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NAS CECIL FIELD, FL
5090.3a

SITE ASSESSMENT REPORT ADDENDUM LETTER REPORT FOR BUILDING 81 TANK 81
NAS CECIL FIELD FL
4/10/2001
TETRA TECH NUS INC



TETRA TECH NUS, INC.

7018 A.C. Skinner Parkway ■ Suite 250 ■ Jacksonville, FL 32256
(904) 281-0400 ■ FAX (904) 281-0070 ■ www.tetrattech.com

Document No. 01JAX0071

April 10, 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: Site Assessment Report Addendum
Building 81, Tank 81
Former Naval Air Station Cecil Field
Jacksonville, Florida

Dear Mr. Grabka:

Tetra Tech NUS, Inc. (TtNUS) is pleased to submit this Site Assessment Report Addendum (SARA) for the referenced Contract Task Order (CTO). This report was prepared by TtNUS for the United States Navy, Southern Division (SOUTHDIV) Naval Facilities Engineering Command under the Comprehensive Long-term Environmental Action Navy (CLEAN) Contract Number N62467-94-D-0888. This report summarizes the fieldwork and analytical results for the subject site at the former Naval Air Station Cecil Field (NASCF). The objective of this task was to verify that concentrations of contaminants of concern (COCs) in groundwater beneath the Building 81, Tank 81 site (Figure 1), have not increased since the Site Assessment Report was submitted by Harding Lawson Associates (HLA) in October 1998. The guidance document for this report is Chapter 62-770, Florida Administrative Code (FAC). Sampling was conducted in general accordance with the Base-wide Generic Work Plan for the former NASCF Volumes I and II (TtNUS, 1998).

BACKGROUND

A site assessment was conducted by HLA between November 1997 and June 1998. A Site Assessment Report (SAR) (dated September 1998) was submitted by HLA in October 1998. The SAR concluded that the soil at Building 81, Tank 81 site had been impacted by petroleum products and that no COCs were present in groundwater above the Florida Department of Environmental Protection (FDEP) Groundwater Cleanup Target Levels (GCTLs). The FDEP issued a response to the SAR on October 5, 1999, concurring with the recommendation to prepare a RAP for the site (Attachment A). The Remedial Action Contractor (RAC) conducted a source removal at the site during the period of September to October 1999. The source removal included the removal of Tank 81 and the source monitoring well CEF-81-5S. A Source Removal Report (SRR) was submitted to the FDEP in May 2000.

In an e-mail from FDEP to TtNUS dated June 9, 2000 (Attachment B), the FDEP indicated that subsequent to the completion of the source removal, the source well should be replaced, the monitoring wells should be resampled and a Monitoring Only Plan or No Further Action proposal should be submitted as appropriate based on the new laboratory data. The RAC replaced monitoring well CEF-81-5S in October 2000. The replacement well was designated CEF-81-5SR.

FIELD OPERATIONS

On February 5, 2001, TtNUS collected groundwater samples from wells CEF-81-5SR, CEF-81-6S, and CEF-81-7S (Figure 2). Groundwater level measurements were made at wells CEF-81-5D, CEF-81-5SR, CEF-81-6S, and CEF-81-7S. The depth to water measurements ranged from 5.36 to 6.11 feet below-land-surface. Groundwater elevation data is provided in Table 1. The water level measurements were subtracted from the top-of-casing elevations to determine groundwater elevations and calculate groundwater flow direction. The groundwater flow at the time of the sampling appears to be in a south-southeast direction. Figure 2 depicts the groundwater elevations and the inferred flow direction for this sampling event.

The groundwater samples collected during this sampling event were placed on ice and shipped overnight by Federal Express to Accura Laboratories in Norcross, Georgia, for analysis. The samples were analyzed for select volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method SW846 8260B and polynuclear aromatic hydrocarbons (PAHs) by USEPA Method SW846 8270C. A copy of the laboratory report is provided in (Attachment C).

RESULTS

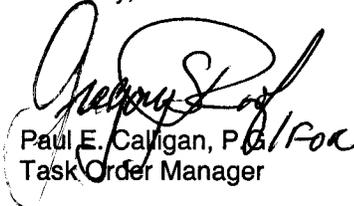
The results of the February 2001 sampling event were reviewed and compared to FDEP GCTLs. The analytical results for the groundwater sample from perimeter well CEF-81-7S indicated no detectable petroleum COCs. Analytical results for groundwater samples from source well CEF-81-5SR and perimeter well CEF-81-6S detected some COCs, but none exceeded respective GCTLs. The analytical results are summarized in Table 2.

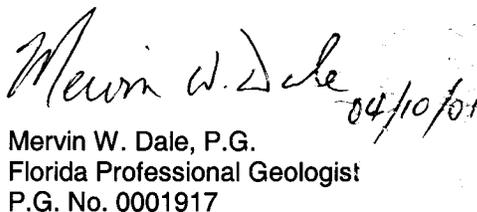
CONCLUSIONS and RECOMMENDATIONS

The data from the February 5, 2001 sampling event indicate that there has been no significant impact from petroleum hydrocarbons to the groundwater at the Building 81, Tank 81 site. In addition, the SRR submitted by the RAC indicates that the petroleum-impacted soil around the former underground storage tank has been removed from the site. Based on the groundwater analytical results reported herein, and the soil data reported in the SRR, TtNUS recommends that no further action status be granted for Building 81, Tank 81.

If you have any questions with regard to this submittal please contact me at (850) 385-9899.

Sincerely,


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


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

PC/er

Enclosures

cc: N. Ugolini, SOUTHDIV (1 copy)
D. Vaughn-Wright, USEPA (1 Copy)
D. Wroblewski (Cover Letter Only)
M. Perry (Unbound)

Table 1
Groundwater Level Measurements

Site Assessment Report Addendum
Building 81
Naval Air Station Cecil Field
Jacksonville, Florida
1 of 1

Well Number	Total Depth (feet bls)	Top of Casing Elevation (feet msl)	February 5, 2001	
			Depth to Water Below Top of Casing (feet)	Water Elevation (feet msl)
CEF-81-5SR	15.10	78.26	6.11	72.15
CEF-81-6S	11.11	77.63	5.36	72.27
CEF-81-7S	13.15	77.56	5.48	72.08

Notes: bls= below land surface.
msl = mean sea level.

Table 2
Summary of Groundwater Sample Analytical Results

Site Assessment Report Addendum
 Building 81
 Naval Air Station Cecil Field
 Jacksonville, Florida
 1 of 3

Source Area Monitoring Well ID	CEF-81-5SR	GCTL¹ / NADSC²
Sample ID	CEF-81-GW-5S-01	
Date Sampled	2/5/01	
Compounds Detected		
<u>Volatile Organic Compounds (USEPA Method 8260B) (µg/L)</u>		
1,1-Dichloroethene	<1.0	7/700
1,2-Dichloroethane	<1.0	3/300
Trichloroethene	<1.0	3/300
Ethylbenzene	1.9	30/300
<u>Polynuclear Aromatic Hydrocarbons (USEPA Method 8270C) (µg/L)</u>		
Naphthalene	0.58J	20/200
1-Methylnaphthalene	3.6	20/200
Fluorene	1.0	280/2800
Acenaphthene	0.65J	20/200
See notes at end of table.		

Table 2 (cont'd)
Summary of Groundwater Sample Analytical Results

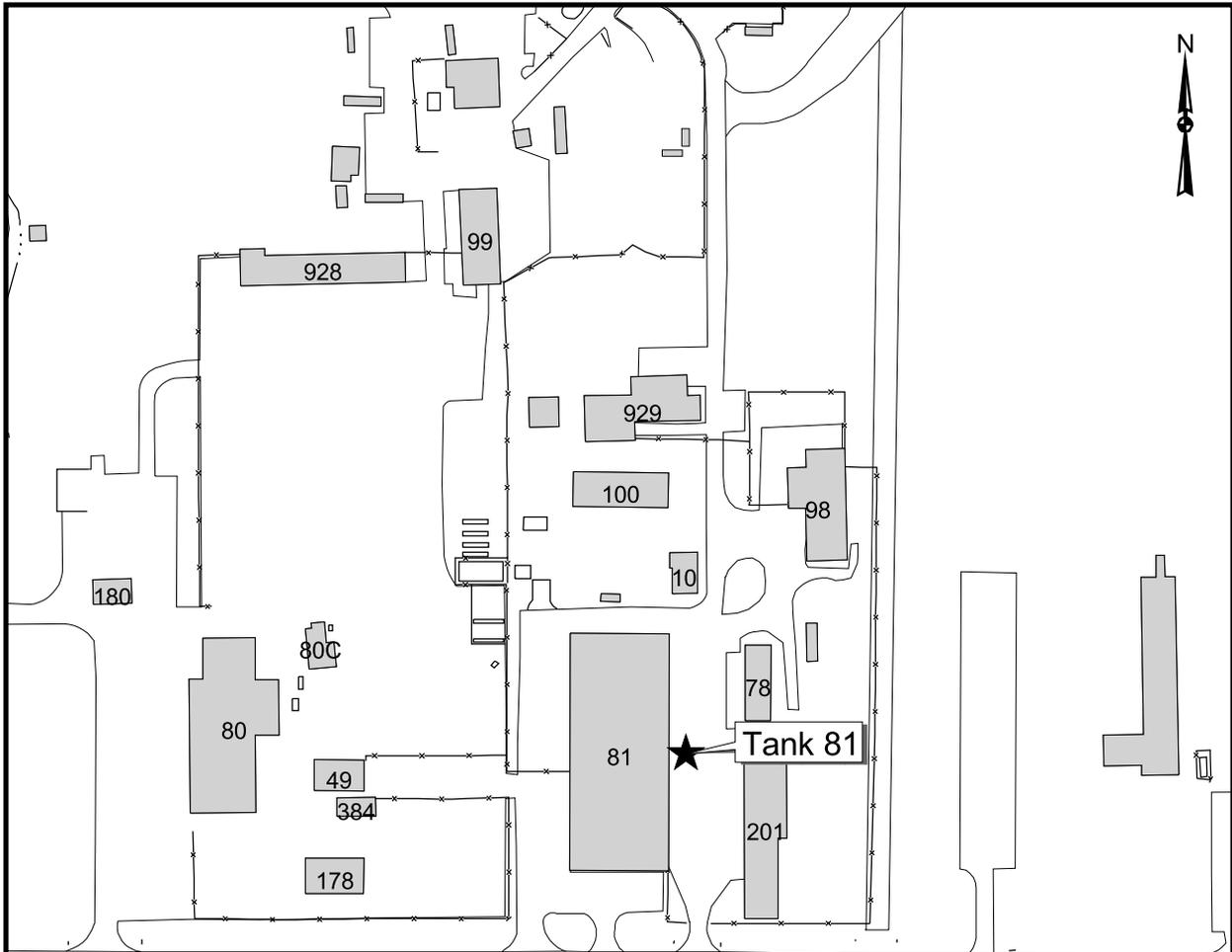
Site Assessment Report Addendum
 Building 81
 Naval Air Station Cecil Field
 Jacksonville, Florida
 2 of 3

Perimeter Monitoring Well I.D.	CEF-81-6S	GCTL¹ / NADSC²
Sample ID	CEF-81-GW-6S-01	
Date Sampled	2/5/01	
Compounds Detected		
<u>Volatile Organic Compounds (USEPA Method 8260B) (µg/L)</u>		
1,1-Dichloroethene	3.1	7/700
1,2-Dichloroethane	1.4	3/300
Trichloroethene	0.79J	3/300
Ethylbenzene	<1.0	30/300
<u>Polynuclear Aromatic Hydrocarbons (USEPA Method 8270C) (µg/L)</u>		
Naphthalene	<1.0	20/200
1-Methylnaphthalene	<1.0	20/200
Fluorene	<1.0	280/2800
Acenaphthene	<1.0	20/200
See notes at end of table.		

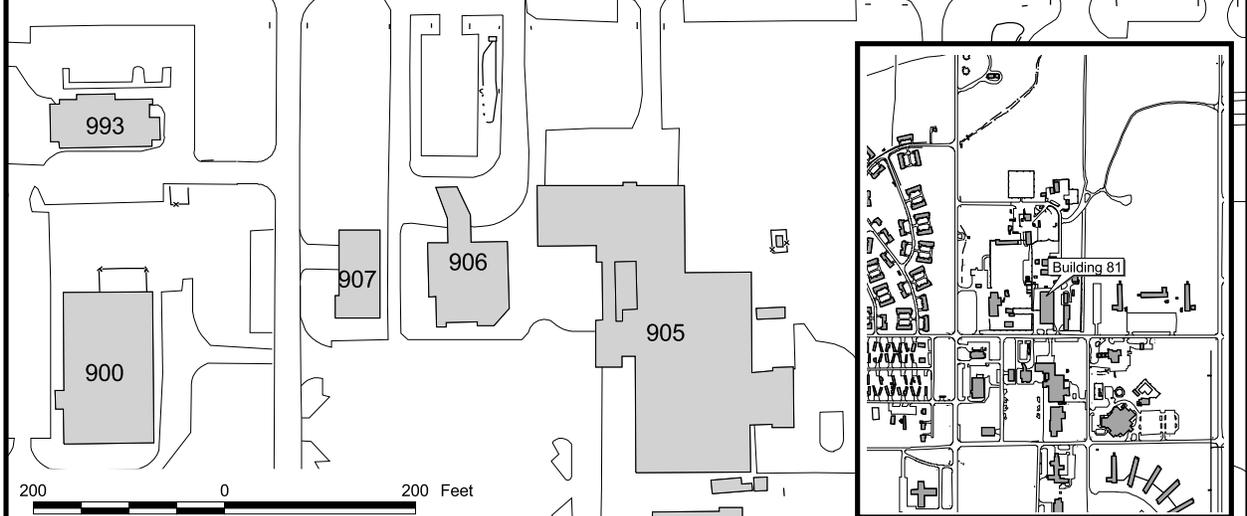
Table 2 (cont'd)
Summary of Groundwater Sample Analytical Results

Site Assessment Report Addendum
 Building 81
 Naval Air Station Cecil Field
 Jacksonville, Florida
 3 of 3

Perimeter Monitoring Well I.D.	CEF-81-7S	GCTL¹ / NADSC²
Sample ID	CEF-81-GW-7S-01	
Date Sampled	2/5/01	
Compounds Detected		
<u>Volatile Organic Compounds (USEPA Method 8260B) (µg/L)</u>		
1,1-Dichloroethene	<1.0	7/700
1,2-Dichloroethane	<1.0	3/300
Trichloroethene	<1.0	3/300
Ethylbenzene	<1.0	30/300
<u>Polynuclear Aromatic Hydrocarbons (USEPA Method 8270C)(µg/L)</u>		
Naphthalene	<1.0	20/200
1-Methylnaphthalene	<1.0	20/200
Fluorene	<1.0	280/2800
Acenaphthene	<1.0	20/200
Notes:		
¹ Groundwater Contamination Target Levels, Chapter 62-770, Florida Administrative Code (September 23, 1997).		
² Natural Attenuation Default Source Concentration, FDEP Chapter 62-777 Table V		
J = estimated.		
µg/L = micrograms per liter.		



Cecil Pines Street (Formerly 9th Street)



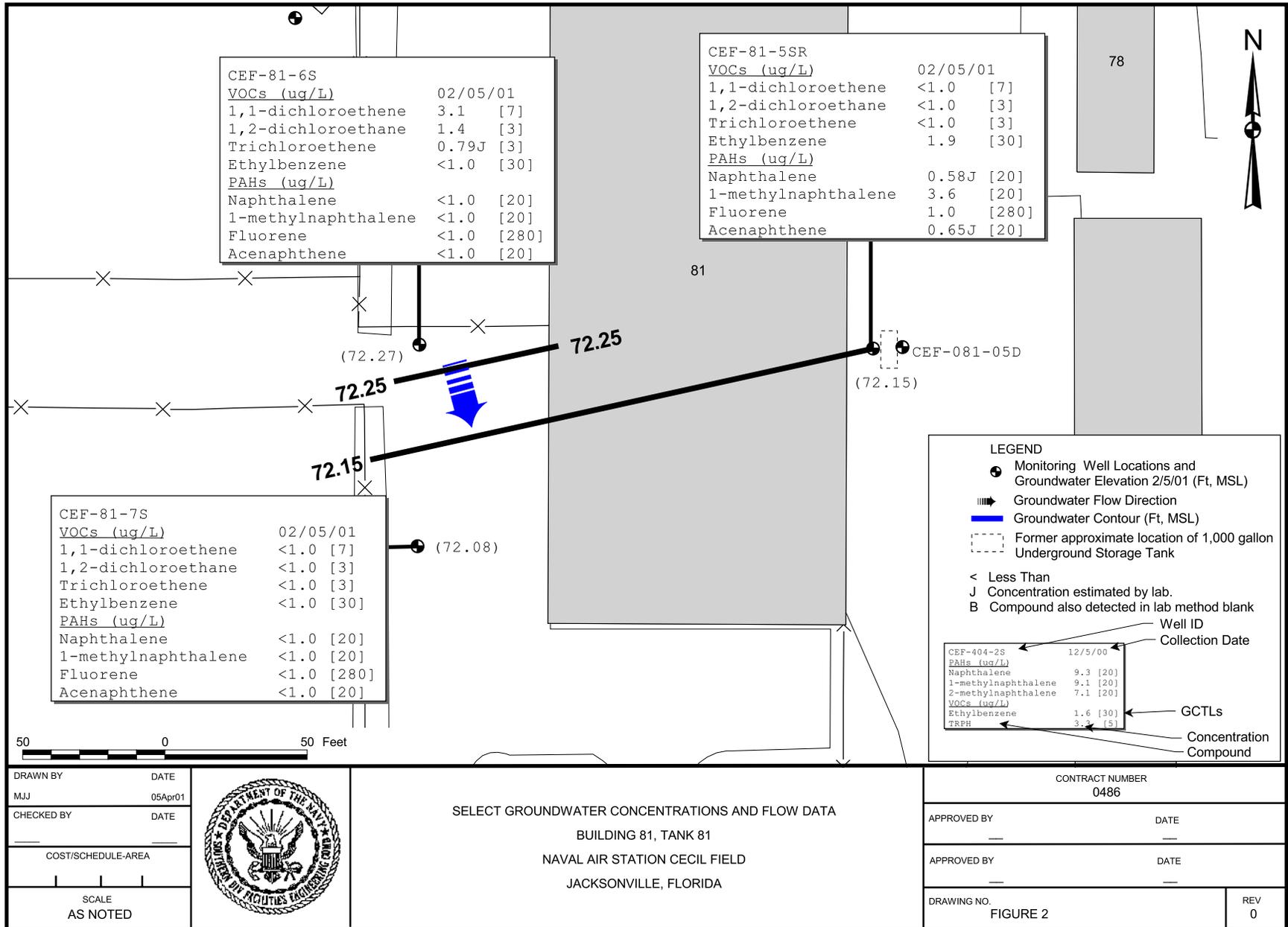
200 0 200 Feet

DRAWN BY MJJ	DATE 04Apr01
CHECKED BY	DATE
COST/SCHEDULE-AREA	
SCALE AS NOTED	



SITE LAYOUT MAP
BUILDING 81, TANK 81
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

CONTRACT NUMBER 0486	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 1	REV 0



ATTACHMENT A

**FDEP SITE ASSESSMENT REPORT APPROVAL LETTER
OCTOBER 5, 1999**



Department of Environmental Protection

Jeb Bush
Governor

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

David B. Struhs
Secretary

October 5, 1999

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

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

RE: Site Assessment Report, Facility 81, Tank 81,
Naval Air Station Cecil Field Florida.

Dear Mr. Kizer:

I have reviewed the Site Assessment Report (SAR) dated September 1998 (received October 2, 1998) submitted for this site. I found all the documents submitted to date to be adequate to meet the contamination assessment requirements of Rules 62-770.600 and 62-770.630, Florida Administrative Code (F.A.C.).

A Remedial Action Plan should now be submitted according to the time-frame established by the BRAC Cleanup Team.

If you should have any questions concerning this review, please contact me at (850) 921-9991.

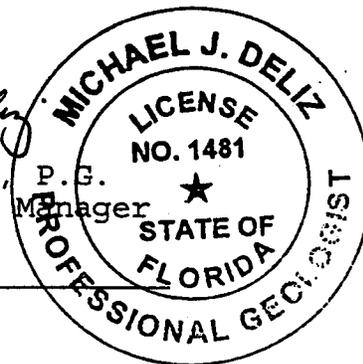
Sincerely,

Michael J. Deliz

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

5-OCT-99

Date



cc: Brian Cheary, FDEP Northeast District
Debbie Vaughn-Wright, USEPA, Atlanta
John Flowe, City of Jacksonville
Scott Glass, SOUTHNAVFACENGCOM
Eric Blomberg, HLA
Joe Logan, TtNUS, Pittsburgh

TJB B JJC JL ESN ESN

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

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ATTACHMENT B

**E-MAIL FROM FDEP TO TTNUS
JUNE 9, 2000**

From: Michael Deliz TAL 850/921-9991 [SMTP:Michael.Deliz@dep.state.fl.us]
Sent: Friday, June 09, 2000 9:42 AM
To: Calligan, Paul; Michael Deliz (E-mail)
Subject: Re: FW: ... no subject ...

Paul,

I really do not know why this question keeps popping up, but....

Here is the poop, again, 80 approved MONA (attached). 81 approved SAR (attached). However the real intent of the approval of the SAR was to move the site away from HLA. A well was supposed to be reinstalled after the proposed soil excavation in the source area. I have no idea if this was ever done. My expectations were:

that we would never do a RAP (even though the approval letter says do one);

that if source well was destroyed, as it should have been if all of the contaminated soil was removed, it would be reinstalled and the MWs at the site be resampled;

and based on these 2000 data a MONA or NFA would be written!!!!



C:\\Deliz_m\\NASCf\\62-770\\C:\\Deliz_m\\NASCf\\62-770\\C:\\Deliz_m\\NASCf\\62-770\\

MJD

\\80...

\\80...

\\81...

ATTACHMENT C
GROUNDWATER ANALYTICAL REPORT

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 #: AC07597

Accura Project #: 26907

Client: Tetra Tech Nus -Jacksonville

Date Sampled: 2/5/01

Client Contact: PAUL CALLIGAN

Date Received: 2/6/01

Client Project Number: N0486/CTO 121

Date Reported: 2/25/01

Client Project Name: NAS CECIL FIELD-BLDG 81

Sample Matrix: WATER

Client Sample ID: CEF-81-GW-5S-01

ANALYSIS: PAH's - Low Level

Method Ref: 8270C

Date Ext/Dig/Prep: 2/9/01

Date Analyzed: 2/14/01

Result Units: ug/L

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reported Detection Limits</u>
1-Methylnaphthalene	3.6		1.0
2-Methylnaphthalene	<RDL		1.0
Acenaphthene	0.65	J	1.0
Acenaphthylene	<RDL		1.0
Anthracene	<RDL		1.0
Benzo(a)anthracene	<RDL		1.0
Benzo(a)pyrene	<RDL		1.0
Benzo(b)fluoranthene	<RDL		1.0
Benzo(g,h,i)perylene	<RDL		1.0
Benzo(k)fluoranthene	<RDL		1.0
Chrysene	<RDL		1.0
Dibenz(a,h)anthracene	<RDL		1.0
Fluoranthene	<RDL		1.0
Fluorene	1.0		1.0
Indeno(1,2,3-cd)pyrene	<RDL		1.0
Naphthalene	0.58	J	1.0
Phenanthrene	<RDL		1.0
Pyrene	<RDL		1.0

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

Method Ref: 8260B

Date Ext/Dig/Prep: 2/7/01

Date Analyzed: 2/7/01

Result Units: ug/L

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

ACCURA ANALYTICAL LABORATORY, INC.

<RL = Less than Reporting Limit

Pg 1 of 10

Client Sample ID: CEF-81-GW-5S-01

AALSample ID #: AC07597 Accura Project #: 26907

Bromoform	<RDL	1.0
Bromomethane	<RDL	1.0
Carbon tetrachloride	<RDL	1.0
Chlorobenzene	<RDL	1.0
Chloroform	<RDL	1.0
Chloromethane	<RDL	1.0
Ethylbenzene	1.9	1.0
Methyl-tert-butyl ether (MTBE)	<RDL	10
Methylene chloride	<RDL	5.0
Tetrachloroethene	<RDL	1.0
Toluene	<RDL	1.0
trans-1,2-Dichloroethene	<RDL	1.0
Trichloroethene	<RDL	1.0
Vinyl chloride	<RDL	1.0
Xylenes (Total)	<RDL	2.0

ANALYSIS: X B/N Sample Surrogates (Waters)

Method Ref: 8270C

Date Ext/Dig/Prep: 2/9/01 Date Analyzed: 2/14/01

Result Units: %

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reported Detection Limits</u>
2-Fluorobiphenyl (Range 43-111)	86		
Nitrobenzene-d5 (Range 37-104)	85		
p-Terphenyl-d14 (Range 15-132)	48		

ANALYSIS: X VOC Sample Surrogates-Waters

Method Ref: 5030B/8260B

Date Ext/Dig/Prep: 2/7/01 Date Analyzed: 2/7/01

Result Units: %

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reported Detection Limits</u>
1,2-Dichloroethane-d4 (78-128)	103		
4-Bromofluorobenzene (86-112)	107		
Toluene-d8 (84-108)	99		

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 #: AC07598

Accura Project #: 26907

Client: Tetra Tech Nus -Jacksonville

Date Sampled: 2/5/01

Client Contact: PAUL CALLIGAN

Date Received: 2/6/01

Client Project Number: N0486/CTO 121

Date Reported: 2/25/01

Client Project Name: NAS CECIL FIELD-BLDG 81

Sample Matrix: WATER

Client Sample ID: CEF-81-GW-6S-01

ANALYSIS: PAH's - Low Level

Method Ref: 8270C

Date Ext/Dig/Prep: 2/9/01

Date Analyzed: 2/14/01

Result Units: ug/L

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

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

Method Ref: 8260B

Date Ext/Dig/Prep: 2/7/01

Date Analyzed: 2/7/01

Result Units: ug/L

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reported Detection Limits</u>
1,1,1-Trichloroethane	<RDL		1.0
1,1,1,2-Tetrachloroethane	<RDL		1.0
1,1,2-Trichloroethane	<RDL		1.0
1,1-Dichloroethane	3.1		1.0
1,1-Dichloroethene	1.4		1.0
1,2-Dichloroethane	<RDL		1.0
1,2-Dichloropropane	<RDL		1.0
1,3-Dichloropropene	<RDL		1.0
2-Chloroethylvinyl ether	<RDL		10
Acrolein	<RDL		10
Acrylonitrile	<RDL		10
Benzene	<RDL		1.0
Bromodichloromethane	<RDL		1.0

ACCURA ANALYTICAL LABORATORY, INC.

<RL = Less than Reporting Limit

Pg 3 of 10

Client Sample ID: CEF-81-GW-6S-01

AALSample ID #: AC07598 Accura Project #: 26907

Bromoform	<RDL	1.0
Bromomethane	<RDL	1.0
Carbon tetrachloride	<RDL	1.0
Chlorobenzene	<RDL	1.0
Chloroform	<RDL	1.0
Chloromethane	<RDL	1.0
Ethylbenzene	<RDL	1.0
Methyl-tert-butyl ether (MTBE)	<RDL	10
Methylene chloride	<RDL	5.0
Tetrachloroethene	<RDL	1.0
Toluene	<RDL	1.0
trans-1,2-Dichloroethene	<RDL	1.0
Trichloroethene	0.79 J	1.0
Vinyl chloride	<RDL	1.0
Xylenes (Total)	<RDL	2.0

ANALYSIS: X B/N Sample Surrogates (Waters)

Method Ref: 8270C

Date Ext/Dig/Prep: 2/9/01 Date Analyzed: 2/14/01

Result Units: %

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reported Detection Limits</u>
2-Fluorobiphenyl (Range 43-111)	91		
Nitrobenzene-d5 (Range 37-104)	89		
p-Terphenyl-d14 (Range 15-132)	97		

ANALYSIS: X VOC Sample Surrogates-Waters

Method Ref: 5030B/8260B

Date Ext/Dig/Prep: 2/7/01 Date Analyzed: 2/7/01

Result Units: %

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reported Detection Limits</u>
1,2-Dichloroethane-d4 (78-128)	104		
4-Bromofluorobenzene (86-112)	100		
Toluene-d8 (84-108)	100		

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 #: AC07599

Accura Project #: 26907

Client: Tetra Tech Nus -Jacksonville

Date Sampled: 2/5/01

Client Contact: PAUL CALLIGAN

Date Received: 2/6/01

Client Project Number: N0486/CTO 121

Date Reported: 2/25/01

Client Project Name: NAS CECIL FIELD-BLDG 81

Sample Matrix: WATER

Client Sample ID: CEF-81-GW-7S-01

ANALYSIS: PAH's - Low Level

Method Ref: 8270C

Date Ext/Dig/Prep: 2/9/01

Date Analyzed: 2/14/01

Result Units: ug/L

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

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

Method Ref: 8260B

Date Ext/Dig/Prep: 2/7/01

Date Analyzed: 2/7/01

Result Units: ug/L

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

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<RL = Less than Reporting Limit

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Client Sample ID: CEF-81-GW-7S-01

AALSample ID #: AC07599 Accura Project #: 26907

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

ANALYSIS: X B/N Sample Surrogates (Waters)

Method Ref: 8270C

Date Ext/Dig/Prep: 2/9/01 Date Analyzed: 2/14/01

Result Units: %

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reported Detection Limits</u>
2-Fluorobiphenyl (Range 43-111)	86		
Nitrobenzene-d5 (Range 37-104)	85		
p-Terphenyl-d14 (Range 15-132)	100		

ANALYSIS: X VOC Sample Surrogates-Waters

Method Ref: 5030B/8260B

Date Ext/Dig/Prep: 2/7/01 Date Analyzed: 2/7/01

Result Units: %

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reported Detection Limits</u>
1,2-Dichloroethane-d4 (78-128)	103		
4-Bromofluorobenzene (86-112)	103		
Toluene-d8 (84-108)	99		

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

LABORATORY REPORT

Accura Sample ID #: AC07600

Accura Project #: 26907

Client: Tetra Tech Nus -Jacksonville

Date Sampled: 2/5/01

Client Contact: PAUL CALLIGAN

Date Received: 2/6/01

Client Project Number: N0486/CTO 121

Date Reported: 2/25/01

Client Project Name: NAS CECIL FIELD-BLDG 81

Sample Matrix: WATER

Client Sample ID: CEF-81-GW-DUP1-01

ANALYSIS: PAH's - Low Level

Method Ref: 8270C

Date Ext/Dig/Prep: 2/9/01

Date Analyzed: 2/14/01

Result Units: ug/L

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reported Detection Limits</u>
1-Methylnaphthalene	3.8		1.0
2-Methylnaphthalene	<RDL		1.0
Acenaphthene	0.65	J	1.0
Acenaphthylene	<RDL		1.0
Anthracene	<RDL		1.0
Benzo(a)anthracene	<RDL		1.0
Benzo(a)pyrene	<RDL		1.0
Benzo(b)fluoranthene	<RDL		1.0
Benzo(g,h,i)perylene	<RDL		1.0
Benzo(k)fluoranthene	<RDL		1.0
Chrysene	<RDL		1.0
Dibenz(a,h)anthracene	<RDL		1.0
Fluoranthene	<RDL		1.0
Fluorene	1.1		1.0
Indeno(1,2,3-cd)pyrene	<RDL		1.0
Naphthalene	0.62	J	1.0
Phenanthrene	<RDL		1.0
Pyrene	<RDL		1.0

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

Method Ref: 8260B

Date Ext/Dig/Prep: 2/7/01

Date Analyzed: 2/7/01

Result Units: ug/L

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

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<RL = Less than Reporting Limit

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Client Sample ID: CEF-81-GW-DUP1-01

AALSample ID #: AC07600 Accura Project #: 26907

Bromoform	<RDL	1.0
Bromomethane	<RDL	1.0
Carbon tetrachloride	<RDL	1.0
Chlorobenzene	<RDL	1.0
Chloroform	<RDL	1.0
Chloromethane	<RDL	1.0
Ethylbenzene	3.1	1.0
Methyl-tert-butyl ether (MTBE)	<RDL	10
Methylene chloride	<RDL	5.0
Tetrachloroethene	<RDL	1.0
Toluene	<RDL	1.0
trans-1,2-Dichloroethene	<RDL	1.0
Trichloroethene	<RDL	1.0
Vinyl chloride	<RDL	1.0
Xylenes (Total)	<RDL	2.0

ANALYSIS: X B/N Sample Surrogates (Waters)

Method Ref: 8270C

Date Ext/Dig/Prep: 2/9/01 Date Analyzed: 2/14/01

Result Units: %

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reported Detection Limits</u>
2-Fluorobiphenyl (Range 43-111)	88		
Nitrobenzene-d5 (Range 37-104)	81		
p-Terphenyl-d14 (Range 15-132)	61		

ANALYSIS: X VOC Sample Surrogates-Waters

Method Ref: 5030B/8260B

Date Ext/Dig/Prep: 2/7/01 Date Analyzed: 2/7/01

Result Units: %

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reported Detection Limits</u>
1,2-Dichloroethane-d4 (78-128)	105		
4-Bromofluorobenzene (86-112)	111		
Toluene-d8 (84-108)	102		

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LABORATORY REPORT

Accura Sample ID #: AC07601

Accura Project #: 26907

Client: Tetra Tech Nus -Jacksonville

Date Sampled: 2/6/01

Client Contact: PAUL CALLIGAN

Date Received: 2/6/01

Client Project Number: N0486/CTO 121

Date Reported: 2/25/01

Client Project Name: NAS CECIL FIELD-BLDG 81

Sample Matrix: WATER

Client Sample ID: METHOD BLANK

ANALYSIS: PAH's - Low Level

Method Ref: 8270C

Date Ext/Dig/Prep: 2/9/01

Date Analyzed: 2/13/01

Result Units: ug/L

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

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

Method Ref: 8260B

Date Ext/Dig/Prep: 2/7/01

Date Analyzed: 2/7/01

Result Units: ug/L

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

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<RL = Less than Reporting Limit

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Client Sample ID: METHOD BLANK

AALSample ID #: AC07601 Accura Project #: 26907

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

ANALYSIS: X Base Neutral QC Surrogates (W)

Method Ref: 8270C

Date Ext/Dig/Prep: 2/9/01 Date Analyzed: 2/13/01

Result Units: %

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reported Detection Limits</u>
2-Fluorobiphenyl (Range 57-102)	88		
Nitrobenzene-d5 (Range 50-103)	87		
p-Terphenyl-d14 (Range 64-113)	101		

ANALYSIS: X VOC QC Surrogates-Waters

Method Ref: 5030B/8260B

Date Ext/Dig/Prep: 2/7/01 Date Analyzed: 2/7/01

Result Units: %

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reported Detection Limits</u>
1,2-Dichloroethane-d4 (78-114)	106		
4-Bromofluorobenzene (85-111)	103		
Toluene-d8 (88-106)	101		

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CASE NARRATIVE for Project Number: 26907
Client Project: NAS Cecil Field – Bldg 81 / N0486 / CTO 121
CTO Manager: Paul Calligan

The following items were noted concerning this project:

1. The following samples were received by Accura Analytical Laboratory on 02/06/01 at 0915:

<u>Client I.D.</u>	<u>Laboratory I.D.</u>
CEF-81-GW-5S-01	AC07597
CEF-81-GW-6S-01	AC07598
CEF-81-GW-7S-01	AC07599
CEF-81-GW-DUP1-01	AC07600

2. The sample cooler temperature was noted to be 2⁰C upon receipt.
3. The “J” values noted for the PAH and VOC 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. Batch QC for the PAH analysis consists of LCS/LCSD due to limited sample volume. Note that the LCS/LCSD recoveries are reported as MS/MSD recoveries on the QC spreadsheet.
6. The laboratory control sample recovery was outside the project specified limit for the following analyte:

VOC – SW-846-8260B
Bromomethane

The laboratory control sample recovery was bias high, and there were no hits of Bromomethane in the samples; therefore the data results were accepted.

7. The following spike recoveries were outside the advisory limits:

VOC – SW-46-8260B

Matrix Spike -

Bromomethane

Matrix Spike Duplicate -

Bromomethane

There were no hits of this analyte in the samples; therefore the data results were accepted.

Quality Assurance