEAN) Contract Number N62467-94-D-0888. The objective of this task is to monitor groundwater associated with 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) 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 March 2001. Figure 1 shows the location of the site. The work was performed in general accord with the Base-wide Generic Work Plan Volumes I and II (TtNUS, 1998).

FIELD OPERATIONS

Water level measurements were recorded from each of the monitoring wells prior to sample collection. The depth to water ranged from 29.60 feet below top of casing (ft btoc) (CEF-CS5) to 31.91 ft btoc (CEF-CS2). However, well CEF-CS7 was dry, so no water level measurement was obtained from that monitoring well. 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 seven sampling events are provided on Table 1. A groundwater elevation contour map generated from the March 7, 2001 data is provided as Figure 2. Based on these data, the inferred direction of groundwater flow is to the north.

Groundwater samples were collected from two monitoring wells (CEF-CS1A and CEF-CS3) on March 7, 2001. Since monitoring well CEF-CS7 was dry, no downgradient sample was collected. Following collection, the samples were placed on ice and subsequently shipped under chain-of-custody to Accura Laboratories in Norcross, Georgia. The laboratory analyzed the samples for volatile organic compounds (VOCs), by United States Environmental Protection Agency (USEPA) Method SW846 8260B, and for polynuclear aromatic hydrocarbons (PAHs), by USEPA Method SW846 8270C. 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 A. Of the monitoring wells sampled semi-annually for the last 18 months (4 sampling events), only samples collected from the source well, CEF-CS1A, have had contaminant concentrations exceeding laboratory detection limits. The monitoring wells identified in the MONA Approval Order (CEF-CS1A, CEF-CS3 and CEF-CS7) have now been sampled during each of the last five semi-annual sampling events with two exceptions shown by the historical analytical data on Table 3.

Table 3 shows the concentrations for the samples from monitoring well CEF-CS1A. The sample from the source well shows that the 39 microgram per liter ($\mu\text{g/L}$) benzene concentration reported during this event is the second highest benzene concentration reported in this well. It is exceeded only by the data from the preceding sampling event held last September 2000. Ethylbenzene concentrations have ranged from 31 $\mu\text{g/L}$ (September 2000 and November 1998) to 50 $\mu\text{g/L}$ (March 2001). Toluene was recently reported at 6.8 $\mu\text{g/L}$ and has historically been less than 10 $\mu\text{g/L}$. Total xylene concentration has increased to 53 $\mu\text{g/L}$ from 39 $\mu\text{g/L}$ in September 2000. Except for a slight drop of 3 $\mu\text{g/L}$ for the benzene concentration between the September 2000 and this event, the VOC concentrations have increased.

Table 3 indicates that the methyl naphthalene concentrations have generally held to a pattern of fluctuation with generally higher levels during the spring sampling events and relatively lower levels during the fall sampling events. Currently, the concentrations for both PAH types exceed the GCTL of 20 $\mu\text{g/L}$. The concentration of naphthalene has continued to increase over the last four sampling events and it has exceeded the GCTL of 20 $\mu\text{g/L}$ for the last three events.

CONCLUSIONS and RECOMMENDATIONS

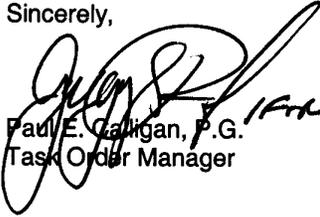
The VOC and PAH concentrations for the source well do not exceed action levels; however, the source well's milestone objective for benzene has been exceeded since monitoring first began at the site in 1998. The other contaminants of concern (COC) reported for samples from that well are at or below the corresponding milestone objectives. The perimeter monitoring wells continue to indicate no groundwater impact from the source area.

The analytical data from this sampling event indicate that no significant contaminant migration is occurring at the Ocala F-18 Crash Site because no COCs were detected in the perimeter wells required under the MONA approval order (Attachment B). The MONA order requires an explanation of the progress relative to these milestone objectives with the need for corrective action (if applicable). Since a soil source removal was accomplished in 1994 and 1995 by Bechtel Environmental Inc. and natural attenuation of the groundwater does not appear to be reducing COC concentrations at the site, TtNUS recommends preparation of a Remedial Action Plan (RAP) for the Ocala F-18 Crash Site.

Mr. David Grabka
FDEP
September 20, 2001 – Page 3

If you have any questions with regard to this submittal, please contact me at (850) 385-9866 extension 24.

Sincerely,


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


Mervin W. Dale, P.G.
Florida Professional Geologist
P.G. No. 0001917



PEC/lm

Attachments (7)

cc: N. Ugolini, SOUTHDIV
D. Vaughn-Wright, USEPA
D. Wroblewski, TtNUS (cover letter only)
M. Perry, TtNUS (unbound)

Mr. David Grabka
FDEP
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bcc: M. Dale, TtNUS
R. Simcik, TtNUS (bookcase file)
J. Johnson, TtNUS (Information Repository)

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

Monitoring Well Identification	Total Well Depth (feet, bls)	Screened Interval (feet, bls)	TOC Elevation (feet, msl) ¹	May 4, 1998		August 26, 1998		November 23, 1998		February 22, 1999	
				Depth to Water (feet, btoc)	Water Level Elevation (feet msl)	Depth to Water (feet, btoc)	Water Level Elevation (feet msl)	Depth to Water (feet, btoc)	Water Level Elevation (feet msl)	Depth to Water (feet, btoc)	Water Level Elevation (feet 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

Table 1 (cont.)
Groundwater Elevation and Monitoring Well Construction Data

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

Monitoring Well Identification	Total Well Depth (feet, bls)	Screened Interval (feet, bls)	TOC Elevation (feet, msl) ¹	October 4, 1999		March 7, 2000		September 27, 2000		March 7, 2001	
				Depth to Water (feet, btoc)	Water Level Elevation (feet msl)	Depth to Water (feet, btoc)	Water Level Elevation (feet msl)	Depth to Water (feet, btoc)	Water Level Elevation (feet msl)	Depth to Water (feet, btoc)	Water Level Elevation (feet msl)
CEF-CS1A	31	15.5 to 30.5	81.30	25.05	56.25	25.98	55.32	28.49	52.81	30.29	51.01
CEF-CS2	29.5	14.0 to 29.0	83.54	27.33	56.21	28.28	55.26	30.77	52.77	31.91	51.63
CEF-CS3	32	16.5 to 31.5	80.98	24.84	56.14	25.82	55.16	28.26	52.72	30.07	50.91
CEF-CS4	29.5	14.0 to 29.0	79.88	23.79	56.09	24.80	55.08	27.19	52.69	29.02	50.86
CEF-CS5	33	17.5 to 32.5	80.66	24.33	56.33	25.35	55.31	27.77	52.89	29.6	51.06
CEF-CS6	53.5	48.0 to 53.0	81.59	25.37	56.22	26.33	55.26	28.78	52.81	30.59	51.00
CEF-CS7	29.9	19.0 to 29.0	80.89	24.84	56.05	25.81	55.08	28.27	52.62	DRY	<50.99

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

Notes: bls = below land surface.
TOC = top of casing.
msl = mean sea level.
btoc = below top of casing.
< = 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 ¹	
	CEF-CS1A (source)	CEF-CS3 (perimeter)	CEF-CS7 (perimeter)	Action Levels (source/perimeter)	Milestone Objectives (end of year 2)
<u>Volatile Organic Coumpounds (USEPA Method 602) (µg/L)</u>					
Benzene	39	ND	NS	100/1	10
Ethylbenzene	50	ND	NS	300/30	50
Toluene	8.9	ND	NS	400/40	100
Total Xylenes	53	ND	NS	NA	NA
<u>Polynuclear Aromatic Hydrocarbons (USEPA Method 625)(µg/L)</u>					
Naphthalene	61	ND	NS	200/20	90

¹Based on the MOP Approval Order (Attachment B)

Notes: µg/L = micrograms per liter.

ND = none detected.

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

Compounds Detected	Monitoring Well Identification																				Cleanup Criteria ¹				
	CEF-CS1A (source) ⁵							CEF-CS2	CEF-CS3 (perimeter) ⁵							CEF-CS7 (perimeter) ⁵						Action Levels (source/perimeter)	Milestone Objectives (end of year 1)	Milestone Objectives (end of year 2)	
	Aug 98	Nov 98	Feb 99	Oct 99	Mar 00	Sep 00	Mar 01	Oct 99	Aug 98	Nov 98	Feb 99	Oct 99	Mar 00	Aug 00	Mar 01	Aug 98	Nov 98	Feb 99	Oct 99	Mar 00	Sep 00				Mar 01
<u>Volatiles Organic Compounds (USEPA Method 8260B⁴) (µg/L)</u>																									
Benzene	16	14	13	16.9	16.6	42	39	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	100/1	12	10
Ethylbenzene	44	31	34	43.2	31.2	31	50	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	300/30	70	50
Toluene	7.1	3.5	1.8	3.4	2.1	6	8.9	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	400/40	110	100
Total Xylenes	115	63	33	80.4	38.4	39	53	ND	ND	ND	ND	NS	ND	ND	ND	1.2	ND	ND	ND	ND	ND	NS	NA	NA	NA
<u>Polynuclear Aromatic Hydrocarbons²(µg/L)</u>																									
Naphthalene	52	75	39	16	29.5 ³	34	61	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	200/20	110	90
1-Methylnaphthalene	45	87	31	27	37.2 ³	20	32	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NA	NA	NA
2-Methylnaphthalene	75	59	42	17	33.1 ³	18	38	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NA	NA	NA

¹Based on the MOP Approval Order.

²May 1998 to February 1999 - USEPA Method 625; October 1999 to March 2000, USEPA Method 8310; September 2000, USEPA Method 8270C.

³Duplicate sample collected at this well. In the duplicate sample, the VOC duplicate samples were consistent; however, the duplicate results for the PAHs were as follows: naphthalene was 16.8 µg/L, 1-methylnaphthalene was 20.3 µg/L, and 2-methylnaphthalene was 19.6 µg/L.

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

⁵Data from May 1998 sampling has been deleted for format reasons. It can be found in all previous monitoring reports.

Notes: µg/L = micrograms per liter.

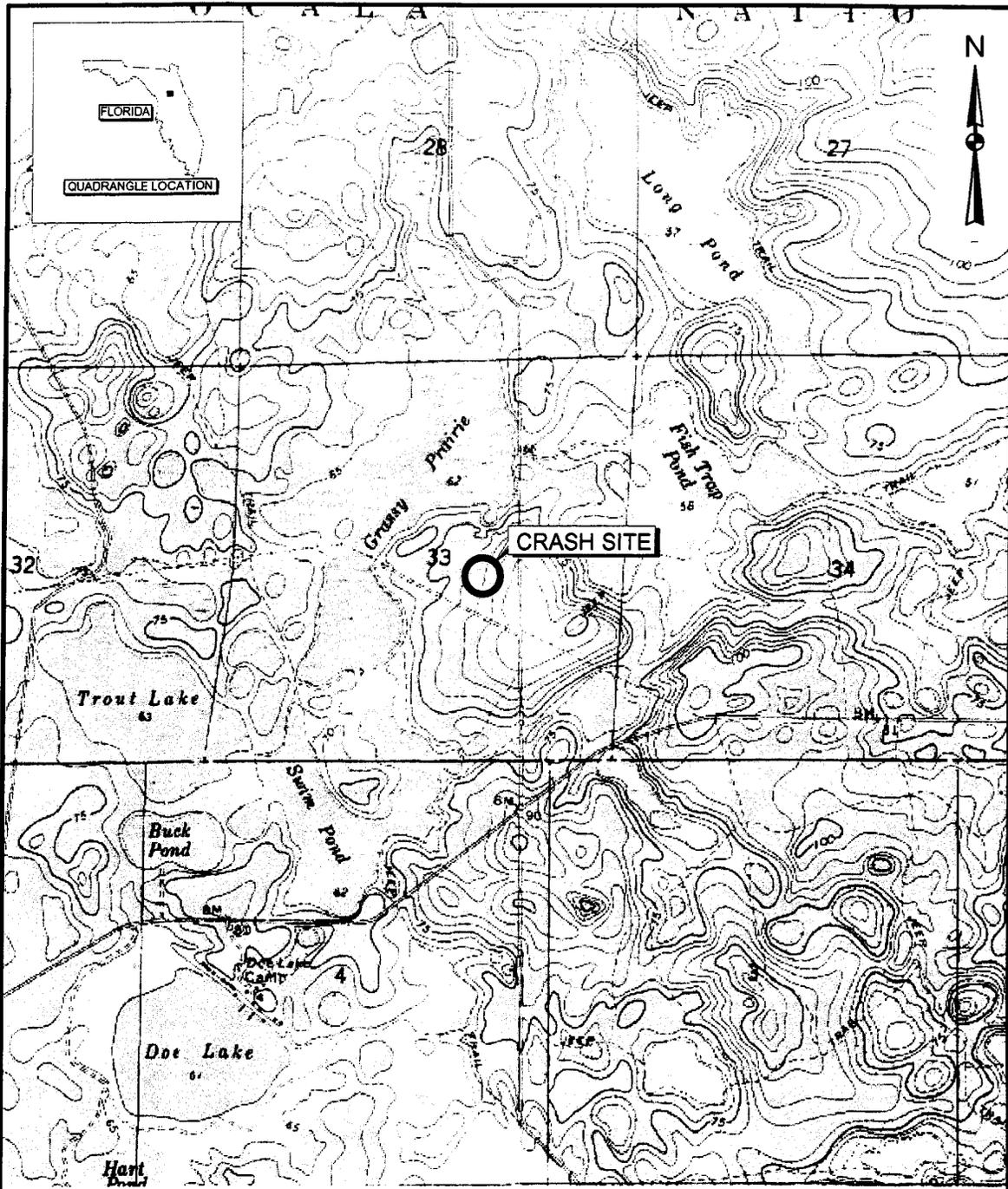
ND = none detected.

NA = no value presented in the approval order.

NS = not sampled.

NR = not reported.

FIGURES



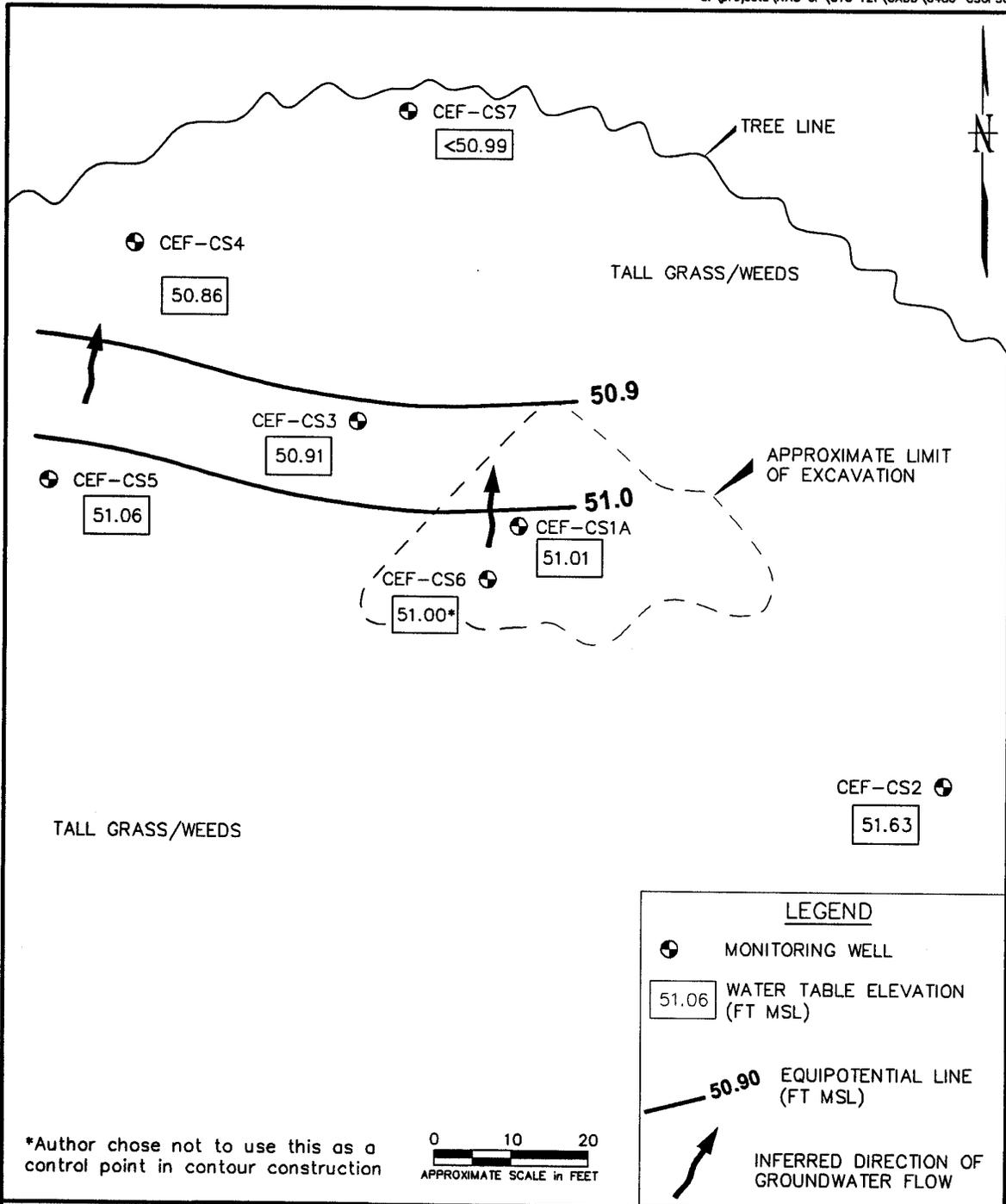
2000 0 2000 Feet SOURCE: USGS QUADRANGLE TOPOGRAPHIC MAP, LAKE MARY, FL, 1972, PHOTOREVISED 1980

DRAWN BY MJJ	DATE 09Nov99
CHECKED BY	DATE
COST/SCHEDULE-AREA	
SCALE AS NOTED	

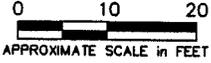


SITE LOCATION MAP
 Ocala CRASH SITE
 Ocala NATIONAL FOREST
 NAVAL AIR STATION CECIL FIELD
 JACKSONVILLE, FLORIDA

CONTRACT NUMBER 0389	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 1	REV 0



*Author chose not to use this as a control point in contour construction



LEGEND

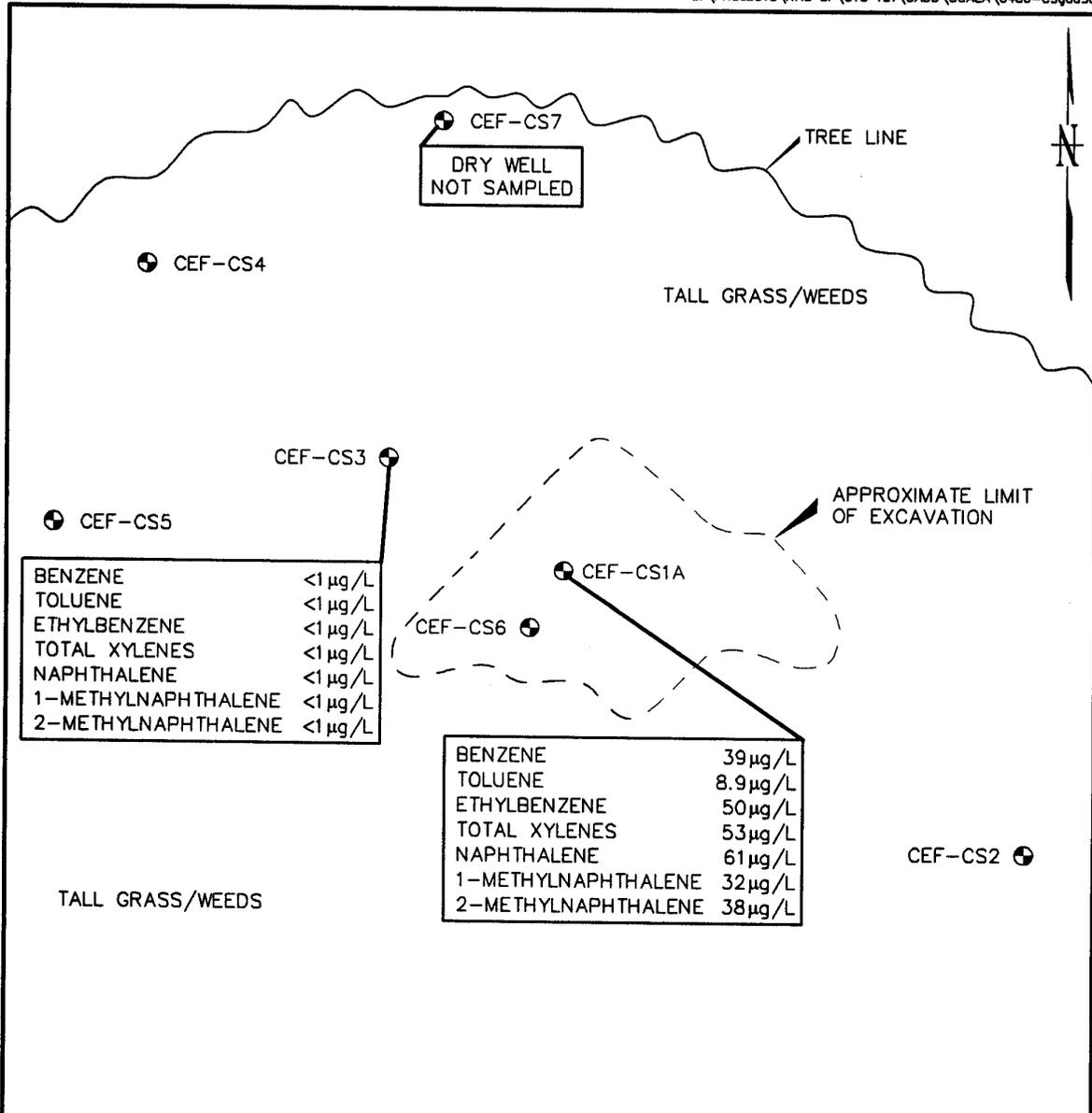
- MONITORING WELL
- WATER TABLE ELEVATION (FT MSL)
- EQUIPOTENTIAL LINE (FT MSL)
- INFERRED DIRECTION OF GROUNDWATER FLOW

DRAWN BY LLK	DATE 5/02/01
CHECKED BY	DATE
COST/SCHED-AREA	
SCALE AS NOTED	



POTENTIOMETRIC SURFACE MAP
MARCH 7, 2001
OCALA CRASH SITE
OCALA NATIONAL FOREST
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

CONTRACT NO.	0486
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO.	FIGURE 2
REV.	0

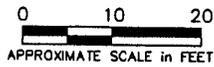


BENZENE	<1 µg/L
TOLUENE	<1 µg/L
ETHYLBENZENE	<1 µg/L
TOTAL XYLENES	<1 µg/L
NAPHTHALENE	<1 µg/L
1-METHYLNAPHTHALENE	<1 µg/L
2-METHYLNAPHTHALENE	<1 µg/L

BENZENE	39 µg/L
TOLUENE	8.9 µg/L
ETHYLBENZENE	50 µg/L
TOTAL XYLENES	53 µg/L
NAPHTHALENE	61 µg/L
1-METHYLNAPHTHALENE	32 µg/L
2-METHYLNAPHTHALENE	38 µg/L

LEGEND

CEF-CS2 ● MONITORING WELL LOCATION AND DESIGNATION
 µg/L = Micrograms per Liter



DRAWN BY	DATE
LLK	6/7/01
CHECKED BY	DATE
COST/SCHED-AREA	
SCALE	
AS NOTED	



GROUNDWATER ANALYTICAL RESULTS
 MARCH 7, 2001
 OCALA CRASH SITE
 OCALA NATIONAL FOREST
 NAVAL AIR STATION CECIL FIELD
 JACKSONVILLE, FLORIDA

CONTRACT NO.	0486
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO.	FIGURE 3
REV.	0

ATTACHMENT A
GROUNDWATER ANALYTICAL REPORT

ACCURA ANALYTICAL LABORATORY, INC.
6017 Financial Drive, Norcross, Georgia, 30071, Phone (770) 449-8800

CASE NARRATIVE for Project Number: 27215
Client Project: Cecil Field Ocala Crash Site / CTO 121 / 0486
CTO Manager: Paul Calligan

The following items were noted concerning this project:

1. The following samples were received by Accura Analytical Laboratory on 03/08/01 at 0915:

<u>Client I.D.</u>	<u>Laboratory I.D.</u>
CEF-CS-GW-01A-4	AC09312
CEF-CS-GW-03-4	AC09313
CEF-CS-GW-04-4	AC09314 (on hold per client request)
CEF-CS-GW-DUP1-4	AC09315

2. The sample cooler temperature was noted to be 2^oC upon receipt.
3. The "J" values noted for the VOC and PAH results indicate estimated concentrations that were above the method detection limits, but below the reporting limits.
4. The pH of the samples was 1.0 for the VOC analysis.
5. The following samples required dilution due to high analyte concentration, resulting in elevated detection limits:

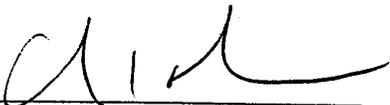
VOC - SW-846-8260B
CEF-CS-GW-01A-4
CEF-CS-GW-DUP1-4

6. Project Specific QC for the PAH analysis consists of LCS/LCSD due to limited sample volume. Note that LCS/LCSD recoveries are reported as MS/MSD recoveries on the QC spreadsheet.
7. The following spike recoveries were outside the project specified limits due to the fact that in the presence of Hydrochloric Acid, (sample preservative), 2-Chloroethylvinylether breaks down:

VOC - SW-846-8260B
Matrix Spike / Matrix Spike Duplicate - 2-Chloroethylvinylether

8. The relative percent difference between the matrix spike and matrix spike duplicate was outside the project specified limit for the following analyte:

VOC – SW-846-8260B
2-Chloroethylvinylether



Quality Assurance

ACCURA ANALYTICAL LABORATORY, INC.

6017 Financial Drive, Norcross, Georgia 30017. Phone (770)449-8800. FAX (770)449-5477

FL Certification # E87429 NC Certification # 483 SC Certification # 98015 USACE-MRD Approved

LABORATORY REPORT

Accura Sample ID #: AC09312

Accura Project #: 27215

Client: Tetra Tech Nus -Jacksonville

Date Sampled: 3/7/01

Client Contact: PAUL CALLIGAN

Date Received: 3/8/01

Client Project Number: CTO 121 / 0486

Date Reported: 3/21/01

Client Project Name: CECIL FIELD OCALA CRASH SITE

Sample Matrix: WATER

Client Sample ID: CEF-CS-GW-01A-4

ANALYSIS: PAH's - Low Level

Method Ref: 8270C

Date Ext/Dig/Prep: 3/9/01

Date Analyzed: 3/17/01

Result Units: ug/L

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reporting Limit</u>
1-Methylnaphthalene	32		1.0
2-Methylnaphthalene	38		1.0
Acenaphthene	0.35	J	1.0
Acenaphthylene	<RL		1.0
Anthracene	<RL		1.0
Benzo(a)anthracene	<RL		1.0
Benzo(a)pyrene	<RL		1.0
Benzo(b)fluoranthene	<RL		1.0
Benzo(g,h,i)perylene	<RL		1.0
Benzo(k)fluoranthene	<RL		1.0
Chrysene	<RL		1.0
Dibenz(a,h)anthracene	<RL		1.0
Fluoranthene	<RL		1.0
Fluorene	<RL		1.0
Indeno(1,2,3-cd)pyrene	<RL		1.0
Naphthalene	61		1.0
Phenanthrene	<RL		1.0
Pyrene	<RL		1.0

ANALYSIS: VOC's - Cecil Field(25 ml purge)

Method Ref: 8260B

Date Ext/Dig/Prep: 3/9/01

Date Analyzed: 3/9/01

Result Units: ug/L

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reporting Limit</u>
1,1,1-Trichloroethane	<RL		1.0
1,1,2,2-Tetrachloroethane	<RL		1.0
1,1,2-Trichloroethane	<RL		1.0
1,1-Dichloroethane	<RL		1.0
1,1-Dichloroethene	<RL		1.0
1,2-Dichloroethane	<RL		1.0
1,2-Dichloropropane	<RL		1.0
1,3-Dichloropropene	<RL		1.0
2-Chloroethylvinyl ether	<RL		10
Acrolein	<RL		10
Acrylonitrile	<RL		10
Benzene	39		5.0
Bromodichloromethane	<RL		1.0

ACCURA ANALYTICAL LABORATORY, INC.

<RL = Less than Reporting Limit

Pg 1 of 8

Client Sample ID: CEF-CS-GW-01A-4

AALS Sample ID #: AC09312 Accura Project #: 27215

Bromoform	<RL	1.0
Bromomethane	<RL	1.0
Carbon tetrachloride	<RL	1.0
Chlorobenzene	<RL	1.0
Chloroform	<RL	1.0
Chloromethane	<RL	1.0
Ethylbenzene	50	5.0
Methylene chloride	<RL	5.0
Methyl-tert-butyl ether (MTBE)	<RL	10
Tetrachloroethene	<RL	1.0
Toluene	8.9	1.0
trans-1,2-Dichloroethene	<RL	1.0
Trichloroethene	<RL	1.0
Vinyl chloride	<RL	1.0
Xylenes (Total)	53	2.0

ANALYSIS: X B/N Sample Surrogates (Waters)

Date Ext/Dig/Prep: 3/9/01 Date Analyzed: 3/17/01

Method Ref: 8270C

Result Units: %

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reporting Limit</u>
2-Fluorobiphenyl (Range 43-111)	87		
Nitrobenzene-d5 (Range 37-104)	88		
p-Terphenyl-d14 (Range 15-132)	51		

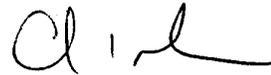
ANALYSIS: X VOC Sample Surrogates-Waters

Date Ext/Dig/Prep: 3/9/01 Date Analyzed: 3/9/01

Method Ref: 5030B/8260B

Result Units: %

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reporting Limit</u>
1,2-Dichloroethane-d4 (78-128)	82		
4-Bromofluorobenzene (86-112)	92		
Toluene-d8 (84-108)	96		



Accura Analytical Laboratory, Inc.

ACCURA ANALYTICAL LABORATORY, INC.

6017 Financial Drive, Norcross, Georgia 30017, Phone (770)449-8800, FAX (770)449-5477

FL Certification # E87429 NC Certification # 483 SC Certification # 98015 USACE-MRD Approved

LABORATORY REPORT

Accura Sample ID #: AC09313

Accura Project #: 27215

Client: Tetra Tech Nus -Jacksonville

Date Sampled: 3/7/01

Client Contact: PAUL CALLIGAN

Date Received: 3/8/01

Client Project Number: NO486

Date Reported: 3/20/01

Client Project Name: CECIL FIELD OCALA CRASH SITE

Sample Matrix: WATER

Client Sample ID: CEF-CS-GW-03-4

ANALYSIS: PAH's - Low Level

Method Ref: 8270C

Date Ext/Dig/Prep: 3/9/01

Date Analyzed: 3/17/01

Result Units: ug/L

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reporting Limit</u>
1-Methylnaphthalene	<RL		1.0
2-Methylnaphthalene	<RL		1.0
Acenaphthene	<RL		1.0
Acenaphthylene	<RL		1.0
Anthracene	<RL		1.0
Benzo(a)anthracene	<RL		1.0
Benzo(a)pyrene	<RL		1.0
Benzo(b)fluoranthene	<RL		1.0
Benzo(g,h,i)perylene	<RL		1.0
Benzo(k)fluoranthene	<RL		1.0
Chrysene	<RL		1.0
Dibenz(a,h)anthracene	<RL		1.0
Fluoranthene	<RL		1.0
Fluorene	<RL		1.0
Indeno(1,2,3-cd)pyrene	<RL		1.0
Naphthalene	<RL		1.0
Phenanthrene	<RL		1.0
Pyrene	<RL		1.0

ANALYSIS: VOC's - Cecil Field(25 ml purge)

Method Ref: 8260B

Date Ext/Dig/Prep: 3/9/01

Date Analyzed: 3/9/01

Result Units: ug/L

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reporting Limit</u>
1,1,1-Trichloroethane	<RL		1.0
1,1,2,2-Tetrachloroethane	<RL		1.0
1,1,2-Trichloroethane	<RL		1.0
1,1-Dichloroethane	<RL		1.0
1,1-Dichloroethene	<RL		1.0
1,2-Dichloroethane	<RL		1.0
1,2-Dichloropropane	<RL		1.0
1,3-Dichloropropene	<RL		1.0
2-Chloroethylvinyl ether	<RL		10
Acrolein	<RL		10
Acrylonitrile	<RL		10
Benzene	<RL		1.0
Bromodichloromethane	<RL		1.0

Bromoform	<RL		1.0
Bromomethane	<RL		1.0
Carbon tetrachloride	<RL		1.0
Chlorobenzene	<RL		1.0
Chloroform	<RL		1.0
Chloromethane	<RL		1.0
Ethylbenzene	<RL		1.0
Methylene chloride	3.8	J	5.0
Methyl-tert-butyl ether (MTBE)	<RL		10
Tetrachloroethene	<RL		1.0
Toluene	<RL		1.0
trans-1,2-Dichloroethene	<RL		1.0
Trichloroethene	<RL		1.0
Vinyl chloride	<RL		1.0
Xylenes (Total)	<RL		2.0

ANALYSIS: X B/N Sample Surrogates (Waters)

Date Ext/Dig/Prep: 3/9/01 Date Analyzed: 3/17/01

Method Ref: 8270C

Result Units: %

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reporting Limit</u>
2-Fluorobiphenyl (Range 43-111)	89		
Nitrobenzene-d5 (Range 37-104)	88		
p-Terphenyl-d14 (Range 15-132)	80		

ANALYSIS: X VOC Sample Surrogates-Waters

Date Ext/Dig/Prep: 3/9/01 Date Analyzed: 3/9/01

Method Ref: 5030B/8260B

Result Units: %

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reporting Limit</u>
1,2-Dichloroethane-d4 (78-128)	95		
4-Bromofluorobenzene (86-112)	94		
Toluene-d8 (84-108)	101		



Accura Analytical Laboratory, Inc.

ACCURA ANALYTICAL LABORATORY, INC.

6017 Financial Drive, Norcross, Georgia 30017, Phone (770)449-8800, FAX (770)449-5477

FL Certification # E87429 NC Certification # 483 SC Certification # 98015 USACE-MRD Approved

LABORATORY REPORT

Accura Sample ID #: AC09315

Accura Project #: 27215

Client: Tetra Tech Nus -Jacksonville

Date Sampled: 3/7/01

Client Contact: PAUL CALLIGAN

Date Received: 3/8/01

Client Project Number: NO486

Date Reported: 3/29/01

Client Project Name: CECIL FIELD OCALA CRASH SITE

Sample Matrix: WATER

Client Sample ID: CEF-CS-GW-DUP1-4

ANALYSIS: PAH's - Low Level

Method Ref: 8270C

Date Ext/Dig/Prep: 3/9/01

Date Analyzed: 3/18/01

Result Units: ug/L

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reporting Limit</u>
1-Methylnaphthalene	32		1.0
2-Methylnaphthalene	38		1.0
Acenaphthene	0.49	J	1.0
Acenaphthylene	<RL		1.0
Anthracene	<RL		1.0
Benzo(a)anthracene	<RL		1.0
Benzo(a)pyrene	<RL		1.0
Benzo(b)fluoranthene	<RL		1.0
Benzo(g,h,i)perylene	<RL		1.0
Benzo(k)fluoranthene	<RL		1.0
Chrysene	<RL		1.0
Dibenz(a,h)anthracene	<RL		1.0
Fluoranthene	<RL		1.0
Fluorene	<RL		1.0
Indeno(1,2,3-cd)pyrene	<RL		1.0
Naphthalene	57		1.0
Phenanthrene	<RL		1.0
Pyrene	<RL		1.0

ANALYSIS: VOC's - Cecil Field(25 ml purge)

Method Ref: 8260B

Date Ext/Dig/Prep: 3/9/01

Date Analyzed: 3/9/01

Result Units: ug/L

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reporting Limit</u>
1,1,1-Trichloroethane	<RL		1.0
1,1,2,2-Tetrachloroethane	<RL		1.0
1,1,2-Trichloroethane	<RL		1.0
1,1-Dichloroethane	<RL		1.0
1,1-Dichloroethene	<RL		1.0
1,2-Dichloroethane	<RL		1.0
1,2-Dichloropropane	<RL		1.0
1,3-Dichloropropene	<RL		1.0
2-Chloroethylvinyl ether	<RL		10
Acrolein	<RL		10
Acrylonitrile	<RL		10
Benzene	39		5.0
Bromodichloromethane	<RL		1.0

Bromoform	<RL	1.0
Bromomethane	<RL	1.0
Carbon tetrachloride	<RL	1.0
Chlorobenzene	<RL	1.0
Chloroform	<RL	1.0
Chloromethane	<RL	1.0
Ethylbenzene	53	5.0
Methylene chloride	<RL	5.0
Methyl-tert-butyl ether (MTBE)	<RL	10
Tetrachloroethene	<RL	1.0
Toluene	8.7	1.0
trans-1,2-Dichloroethene	<RL	1.0
Trichloroethene	<RL	1.0
Vinyl chloride	<RL	1.0
Xylenes (Total)	54	2.0

ANALYSIS: X B/N Sample Surrogates (Waters)

Date Ext/Dig/Prep: 3/9/01 Date Analyzed: 3/18/01

Method Ref: 8270C

Result Units: %

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reporting Limit</u>
2-Fluorobiphenyl (Range 43-111)	87		
Nitrobenzene-d5 (Range 37-104)	101		
p-Terphenyl-d14 (Range 15-132)	38		

ANALYSIS: X VOC Sample Surrogates-Waters

Date Ext/Dig/Prep: 3/9/01 Date Analyzed: 3/9/01

Method Ref: 5030B/8260B

Result Units: %

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reporting Limit</u>
1,2-Dichloroethane-d4 (78-128)	88		
4-Bromofluorobenzene (86-112)	91		
Toluene-d8 (84-108)	93		

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FL Certification # E87429 NC Certification # 483 SC Certification # 98015 USACE-MRD Approved

LABORATORY REPORT

Accura Sample ID #: AC09316

Accura Project #: 27215

Client: Tetra Tech Nus -Jacksonville

Date Sampled: 3/8/01

Client Contact: PAUL CALLIGAN

Date Received: 3/8/01

Client Project Number: NO486

Date Reported: 3/21/01

Client Project Name: CECIL FIELD OCALA CRASH SITE

Sample Matrix: WATER

Client Sample ID: METHOD BLANK

ANALYSIS: PAH's - Low Level

Date Ext/Dig/Prep: 3/9/01

Date Analyzed: 3/17/01

Method Ref: 8270C

Result Units: ug/L

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reporting Limit</u>
1-Methylnaphthalene	<RL		1.0
2-Methylnaphthalene	<RL		1.0
Acenaphthene	<RL		1.0
Acenaphthylene	<RL		1.0
Anthracene	<RL		1.0
Benzo(a)anthracene	<RL		1.0
Benzo(a)pyrene	<RL		1.0
Benzo(b)fluoranthene	<RL		1.0
Benzo(g,h,i)perylene	<RL		1.0
Benzo(k)fluoranthene	<RL		1.0
Chrysene	<RL		1.0
Dibenz(a,h)anthracene	<RL		1.0
Fluoranthene	<RL		1.0
Fluorene	<RL		1.0
Indeno(1,2,3-cd)pyrene	<RL		1.0
Naphthalene	<RL		1.0
Phenanthrene	<RL		1.0
Pyrene	<RL		1.0

ANALYSIS: VOC's - Cecil Field(25 ml purge)

Date Ext/Dig/Prep: 3/9/01

Date Analyzed: 3/9/01

Method Ref: 8260B

Result Units: ug/L

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reporting Limit</u>
1,1,1-Trichloroethane	<RL		1.0
1,1,2,2-Tetrachloroethane	<RL		1.0
1,1,2-Trichloroethane	<RL		1.0
1,1-Dichloroethane	<RL		1.0
1,1-Dichloroethene	<RL		1.0
1,2-Dichloroethane	<RL		1.0
1,2-Dichloropropane	<RL		1.0
1,3-Dichloropropene	<RL		1.0
2-Chloroethylvinyl ether	<RL		10
Acrolein	<RL		10
Acrylonitrile	<RL		10
Benzene	<RL		1.0
Bromodichloromethane	<RL		1.0

ACCURA ANALYTICAL LABORATORY, INC.

<RL = Less than Reporting Limit

Pg 7 of 8

Client Sample ID: METHOD BLANK

AALSAMPLE ID #: AC09316 Accura Project #: 27215

Bromoform	<RL	1.0
Bromomethane	<RL	1.0
Carbon tetrachloride	<RL	1.0
Chlorobenzene	<RL	1.0
Chloroform	<RL	1.0
Chloromethane	<RL	1.0
Ethylbenzene	<RL	1.0
Methylene chloride	<RL	5.0
Methyl-tert-butyl ether (MTBE)	<RL	10
Tetrachloroethene	<RL	1.0
Toluene	<RL	1.0
trans-1,2-Dichloroethene	<RL	1.0
Trichloroethene	<RL	1.0
Vinyl chloride	<RL	1.0
Xylenes (Total)	<RL	2.0

ANALYSIS: X Base Neutral OC Surrogates (W)

Date Ext/Dig/Prep: 3/9/01 Date Analyzed: 3/17/01

Method Ref: 8270C

Result Units: %

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reporting Limit</u>
2-Fluorobiphenyl (Range 57-102)	90		
Nitrobenzene-d5 (Range 50-103)	103		
p-Terphenyl-d14 (Range 64-113)	89		

ANALYSIS: X VOC OC Surrogates-Waters

Date Ext/Dig/Prep: 3/9/01 Date Analyzed: 3/9/01

Method Ref: 5030B/8260B

Result Units: %

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reporting Limit</u>
1,2-Dichloroethane-d4 (78-114)	83		
4-Bromofluorobenzene (85-111)	91		
Toluene-d8 (88-106)	97		


Accura Analytical Laboratory, Inc.

PROJECT QUALITY CONTROL RESULTS
AAL PROJECT #27215

Method No ¹	Analyte / Component	Project Control Rec.				Accuracy Limits		Project Control		Precision Limits		Project Control Recoveries		Accuracy Limits		Project Control		Precision Limits	
		MS	MSD	MS	MS	MS/MSD Recoveries		MS/MSD % Deviation		MS/MSD Deviation		LCS		LCS Recoveries		Field Dup % Deviation		Field Dup Deviation	
		Water	Soil ²	Water	Soil ²	Water	Soil ²	Water	Soil ²	Water	Soil ²	Water	Soil ²	Water	Soil ²	Water	Soil ²	Water	Soil ²
VOLATILES BY GC/MS																			
8260B	1,1,1-Trichloroethane	88	93			60-140	20-150	6%		<30	<50	97		65-135	65-135			<50	<75
8260B	1,1,2,2-Tetrachloroethane	92	96			60-140	20-150	4%		<30	<50	94		64-135	64-135			<50	<75
8260B	1,1,2-Trichloroethane	85	92			60-140	20-150	8%		<30	<50	95		65-135	65-135			<50	<75
8260B	1,1-Dichloroethane	87	93			60-140	20-150	7%		<30	<50	97		62-135	62-135			<50	<75
8260B	1,1-Dichloroethene	83	85			60-140	20-150	2%		<30	<50	97		65-135	65-135			<50	<75
8260B	1,2-Dichloroethane	81	91			60-140	20-150	12%		<30	<50	97		65-135	65-135			<50	<75
8260B	1,2-Dichloropropane	86	93			60-140	20-150	8%		<30	<50	99		58-137	58-137			<50	<75
8260B	1,3-Dichloropropene	86	91			60-140	20-150	6%		<30	<50	103		60-135	60-135			<50	<75
8260B	2-Chloroethylvinyl ether	0	0			60-140	20-150	#DIV/0!		<30	<50	68		65-135	65-135			<50	<75
8260B	Acrolein	84	92			60-140	20-150	9%		<30	<50	75		65-135	65-135			<50	<75
8260B	Acrylonitrile	83	89			60-140	20-150	7%		<30	<50	88		63-135	63-135			<50	<75
8260B	Benzene	87	92			60-140	20-150	6%		<30	<50	100		65-135	65-135			<50	<75
8260B	Bromodichloromethane	84	90			60-140	20-150	7%		<30	<50	101		65-135	65-135			<50	<75
8260B	Bromoform	80	85			60-140	20-150	6%		<30	<50	92		65-135	65-135			<50	<75
8260B	Bromomethane	76	72			60-140	20-150	5%		<30	<50	104		62-135	62-135			<50	<75
8260B	Carbon Tetrachloride	87	92			60-140	20-150	6%		<30	<50	97		52-135	52-135			<50	<75
8260B	Chlorobenzene	104	108			60-140	20-150	4%		<30	<50	97		65-135	65-135			<50	<75
8260B	Chloroform	85	90			60-140	20-150	6%		<30	<50	98		64-135	64-135			<50	<75
8260B	Chloromethane	64	65			60-140	20-150	2%		<30	<50	82		65-135	65-135			<50	<75
8260B	Ethylbenzene	95	98			60-140	20-150	3%		<30	<50	101		65-135	65-135			<50	<75
8260B	Methylene Chloride	124	125			60-140	20-150	1%		<30	<50	117		65-135	65-135			<50	<75
8260B	Methyl-tert-butyl ether	77	83			60-140	20-150	8%		<30	<50	93		65-135	65-135			<50	<75
8260B	Tetrachloroethylene	106	100			60-140	20-150	6%		<30	<50	100		61-135	61-135			<50	<75
8260B	Toluene	91	94			60-140	20-150	3%		<30	<50	99		64-135	64-135			<50	<75
8260B	Trans-1,2-Dichloroethene	85	89			60-140	20-150	5%		<30	<50	98		65-135	65-135			<50	<75
8260B	Trichloroethylene	89	96			60-140	20-150	8%		<30	<50	99		61-135	61-135			<50	<75
8260B	Vinyl Chloride	66	68			60-140	20-150	3%		<30	<50	84		36-144	36-144			<50	<75
8260B	total-Xylene	94	97			60-140	20-150	3%		<30	<50	102		65-135	65-135			<50	<75
8260B	Toluene-d8 (surr)	95	95			75-125	65-135	0%		NA	NA	96		NA	NA			NA	NA
8260B	4-Bromofluorobenzene (surr)	89	88			75-125	65-135	1%		NA	NA	92		NA	NA			NA	NA
8260B	1,2-Dichloroethane-d4 (surr)	85	86			62-139	52-149	1%		NA	NA	93		NA	NA			NA	NA

SEMI-VOLATILES BY GC/MS																			
8270C	1-Methylnaphthalene	54	53			41-125	31-135	2%	#VALUE!	<30	<50	61		41-125	31-135			<50	<75
8270C	2-Methylnaphthalene	73	70			41-125	31-135	4%	#VALUE!	<30	<50	80		41-125	31-135			<50	<75
8270C	Acenaphthylene	80	80			47-125	37-135	0%	#VALUE!	<30	<50	91		47-125	37-135			<50	<75
8270C	Acenaphthene	73	72			49-124	39-135	1%	#VALUE!	<30	<50	83		49-124	39-135			<50	<75
8270C	Anthracene	84	85			45-165	35-175	1%	#VALUE!	<30	<50	89		45-165	35-175			<50	<75
8270C	Benzo (a) anthracene	89	89			51-133	41-143	0%	#VALUE!	<30	<50	96		51-133	41-143			<50	<75
8270C	Benzo (a) pyrene	86	84			41-125	31-135	2%	#VALUE!	<30	<50	90		41-125	31-135			<50	<75
8270C	Benzo (b) fluoranthene	94	93			37-125	27-135	1%	#VALUE!	<30	<50	100		37-125	27-135			<50	<75
8270C	Benzo (g,h,i) perylene	98	90			34-149	25-159	9%	#VALUE!	<30	<50	94		34-149	25-159			<50	<75
8270C	Benzo (k) fluoranthene	85	85			37-123	37-123	0%	#VALUE!	<30	<50	93		37-123	37-123			<50	<75
8270C	Chrysene	89	86			55-133	45-143	3%	#VALUE!	<30	<50	93		55-133	45-143			<50	<75
8270C	Dibenzo (a,h) anthracene	95	89			50-125	40-135	7%	#VALUE!	<30	<50	93		50-125	40-135			<50	<75

Notes:
1) SW-846 Methods unless otherwise noted
2) Includes sediments, waste, soils

MS - Not Specified
MSD - See Appdx A4b

**PROJECT QUALITY CONTROL RESULTS
AAL PROJECT #27215**

8270C	Fluoranthene	90	94		47-125	37-135	4%	#VALUE!	<30	<50	97		47-125	37-135			<50	<75
8270C	Fluorene	82	82		48-139	38-149	0%	#VALUE!	<30	<50	93		48-139	38-149			<50	<75
8270C	Indeno (1,2,3-c,d) pyrene	93	87		27-160	25-170	7%	#VALUE!	<30	<50	91		27-160	25-170			<50	<75
8270C	Naphthalene	66	65		50-125	40-135	2%	#VALUE!	<30	<50	74		50-125	40-135			<50	<75
8270C	Phenanthrene	86	86		54-125	44-135	0%	#VALUE!	<30	<50	92		54-125	44-135			<50	<75
8270C	Pyrene	93	88		47-136	37-146	6%	#VALUE!	<30	<50	98		47-136	37-146			<50	<75
8270C	2-Fluorobiphenyl	78	77		43-125	34-135	1%	#VALUE!	<30	<50	88						<50	<75
8270C	Nitrobenzene-d5	83	84		32-125	25-135	1%	#VALUE!	<30	<50	103							
8270C	Terphenyl-d14	84	80		42-126	32-136	5%	#VALUE!	<30	<50	87							

Notes:
 1) SW-846 Methods unless otherwise noted
 2) Includes sediments, waste, solids

NS Not Specified
 NA Not Applicable

I Camden Robinson, as the designated Quality Assurance Officer, hereby attest that all electronic deliverables have been thoroughly reviewed and are in agreement with the associated hardcopy data. The enclosed electronic files have been reviewed for accuracy (including significant figures), completeness and format. The laboratory will be responsible for any labor time necessary to correct enclosed electronic deliverables that have been found to be in error. I can be reached at (770) 449-8800 if there are any questions or problems with the enclosed electronic deliverables.

Signature: Camden Robinson Title: Q.C. Officer Date: 3/29/01



PROJECT NO: N0486		SITE NAME: Ocala Crash Site		PROJECT MANAGER AND PHONE NUMBER PAUL CALLISAN 850 385 9866x21				LABORATORY NAME AND CONTACT: ACCURA BONNIE HOGUE			
SAMPLERS (SIGNATURE) <i>Olga Rodriguez</i> <i>Louis Hylt</i>		FIELD OPERATIONS LEADER AND PHONE NUMBER MERV DALE 904 281 1941 x14				ADDRESS 6017 FINANCIAL DRIVE					
		CARRIER/WAYBILL NUMBER FED EX 8244 2558 5121				CITY, STATE NOCCROSS, GA 30071					
STANDARD TAT <input checked="" type="checkbox"/> RUSH TAT <input type="checkbox"/>				CONTAINER TYPE PLASTIC (P) or GLASS (G)		PRESERVATIVE USED					
<input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 72 hr. <input type="checkbox"/> 7 day <input type="checkbox"/> 14 day											
DATE YEAR	TIME	SAMPLE ID	MATRIX	GRAB (G) COMP (C)	No. OF CONTAINERS	TYPE OF ANALYSIS <i>VOC's SW 846 80218 HCl</i> <i>PAH's 8310 SW 846 NONE</i>				AL	COMMENTS
3/7	1315	CEF-CS-GW-01A-4	GW	G	5	X	X			09312	COOL TO 4°C
3/7	1246*	CEF-CS-GW-03-4	GW	G	5	X	X	HOLD TIL FURTHER NOTICE		09313	
3/7	1353	CEF-CS-GW-04-4	GW	G	5	X	X	HOLD		09314	REPORT MISSING
3/7	0000	CEF-CS-GW-Duo1-4	GW	G	5	X	X			09315	CO2 COMPOUNDS ONLY FOR VOC'S
*CEF-CS-GW-04-4 hold until notice from ITNUS.											
1. RELINQUISHED BY <i>Olga Rodriguez</i>		DATE 3/2/01	TIME 1800	1. RECEIVED BY FED EX.		DATE	TIME				
2. RELINQUISHED BY		DATE	TIME	2. RECEIVED BY		DATE	TIME				
3. RELINQUISHED BY FED EX.		DATE 3-8-01	TIME 0915	3. RECEIVED BY <i>Armando Hylt</i>		DATE 3-8-01	TIME 0915				
COMMENTS FLOR - N0486 P377 (DW)											

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ATTACHMENT B
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"

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

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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.

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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

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- 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,

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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.

Maria L. Larson
Clerk
(or Deputy Clerk)

4/3/98
Date

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