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NAS CECIL FIELD, FL
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OPTION YEAR 1 THIRD QUARTER 2006 TO 2007 OPERATIONS AND MAINTENANCE
STATUS REPORT FOR AIR SPARGING SYSTEM AT BUILDING 271 NAS CECIL FIELD FL
2/28/2007
ESA ENVIRONMENTAL SPECIALISTS INC

**Option Year 1, Third Quarter 2006-2007
Operations and Maintenance Status Report**

**Air Sparging System
Building 271**

**Former Naval Air Station Cecil Field
Jacksonville, Florida**

Contract No. N62467-03-G-0016

Submitted to:

U.S. Naval Facilities
Engineering Command
Southern Division

Prepared by:



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February 28, 2007

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Acronyms

ABB-ES	ABB Environmental Services, Inc.
AS	Air Sparging
AST	Aboveground Storage Tank
bls	Below Land Surface
BTEX	benzene, toluene, ethylbenzene, xylene
CA	Contamination Assessment
CAR	Contamination Assessment Report
cfm	cubic feet per minute
CTO	Contract Task Order
CSR	Confirmatory Sampling Report
DO	dissolved oxygen
EPA	U.S. Environmental Protection Agency
ESA	ESA Environmental Specialists, Inc
FAC	Florida Administration Code
FDEP	Florida Department of Environmental Protection
FID	Flame ionization detector
FL-PRO	Florida Petroleum Residual Organic
GAC	granular activated carbon
GCTLs	groundwater cleanup target levels
HLA	Harding Lawson Associates
JETC	Jet Engine Test Cell
LNAPL	Light Non-Aqueous Phase Liquids
LCAR	Limited Closure Assessment Reports
mg/ L	milligrams per liter
MTBE	methyl tert butyl ether
NADSC	Natural Attenuation Default Source Concentration
NAS	Naval Air Station
NAVFAC EDF	Naval Facilities Engineering Command, Engineering Field
SOUTH	Division, Southern Division
O&M	Operation and Maintenance
ORP	oxygen-reduction potential
OWSs	oil water separators

PAH	polynuclear aromatic hydrocarbon
ppm	parts per million
psi	pounds per square inch
RAP	Remedial Action Plan
RAPA	Remedial Action Plan Addendum
SA	Site Assessment
SARA	Site Assessment Report Addendum
SCTLs	Soil Cleanup Target Levels
TRPH	total recoverable petroleum hydrocarbon
TtNUS	Tetra Tech NUS
USACE	U.S. Army Corps of Engineers
UST	Underground Storage Tank
VOC	Volatile Organic Compound

1 Introduction

ESA Environmental Specialists, Inc. (ESA) has been contracted by the Department of the Navy, Naval Facilities Engineering Command Engineering Field Division South (NAVFAC EFD SOUTH), to provide active treatment operation and maintenance (O&M) services at two groundwater remediation sites (Jet Engine Test Cell and Building 271), plus annual natural attenuation monitoring services at one groundwater remediation site (Area 199), situated at the former Naval Air Station (NAS) Cecil Field, Jacksonville, Duval County, Florida.

The purpose of this Option Year 1, Third Quarter 2006-2007 Operations and Maintenance Status Report is to provide a summary of activities performed at the Building 271 site during the period from November 1, 2006 through January 31, 2007.

1.1 Site History

Building 271

Building 271 was a former retail gasoline facility that contained four Underground Storage Tanks (USTs) (designated 271-D, 271-R, 271-UL, and 271-SUL) and two oil water separators (OWSs). The USTs were grouped in a tank pit located on the west side of Building 271, while the OWSs were located on the east side of the building. USTs 271-UL, 271-R, and 271-SUL each had an approximate capacity of 10,000 gallons and UST 271-D had an approximate capacity of 6,000 gallons (TtNUS, 2002).

According to UST closure records, UST 271-D was removed on March 5, 1996, and no soil or groundwater contamination was detected. The report also indicates that the UST and associated piping were removed from the site (TtNUS, 2002).

In July 1999, Harding Lawson Associates (HLA) compiled a Confirmatory Sampling Report (CSR) for the USTs and the two OWSs that indicated petroleum-impacted soil was encountered at two locations relative to the USTs. The CSR concluded that soil or groundwater was not impacted as a result of past OWS operations. Based on the CSR finding of soil contamination, a Site Assessment (SA) was recommended for the UST site. An SA Plan for the assessment of soil and groundwater at the UST site was prepared by TtNUS (TtNUS, 2002).

Following completion of the planned investigation in the SA Plan, CH2M Hill removed the remaining three USTs, associated piping, and distribution systems. The UST and associated soil removals addressed the soil contamination issues; however, groundwater samples collected following UST and soil removal indicated the presence of volatile organic compounds (VOCs) in site groundwater. TtNUS proceeded to plan and execute a second investigation in a SA Plan Addendum (2001) to further define the extent of contamination in the groundwater (TtNUS, 2002).

CH2M Hill also removed both OWSs, and submitted separate Limited Closure Assessment Reports (LCAR) for each OWS site in April 2001 to the FDEP. Both LCARs for the OWSs indicated that no petroleum contamination of the soil or

groundwater existed in the immediate areas surrounding the former OWSs. On May 23, 2001, the FDEP issued separate letters agreeing with CH2M Hill's findings (TtNUS, 2002).

A SA report prepared by TtNUS in May 2002 concluded that petroleum constituents had impacted groundwater in the vicinity of the former USTs and that all of the contaminated soil was removed by CH2M Hill during the UST removal. TtNUS recommended the preparation and implementation of a Remedial Action Plan (RAP) to remediate groundwater at the site (TtNUS, 2002).

TtNUS submitted to FDEP for approval a RAP in September 2002 and a RAP Addendum (RAPA) in January 2003 to select the remedial alternative to remediate the contaminated groundwater at the site. Air Sparge (AS) was selected as the remedial alternative. FDEP Approval on the RAP and RAPA was received in February 2003.

CH2M Hill installed an AS system in accordance with the RAP (TtNUS, 2002), RAPA (TtNUS, 2003), and Work Plan Addendum No. 18, Installation of Air Sparging Systems at the Jet Engine Test Cell (JETC) and Building 271 (CH2M Hill, 2003) from September to November 2003. The AS system commenced operation on November 17, 2003.

On May 24, 2005, management of on-going remedial activities at the Building 271 site was transferred from CH2M Hill to ESA.

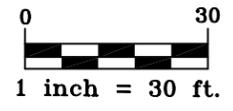
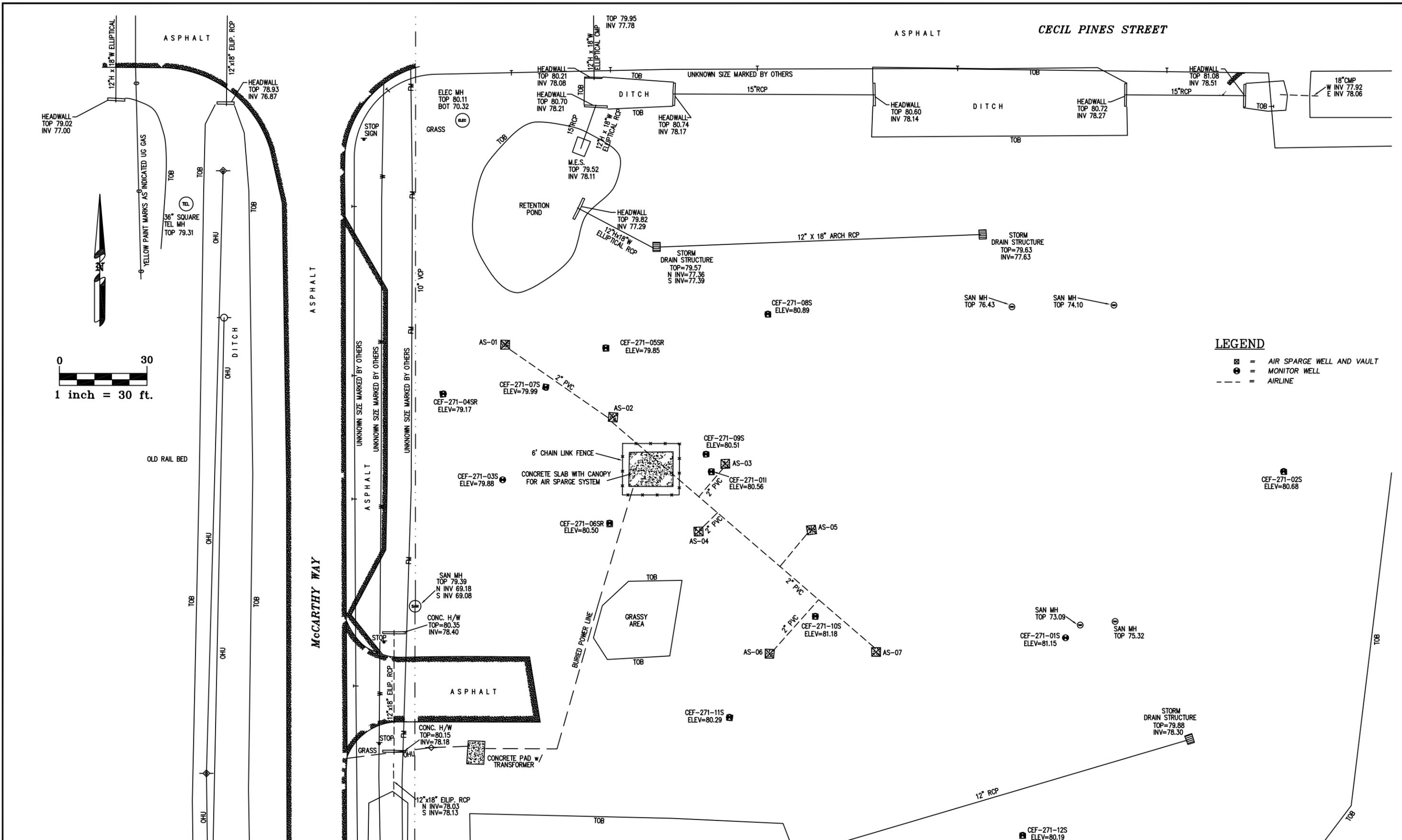
A site plan showing the site and the AS system layout is provided in Figure 1-1.

1.2 Remediation System/Technology Description

AS is a physical treatment method of expediting the transfer of VOCs from the soil and groundwater to the sparging air. Atmospheric air is injected into the air sparge wells, which are screened within the groundwater contaminant plume. As the injected air passes upward through the VOC laden groundwater and soil, VOCs are partitioned to the passing air and migrate to the vadose zone.

The Building 271 AS system consists of seven (7) AS wells (AS-01 through AS-07), a rotary vane-type compressor, a receiver tank, and associated piping and instrumentation. The AS wells are screened from approximately 28 to 30 feet below land surface (bls). The AS system is designed for each AS well to operate at an airflow rate of 10 cubic feet per minute (cfm) at an injection pressure of 15 pounds per square inch (psi). The locations of the AS wells are shown on Figure 1-1.

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- LEGEND**
- ☒ = AIR SPARGE WELL AND VAULT
 - ⊙ = MONITOR WELL
 - = AIRLINE

DRAWN: RC	REVISIONS	BY	DATE
CHECKED: AS			
DATE: FEB 2006			



**BUILDING 271
FORMER NAS CECIL FIELD
JACKSONVILLE, FLORIDA**

SITE MAP
AUGUST 24, 2006

FIGURE
1-1

2 Summary of Sampling and Laboratory Analytical Results

2.1 Groundwater Monitoring

ESA conducted Option Year 1, Third Quarter 2006-2007 groundwater monitoring events beginning in 11/1/2006. During the Option Year 1, Third Quarter 2006-2007 monitoring event monitoring wells CEF-271 were sampled. The groundwater samples were laboratory analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX) and methyl tert butyl ether (MTBE) by EPA Method SW8021B, the 16-listed polynuclear aromatic hydrocarbons (PAHs) and 1- and 2-methylnaphthalene by AEL SOP SVOC-006: 2-25-03 and SW8270C-SIM, and Total Recoverable Petroleum Hydrocarbons (TRPH) were analyzed by the Florida Petroleum Organic (FL-PRO) Method. The laboratory analytical results for the detected parameters from the 3rd Contract Quarter groundwater monitoring events are summarized in Table 2-1. The locations of the monitoring wells are shown on Figure 1-1. Copies of the analytical laboratory reports from the groundwater monitoring events are provided in Appendix A.

During the previous 2nd quarter 2006-2007 quarterly report, CEF-271-07S identified Toluene that exceed GCTL levels, and Xylenes and Napthalene levels had increased to exceed both GCTLs and NASDSC levels. Current quarter sampling has shown these levels to drop by almost 10-fold.

It should be noted that the following table do show some bolding and shading where limits were exceeded, however, these are all followed by a U which defines that the compound was analyzed for but not detected. The duplicates and equipment blanks report the same undetected limits with a number higher than the GCTLs and NADSC allow.

Table 2-1 Groundwater Analytical Results, Option Year 1, Third Quarter 2006-2007

Parameter	Station ID		CEF-271-09S	CEF-271-10S	CEF-271-12S	CEF-271-07S	Equip Blank
	Sample ID		J068559-01	J068559-02	J068559-03	J068559-04	J068559-05
	Sample Date		11/18/06	11/18/06	11/18/06	11/18/06	11/18/06
	GCTL ¹	NADC ¹					
	micrograms per liter (µg/L)						
Volatile Aromatic Hydrocarbons							
Benzene	1	10	0.21 U	0.21 U	0.21 U	0.63 U	0.21
Ethylbenzene	30	300	0.17 U	0.17 U	0.17 U	5.8	0.17
Methyl-tert-butyl Ether	20	200	0.35 U	0.35 U	0.35 U	1.1 U	0.35
Xylenes (total)	20	200	0.63 U	0.63 U	0.63 U	22.8	0.63
Toluene	1	10	0.23 U	0.23 U	0.23 U	0.69 U	0.23
Polynuclear Aromatic Hydrocarbons							
1-methylnaphthalene	28	280	0.12 U	0.12 U	0.12 U	9.7	0.12 U
2-methylnaphthalene	28	280	0.18 U	0.18 U	0.18 U	9.2	0.18 U
Acenaphthene	20	200	0.13 U	0.13 U	0.13 U	0.65	0.13 U
Acenaphthylene	210	2100	0.13 U				
Anthracene	2100	21000	0.080 U	0.080 U	0.080 U	0.089 i	0.080 U
Benzo(a)anthracene	0.05	0.5	0.029 U				
Benzo(a)pyrene	0.2	2	0.023 U				
Benzo(b)fluoranthene	0.05	0.5	0.025 U				
Benzo(g,h,i)perylene	210	2100	0.092 U				
Benzo(k)fluoranthene	0.5	5	0.082 U				
Chrysene	4.8	48	0.060 U				
Dibenz(a,h)anthracene	0.005	0.05	0.047 U				
Fluoranthene	280	2800	0.084 U	0.084 U	0.084 U	0.27 i	0.084 U
Fluorene	280	2800	0.10 U	0.10 U	0.10 U	0.46	0.10 U
Indeno(1,2,3-cd)pyrene	0.05	0.5	0.039 U				
Naphthalene	14	140	0.15 U	0.15 U	0.15 U	49	0.15 U
Phenanthrene	210	2100	0.10 U	0.10 U	0.10 U	0.44	0.10 U
Pyrene	210	2100	0.12 U	0.12 U	0.12 U	0.30 i	0.12 U

Notes:

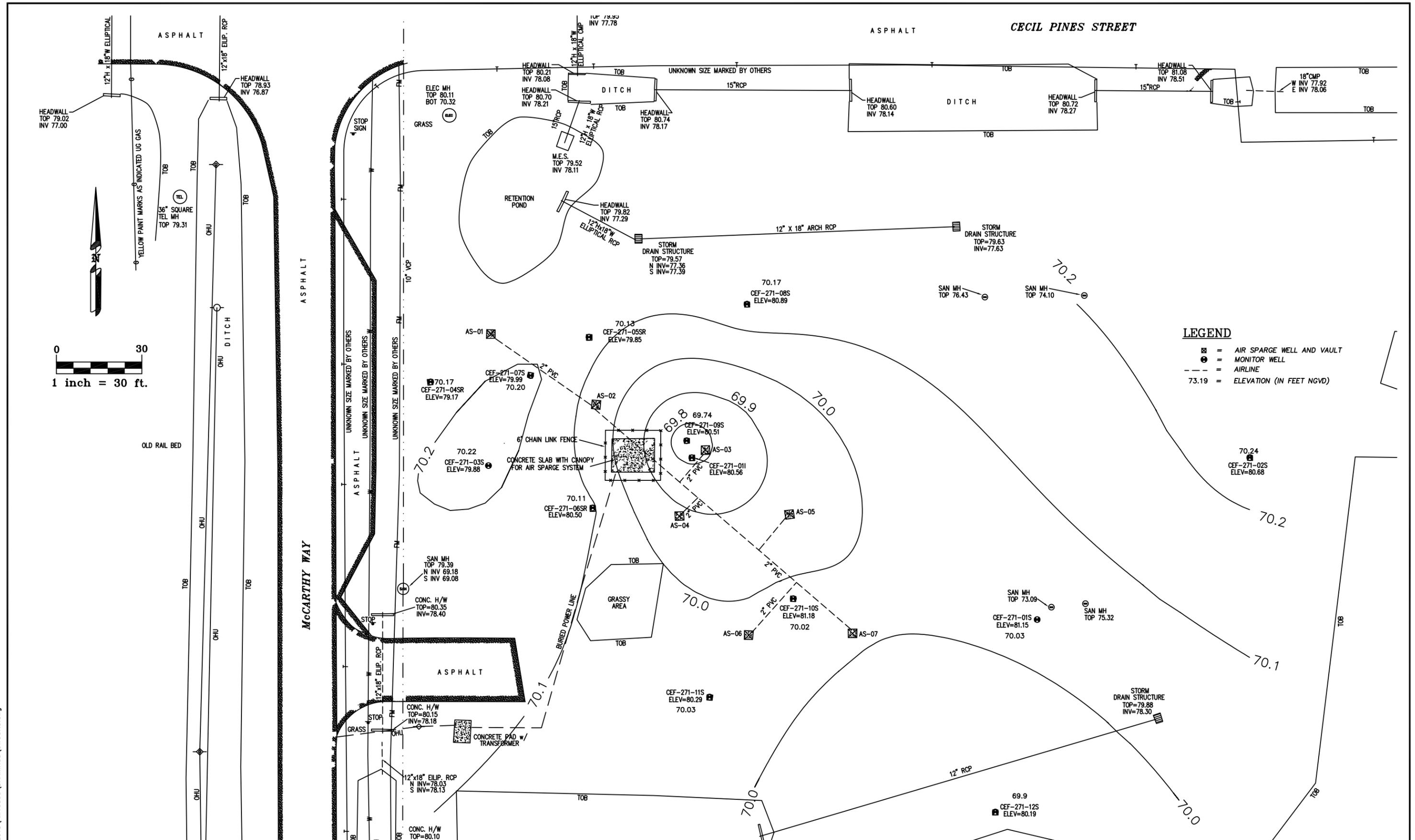
GCTL - Groundwater Cleanup Target Level, 1 = Chapter 62-777 FAC GCTLs reported in µg/L, Bold indicates concentration exceeds GCTL

NADC - Natural Attenuation Default Concentration, Shade indicates concentration exceeds NADC

U - the compound was analyzed for but not detected

i - the reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

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DRAWN: RC	REVISIONS	BY	DATE
CHECKED: AS			
DATE: FEB 2006			



**BUILDING 271
FORMER NAS CECIL FIELD
JACKSONVILLE, FLORIDA**

**POTENIOMETRIC
SURFACE MAP
AUGUST 24, 2006**

FIGURE
2-1

3.0 Conclusions and Recommendations

The Building 271 AS systems operates via a system enhancement for the installation of automatic timed resets for the Mattei compressors operating at Cecil Field set to auto in order to operate effectively. The installation offers the AS Systems auto reset capabilities as compared to the previous configuration which only offered a manual reset method.

CEF-271-07S has shown in previous quarterly reports, exceeded levels of NADSC and GCTLs for Total Xylenes and Naphthalene, however during this reporting period, these levels have dropped 10-fold in each category and currently only exceed GCTL levels. This is the only monitoring well that reports any exceedance limit of GCTL and NADSC levels, all others are undetected for all analytes tested.

For the most part, as compared to the previous quarterly reports, the groundwater analytical concentrations have remained undetected or decreased. This indicates that the air sparge system is reducing the groundwater contamination at this site. Special attention should be taken to CEF-271-07S to ensure that GCTLs continue to decrease below detection limits for Naphthalene and Total Xylenes.

4.0 References

ESA Environmental Specialists, Inc. June 2005. Cecil Field Workplan. NAS Cecil Field, Jacksonville, Florida.

ESA Environmental Specialists, Inc. June 2005. Cecil Field Health and Safety Plan. NAS Cecil Field, Jacksonville, FL.

CH2MHILL Constructors, Inc. April 2001. Limited Closure Assessment Report, Oil/Water Separator Removal. NAS Cecil Field, Jacksonville, Florida.

CH2MHILL Constructors, Inc. August 2003. Work Plan Addendum No. 18, Work Plan Addendum No. 18 Installation of Air Sparging Systems at the Jet Engine Test Cell and Building 271, Naval Air Station Cecil Field, Jacksonville, Florida.

TetraTech NUS, Inc. September 2002. Remedial Action Plan for Building 271 Tanks UL/R/SUL/D at Naval Air Station Cecil Field, Jacksonville, Florida.

TetraTech NUS, Inc. January 2003. Remedial Action Plan Addendum for Building 271 Tanks UL/R/SUL/D at Naval Air Station Cecil Field, Jacksonville, Florida.

APPENDIX A
Analytical Results



Client: URS
Project Name: Cecil Field-Bldg 271
Project Number:

Report No.: J068559
Date Sampled: 11/18/06
Date Received: 11/20/06 13:00
Date Reported: 11/27/06

Attention: William Kelly
Phone Number: 9046456233
Address: 8761 Perimeter Park Blvd.
Suite 201
Jacksonville, FL 32216

Project Description

The analytical results for the samples contained in this report were submitted for analysis as outlined by the Chain of Custody.

Project Name: Cecil Field-Bldg 271

Approved By: _____

Paul Gunsaulies, Project Manager

If there are any questions involving this report, the above named should be contacted.

**THIS REPORT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT
THE WRITTEN APPROVAL OF THE LABORATORY.**

Advanced Environmental Laboratories certifies that the test results in this report meet all requirements of the NELAC standards, unless notated otherwise in the body of the report.

Total Number of Pages = 8 + 2 COC

Advanced Environmental Laboratories, Inc.

Analytical Report

Client: URS

Report No.: J068559

Project Name: Cecil Field-Bldg 271

Date/Time Received: 11/20/06 13:00

Lab Code: J068559-01

Date/Time Sampled: 11/18/06 13:29

Client Sample ID: 1

Shipping Method: Client drop off

Site: CEF-271-09S

Sampled By: Robert Burns

Matrix: Water

Sampling Method: G

BTEX/MTBE

Analytes:	Dilution	Adjusted MDL	Adjusted PQL	Results	Units	Qualifier(s)	Method	Parameter Comment	Lab
Benzene	1	0.21	0.84	0.21	ug/L	U	SW8021B		J
Ethylbenzene	1	0.17	0.68	0.17	ug/L	U	SW8021B		J
m&p-Xylenes	1	0.40	1.6	0.40	ug/L	U	SW8021B		J
Methyl-tert-butyl Ether	1	0.35	1.4	0.35	ug/L	U	SW8021B		J
o-Xylene	1	0.23	0.92	0.23	ug/L	U	SW8021B		J
Toluene	1	0.23	0.92	0.23	ug/L	U	SW8021B		J

Polynuclear Aromatic Hydrocarbons

Analytes:	Dilution	Adjusted MDL	Adjusted PQL	Results	Units	Qualifier(s)	Method	Parameter Comment	Lab
1-Methylnaphthalene	1	0.12	0.49	0.12	ug/L	U	AEL SOP SVOC-006: 2-25-03		J
2-Methylnaphthalene	1	0.18	0.71	0.18	ug/L	U	SW8270C-SIM		J
Acenaphthene	1	0.13	0.51	0.13	ug/L	U	SW8270C-SIM		J
Acenaphthylene	1	0.13	0.51	0.13	ug/L	U	SW8270C-SIM		J
Anthracene	1	0.080	0.32	0.080	ug/L	U	SW8270C-SIM		J
Benzo(a)anthracene	1	0.029	0.12	0.029	ug/L	U	SW8270C-SIM		J
Benzo(a)pyrene	1	0.023	0.092	0.023	ug/L	U	SW8270C-SIM		J
Benzo(b)fluoranthene	1	0.025	0.098	0.025	ug/L	U	SW8270C-SIM		J
Benzo(g,h,i)perylene	1	0.092	0.37	0.092	ug/L	U	SW8270C-SIM		J
Benzo(k)fluoranthene	1	0.082	0.33	0.082	ug/L	U	SW8270C-SIM		J
Chrysene	1	0.060	0.24	0.060	ug/L	U	SW8270C-SIM		J
Dibenz(a,h)anthracene	1	0.047	0.19	0.047	ug/L	U	SW8270C-SIM		J
Fluoranthene	1	0.084	0.34	0.084	ug/L	U	SW8270C-SIM		J
Fluorene	1	0.10	0.42	0.10	ug/L	U	SW8270C-SIM		J
Indeno(1,2,3-cd)pyrene	1	0.039	0.16	0.039	ug/L	U	SW8270C-SIM		J
Naphthalene	1	0.15	0.61	0.15	ug/L	U	SW8270C-SIM		J
Phenanthrene	1	0.10	0.40	0.10	ug/L	U	SW8270C-SIM		J
Pyrene	1	0.12	0.48	0.12	ug/L	U	SW8270C-SIM		J

Surrogates:	Control Limits	% Recovery	Qual.	Method	Prep Method
1-Bromo-4-chlorobenzene	75 - 119	98		SW8021B	SW5030B
Decafluorobiphenyl	21 - 122	78		SW8270C-SIM	SW3510C

U The compound was analyzed for but not detected.

J DOH certification #E82574 (AEL-JAX) (FL NELAC certification)

Advanced Environmental Laboratories, Inc.

Analytical Report

Client: URS

Report No.: J068559

Project Name: Cecil Field-Bldg 271

Date/Time Received: 11/20/06 13:00

Lab Code: J068559-02

Date/Time Sampled: 11/18/06 14:15

Client Sample ID: 2

Shipping Method: Client drop off

Site: CEF-271-10S

Sampled By: Robert Burns

Matrix: Water

Sampling Method: G

BTEX/MTBE

Analytes:	Dilution	Adjusted MDL	Adjusted PQL	Results	Units	Qualifier(s)	Method	Parameter Comment	Lab
Benzene	1	0.21	0.84	0.21	ug/L	U	SW8021B		J
Ethylbenzene	1	0.17	0.68	0.17	ug/L	U	SW8021B		J
m&p-Xylenes	1	0.40	1.6	0.40	ug/L	U	SW8021B		J
Methyl-tert-butyl Ether	1	0.35	1.4	0.35	ug/L	U	SW8021B		J
o-Xylene	1	0.23	0.92	0.23	ug/L	U	SW8021B		J
Toluene	1	0.23	0.92	0.23	ug/L	U	SW8021B		J

Polynuclear Aromatic Hydrocarbons

Analytes:	Dilution	Adjusted MDL	Adjusted PQL	Results	Units	Qualifier(s)	Method	Parameter Comment	Lab
1-Methylnaphthalene	1	0.12	0.49	0.12	ug/L	U	AEL SOP SVOC-006: 2-25-03		J
2-Methylnaphthalene	1	0.18	0.71	0.18	ug/L	U	SW8270C-SIM		J
Acenaphthene	1	0.13	0.51	0.13	ug/L	U	SW8270C-SIM		J
Acenaphthylene	1	0.13	0.51	0.13	ug/L	U	SW8270C-SIM		J
Anthracene	1	0.080	0.32	0.080	ug/L	U	SW8270C-SIM		J
Benzo(a)anthracene	1	0.029	0.12	0.029	ug/L	U	SW8270C-SIM		J
Benzo(a)pyrene	1	0.023	0.092	0.023	ug/L	U	SW8270C-SIM		J
Benzo(b)fluoranthene	1	0.025	0.098	0.025	ug/L	U	SW8270C-SIM		J
Benzo(g,h,i)perylene	1	0.092	0.37	0.092	ug/L	U	SW8270C-SIM		J
Benzo(k)fluoranthene	1	0.082	0.33	0.082	ug/L	U	SW8270C-SIM		J
Chrysene	1	0.060	0.24	0.060	ug/L	U	SW8270C-SIM		J
Dibenz(a,h)anthracene	1	0.047	0.19	0.047	ug/L	U	SW8270C-SIM		J
Fluoranthene	1	0.084	0.34	0.084	ug/L	U	SW8270C-SIM		J
Fluorene	1	0.10	0.42	0.10	ug/L	U	SW8270C-SIM		J
Indeno(1,2,3-cd)pyrene	1	0.039	0.16	0.039	ug/L	U	SW8270C-SIM		J
Naphthalene	1	0.15	0.61	0.15	ug/L	U	SW8270C-SIM		J
Phenanthrene	1	0.10	0.40	0.10	ug/L	U	SW8270C-SIM		J
Pyrene	1	0.12	0.48	0.12	ug/L	U	SW8270C-SIM		J

Surrogates:	Control Limits	% Recovery	Qual.	Method	Prep Method
1-Bromo-4-chlorobenzene	75 - 119	96		SW8021B	SW5030B
Decafluorobiphenyl	21 - 122	63		SW8270C-SIM	SW3510C

U The compound was analyzed for but not detected.

J DOH certification #E82574 (AEL-JAX) (FL NELAC certification)

Advanced Environmental Laboratories, Inc.

Analytical Report

Client: URS

Report No.: J068559

Project Name: Cecil Field-Bldg 271

Date/Time Received: 11/20/06 13:00

Lab Code: J068559-03

Date/Time Sampled: 11/18/06 15:33

Client Sample ID: 3

Shipping Method: Client drop off

Site: CEF-271-12S

Sampled By: Robert Burns

Matrix: Water

Sampling Method: G

BTEX/MTBE

Analytes:	Dilution	Adjusted MDL	Adjusted PQL	Results	Units	Qualifier(s)	Method	Parameter Comment	Lab
Benzene	1	0.21	0.84	0.21	ug/L	U	SW8021B		J
Ethylbenzene	1	0.17	0.68	0.17	ug/L	U	SW8021B		J
m&p-Xylenes	1	0.40	1.6	0.40	ug/L	U	SW8021B		J
Methyl-tert-butyl Ether	1	0.35	1.4	0.35	ug/L	U	SW8021B		J
o-Xylene	1	0.23	0.92	0.23	ug/L	U	SW8021B		J
Toluene	1	0.23	0.92	0.23	ug/L	U	SW8021B		J

Polynuclear Aromatic Hydrocarbons

Analytes:	Dilution	Adjusted MDL	Adjusted PQL	Results	Units	Qualifier(s)	Method	Parameter Comment	Lab
1-Methylnaphthalene	1	0.12	0.49	0.12	ug/L	U	AEL SOP SVOC-006: 2-25-03		J
2-Methylnaphthalene	1	0.18	0.71	0.18	ug/L	U	SW8270C-SIM		J
Acenaphthene	1	0.13	0.51	0.13	ug/L	U	SW8270C-SIM		J
Acenaphthylene	1	0.13	0.51	0.13	ug/L	U	SW8270C-SIM		J
Anthracene	1	0.080	0.32	0.080	ug/L	U	SW8270C-SIM		J
Benzo(a)anthracene	1	0.029	0.12	0.029	ug/L	U	SW8270C-SIM		J
Benzo(a)pyrene	1	0.023	0.092	0.023	ug/L	U	SW8270C-SIM		J
Benzo(b)fluoranthene	1	0.025	0.098	0.025	ug/L	U	SW8270C-SIM		J
Benzo(g,h,i)perylene	1	0.092	0.37	0.092	ug/L	U	SW8270C-SIM		J
Benzo(k)fluoranthene	1	0.082	0.33	0.082	ug/L	U	SW8270C-SIM		J
Chrysene	1	0.060	0.24	0.060	ug/L	U	SW8270C-SIM		J
Dibenz(a,h)anthracene	1	0.047	0.19	0.047	ug/L	U	SW8270C-SIM		J
Fluoranthene	1	0.084	0.34	0.084	ug/L	U	SW8270C-SIM		J
Fluorene	1	0.10	0.42	0.10	ug/L	U	SW8270C-SIM		J
Indeno(1,2,3-cd)pyrene	1	0.039	0.16	0.039	ug/L	U	SW8270C-SIM		J
Naphthalene	1	0.15	0.61	0.15	ug/L	U	SW8270C-SIM		J
Phenanthrene	1	0.10	0.40	0.10	ug/L	U	SW8270C-SIM		J
Pyrene	1	0.12	0.48	0.12	ug/L	U	SW8270C-SIM		J

Surrogates:	Control Limits	% Recovery	Qual.	Method	Prep Method
1-Bromo-4-chlorobenzene	75 - 119	96		SW8021B	SW5030B
Decafluorobiphenyl	21 - 122	77		SW8270C-SIM	SW3510C

U The compound was analyzed for but not detected.

J DOH certification #E82574 (AEL-JAX) (FL NELAC certification)

Advanced Environmental Laboratories, Inc.

Analytical Report

Client: URS

Report No.: J068559

Project Name: Cecil Field-Bldg 271

Date/Time Received: 11/20/06 13:00

Lab Code: J068559-04

Date/Time Sampled: 11/18/06 16:59

Client Sample ID: 4

Shipping Method: Client drop off

Site: CEF-271-07S

Sampled By: Robert Burns

Matrix: Water

Sampling Method: G

BTEX/MTBE

Analytes:	Dilution	Adjusted MDL	Adjusted PQL	Results	Units	Qualifier(s)	Method	Parameter Comment	Lab
Benzene	3	0.63	2.5	0.63	ug/L	U	SW8021B		J
Ethylbenzene	3	0.51	2.0	5.8	ug/L		SW8021B		J
m&p-Xylenes	3	1.2	4.8	17	ug/L		SW8021B		J
Methyl-tert-butyl Ether	3	1.1	4.2	1.1	ug/L	U	SW8021B		J
o-Xylene	3	0.69	2.8	5.8	ug/L		SW8021B		J
Toluene	3	0.69	2.8	0.69	ug/L	U	SW8021B		J

Polynuclear Aromatic Hydrocarbons

Analytes:	Dilution	Adjusted MDL	Adjusted PQL	Results	Units	Qualifier(s)	Method	Parameter Comment	Lab
1-Methylnaphthalene	1	0.12	0.49	9.7	ug/L		AEL SOP SVOC-006: 2-25-03		J
2-Methylnaphthalene	1	0.18	0.71	9.2	ug/L		SW8270C-SIM		J
Acenaphthene	1	0.13	0.51	0.65	ug/L		SW8270C-SIM		J
Acenaphthylene	1	0.13	0.51	0.13	ug/L	U	SW8270C-SIM		J
Anthracene	1	0.080	0.32	0.089	ug/L	i	SW8270C-SIM		J
Benzo(a)anthracene	1	0.029	0.12	0.029	ug/L	U	SW8270C-SIM		J
Benzo(a)pyrene	1	0.023	0.092	0.023	ug/L	U	SW8270C-SIM		J
Benzo(b)fluoranthene	1	0.025	0.098	0.025	ug/L	U	SW8270C-SIM		J
Benzo(g,h,i)perylene	1	0.092	0.37	0.092	ug/L	U	SW8270C-SIM		J
Benzo(k)fluoranthene	1	0.082	0.33	0.082	ug/L	U	SW8270C-SIM		J
Chrysene	1	0.060	0.24	0.060	ug/L	U	SW8270C-SIM		J
Dibenz(a,h)anthracene	1	0.047	0.19	0.047	ug/L	U	SW8270C-SIM		J
Fluoranthene	1	0.084	0.34	0.27	ug/L	i	SW8270C-SIM		J
Fluorene	1	0.10	0.42	0.46	ug/L		SW8270C-SIM		J
Indeno(1,2,3-cd)pyrene	1	0.039	0.16	0.039	ug/L	U	SW8270C-SIM		J
Naphthalene	1	0.15	0.61	49	ug/L		SW8270C-SIM		J
Phenanthrene	1	0.10	0.40	0.44	ug/L		SW8270C-SIM		J
Pyrene	1	0.12	0.48	0.30	ug/L	i	SW8270C-SIM		J

Surrogates:	Control Limits	% Recovery	Qual.	Method	Prep Method
1-Bromo-4-chlorobenzene	75 - 119	98		SW8021B	SW5030B
Decafluorobiphenyl	21 - 122	59		SW8270C-SIM	SW3510C

i The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

U The compound was analyzed for but not detected.

J DOH certification #E82574 (AEL-JAX) (FL NELAC certification)

Advanced Environmental Laboratories, Inc.

Analytical Report

Client: URS

Report No.: J068559

Project Name: Cecil Field-Bldg 271

Date/Time Received: 11/20/06 13:00

Lab Code: J068559-05

Date/Time Sampled: 11/18/06 14:55

Client Sample ID: 5

Shipping Method: Client drop off

Site: EQUIPMENT BLANK

Sampled By: Robert Burns

Matrix: Water

Sampling Method: G

BTEX/MTBE

Analytes:	Dilution	Adjusted MDL	Adjusted PQL	Results	Units	Qualifier(s)	Method	Parameter Comment	Lab
Benzene	1	0.21	0.84	0.21	ug/L	U	SW8021B		J
Ethylbenzene	1	0.17	0.68	0.17	ug/L	U	SW8021B		J
m&p-Xylenes	1	0.40	1.6	0.40	ug/L	U	SW8021B		J
Methyl-tert-butyl Ether	1	0.35	1.4	0.35	ug/L	U	SW8021B		J
o-Xylene	1	0.23	0.92	0.23	ug/L	U	SW8021B		J
Toluene	1	0.23	0.92	0.23	ug/L	U	SW8021B		J

Polynuclear Aromatic Hydrocarbons

Analytes:	Dilution	Adjusted MDL	Adjusted PQL	Results	Units	Qualifier(s)	Method	Parameter Comment	Lab
1-Methylnaphthalene	1	0.12	0.49	0.12	ug/L	U	AEL SOP SVOC-006: 2-25-03		J
2-Methylnaphthalene	1	0.18	0.71	0.18	ug/L	U	SW8270C-SIM		J
Acenaphthene	1	0.13	0.51	0.13	ug/L	U	SW8270C-SIM		J
Acenaphthylene	1	0.13	0.51	0.13	ug/L	U	SW8270C-SIM		J
Anthracene	1	0.080	0.32	0.080	ug/L	U	SW8270C-SIM		J
Benzo(a)anthracene	1	0.029	0.12	0.029	ug/L	U	SW8270C-SIM		J
Benzo(a)pyrene	1	0.023	0.092	0.023	ug/L	U	SW8270C-SIM		J
Benzo(b)fluoranthene	1	0.025	0.098	0.025	ug/L	U	SW8270C-SIM		J
Benzo(g,h,i)perylene	1	0.092	0.37	0.092	ug/L	U	SW8270C-SIM		J
Benzo(k)fluoranthene	1	0.082	0.33	0.082	ug/L	U	SW8270C-SIM		J
Chrysene	1	0.060	0.24	0.060	ug/L	U	SW8270C-SIM		J
Dibenz(a,h)anthracene	1	0.047	0.19	0.047	ug/L	U	SW8270C-SIM		J
Fluoranthene	1	0.084	0.34	0.084	ug/L	U	SW8270C-SIM		J
Fluorene	1	0.10	0.42	0.10	ug/L	U	SW8270C-SIM		J
Indeno(1,2,3-cd)pyrene	1	0.039	0.16	0.039	ug/L	U	SW8270C-SIM		J
Naphthalene	1	0.15	0.61	0.15	ug/L	U	SW8270C-SIM		J
Phenanthrene	1	0.10	0.40	0.10	ug/L	U	SW8270C-SIM		J
Pyrene	1	0.12	0.48	0.12	ug/L	U	SW8270C-SIM		J

Surrogates:	Control Limits	% Recovery	Qual.	Method	Prep Method
1-Bromo-4-chlorobenzene	75 - 119	98		SW8021B	SW5030B
Decafluorobiphenyl	21 - 122	76		SW8270C-SIM	SW3510C

U The compound was analyzed for but not detected.

J DOH certification #E82574 (AEL-JAX) (FL NELAC certification)

Advanced Environmental Laboratories, Inc.

Analytical Report

Client: URS

Report No.: J068559

Project Name: Cecil Field-Bldg 271

Date/Time Received: 11/20/06 13:00

Sample Cross Reference Information

Lab Code: J068559-01

Site: CEF-271-09S

Client Sample Number: 1

Matrix: Water

Test Description	Analysis Method	Prep Method	Analytical Batch ID	Analysis Date/Time	Analyst	Prep Batch ID	Prep Date/Time
BTEX/MTBE	SW8021B	SW5030B	v112106d	11/21/06 16:43	RMB	v112106d	11/21/06 16:43:0
Polynuclear Aromatic Hydrocarbons	SW8270C-SIM	SW3510C	sv112106N	11/21/06 13:20	TMH	OE112106-SIM	11/21/06 08:00:0
Polynuclear Aromatic Hydrocarbons	AEL SOP SVOC-006: 2-25-03	SW3510C	sv112106N	11/21/06 13:20	TMH	OE112106-SIM	11/21/06 08:00:0

If the Analytical Batch ID and Prep Batch ID is null, the analysis was not performed by AEL, and the original report from the subcontracted laboratory will be provided containing this information.

Lab Code: J068559-02

Site: CEF-271-10S

Client Sample Number: 2

Matrix: Water

Test Description	Analysis Method	Prep Method	Analytical Batch ID	Analysis Date/Time	Analyst	Prep Batch ID	Prep Date/Time
BTEX/MTBE	SW8021B	SW5030B	v112106d	11/21/06 16:43	RMB	v112106d	11/21/06 16:43:0
Polynuclear Aromatic Hydrocarbons	SW8270C-SIM	SW3510C	sv112106N	11/21/06 13:20	TMH	OE112106-SIM	11/21/06 08:00:0
Polynuclear Aromatic Hydrocarbons	AEL SOP SVOC-006: 2-25-03	SW3510C	sv112106N	11/21/06 13:20	TMH	OE112106-SIM	11/21/06 08:00:0

If the Analytical Batch ID and Prep Batch ID is null, the analysis was not performed by AEL, and the original report from the subcontracted laboratory will be provided containing this information.

Lab Code: J068559-03

Site: CEF-271-12S

Client Sample Number: 3

Matrix: Water

Test Description	Analysis Method	Prep Method	Analytical Batch ID	Analysis Date/Time	Analyst	Prep Batch ID	Prep Date/Time
BTEX/MTBE	SW8021B	SW5030B	v112106d	11/21/06 16:43	RMB	v112106d	11/21/06 16:43:0
Polynuclear Aromatic Hydrocarbons	SW8270C-SIM	SW3510C	sv112106N	11/21/06 13:20	TMH	OE112106-SIM	11/21/06 08:00:0
Polynuclear Aromatic Hydrocarbons	AEL SOP SVOC-006: 2-25-03	SW3510C	sv112106N	11/21/06 13:20	TMH	OE112106-SIM	11/21/06 08:00:0

If the Analytical Batch ID and Prep Batch ID is null, the analysis was not performed by AEL, and the original report from the subcontracted laboratory will be provided containing this information.

Lab Code: J068559-04

Site: CEF-271-07S

Client Sample Number: 4

Matrix: Water

Test Description	Analysis Method	Prep Method	Analytical Batch ID	Analysis Date/Time	Analyst	Prep Batch ID	Prep Date/Time
BTEX/MTBE	SW8021B	SW5030B	v112106d	11/21/06 16:43	RMB	v112106d	11/21/06 16:43:0
Polynuclear Aromatic Hydrocarbons	SW8270C-SIM	SW3510C	sv112106N	11/21/06 13:20	TMH	OE112106-SIM	11/21/06 08:00:0
Polynuclear Aromatic Hydrocarbons	AEL SOP SVOC-006: 2-25-03	SW3510C	sv112106N	11/21/06 13:20	TMH	OE112106-SIM	11/21/06 08:00:0

If the Analytical Batch ID and Prep Batch ID is null, the analysis was not performed by AEL, and the original report from the subcontracted laboratory will be provided containing this information.

Lab Code: J068559-05

Site: EQUIPMENT BLANK

Client Sample Number: 5

Matrix: Water

Test Description	Analysis Method	Prep Method	Analytical Batch ID	Analysis Date/Time	Analyst	Prep Batch ID	Prep Date/Time
BTEX/MTBE	SW8021B	SW5030B	v112106d	11/21/06 16:43	RMB	v112106d	11/21/06 16:43:0
Polynuclear Aromatic Hydrocarbons	SW8270C-SIM	SW3510C	sv112106N	11/21/06 13:20	TMH	OE112106-SIM	11/21/06 08:00:0
Polynuclear Aromatic Hydrocarbons	AEL SOP SVOC-006: 2-25-03	SW3510C	sv112106N	11/21/06 13:20	TMH	OE112106-SIM	11/21/06 08:00:0

If the Analytical Batch ID and Prep Batch ID is null, the analysis was not performed by AEL, and the original report from the subcontracted laboratory will be provided containing this information.

Advanced Environmental Laboratories, Inc.

Analytical Report

Client: URS

Report No.: J068559

Project Name: Cecil Field-Bldg 271

Date/Time Received: 11/20/06 13:00

Quality Assurance Report

Method Blanks

Polynuclear Aromatic Hydrocarbons							
QCBatchID	Analyte	QC Sample Type	Method	MDL	Result	Units	Qualifier
sv112106N	1-Methylnaphthalene	Method Blank	AEL SOP SVOC-006: 2-25-03	0.032	0.12	ug/L	U
sv112106N	2-Methylnaphthalene	Method Blank	SW8270C-SIM	0.036	0.18	ug/L	U
sv112106N	Acenaphthene	Method Blank	SW8270C-SIM	0.025	0.13	ug/L	U
sv112106N	Acenaphthylene	Method Blank	SW8270C-SIM	0.028	0.13	ug/L	U
sv112106N	Anthracene	Method Blank	SW8270C-SIM	0.032	0.080	ug/L	U
sv112106N	Benzo(a)anthracene	Method Blank	SW8270C-SIM	0.029	0.029	ug/L	U
sv112106N	Benzo(a)pyrene	Method Blank	SW8270C-SIM	0.023	0.023	ug/L	U
sv112106N	Benzo(b)fluoranthene	Method Blank	SW8270C-SIM	0.025	0.025	ug/L	U
sv112106N	Benzo(g,h,i)perylene	Method Blank	SW8270C-SIM	0.048	0.092	ug/L	U
sv112106N	Benzo(k)fluoranthene	Method Blank	SW8270C-SIM	0.029	0.082	ug/L	U
sv112106N	Chrysene	Method Blank	SW8270C-SIM	0.023	0.060	ug/L	U
sv112106N	Dibenz(a,h)anthracene	Method Blank	SW8270C-SIM	0.047	0.047	ug/L	U
sv112106N	Fluoranthene	Method Blank	SW8270C-SIM	0.028	0.084	ug/L	U
sv112106N	Fluorene	Method Blank	SW8270C-SIM	0.023	0.10	ug/L	U
sv112106N	Indeno(1,2,3-cd)pyrene	Method Blank	SW8270C-SIM	0.039	0.039	ug/L	U
sv112106N	Naphthalene	Method Blank	SW8270C-SIM	0.025	0.15	ug/L	U
sv112106N	Phenanthrene	Method Blank	SW8270C-SIM	0.022	0.10	ug/L	U
sv112106N	Pyrene	Method Blank	SW8270C-SIM	0.028	0.12	ug/L	U

Surrogate(s)	Result	Units	% Recovery	Qualifier	Acceptance Limits
Decafluorobiphenyl		ug/L			21 - 122

BTEX/MTBE

QCBatchID	Analyte	QC Sample Type	Method	MDL	Result	Units	Qualifier
v112106d	Benzene	Method Blank	SW8021B	0.21	0.21	ug/L	U
v112106d	Ethylbenzene	Method Blank	SW8021B	0.17	0.17	ug/L	U
v112106d	m&p-Xylenes	Method Blank	SW8021B	0.40	0.40	ug/L	U
v112106d	Methyl-tert-butyl Ether	Method Blank	SW8021B	0.35	0.35	ug/L	U
v112106d	o-Xylene	Method Blank	SW8021B	0.23	0.23	ug/L	U
v112106d	Toluene	Method Blank	SW8021B	0.23	0.23	ug/L	U

Surrogate(s)	Result	Units	% Recovery	Qualifier	Acceptance Limits
1-Bromo-4-chlorobenzene	47	ug/L	94		75 - 119

Quality Assurance Qualifiers:

U The compound was analyzed for but not detected.

Definitions:

Water matrix refers to all aqueous matrices except drinking water, including but not limited to, wastewater, ground water, surface water, aqueous wastes and leach

Soil matrix refers to all non-aqueous matrices, including soils, solids, sludges, semi-solids, and non-aqueous waste samples

All results in mg/kg or % are reported in dry weight basis, unless notated otherwise. All results in mg/L are reported in wet weight basis.

MDL Method Detection Limit, without correction for dilution or moisture content

Adjusted Reporting Limit is the MDL accounting for all dilutions and moisture content cacluations.

PQL is defined to be 4 times the MDL, for all results qualified with a 'i' qualifier.

Sampling Method; G=Grab, P=Pump, C=Composite

The estimated measurements of uncertainty can be provided upon request

This is the last page of the analytical report.



Client: URS Corp

Project name: Cecil Field - Bldg 271

Date/Time Recvd: 11/20/06 1300

Log-In request number: 5068559

Received by: D.S

Completed by: D.S

Cooler/Shipping Information:

Courier: AEL Client UPS Blue Streak FedEx Other (describe): _____

Type: Cooler Box Other (describe) _____

Cooler temperature: Identify the cooler and document the temperature blank or ice water measurement

Cooler ID					
Temp (°C)	<u>a</u>				
Temp taken from	<input type="checkbox"/> Temp blank <input checked="" type="checkbox"/> Sample bottle	<input type="checkbox"/> Temp blank <input type="checkbox"/> Sample bottle			
Temp measured with	<input checked="" type="checkbox"/> IR gun <input type="checkbox"/> Thermometer (enter ID):	<input type="checkbox"/> IR gun <input type="checkbox"/> Thermometer (enter ID):	<input type="checkbox"/> IR gun <input type="checkbox"/> Thermometer (enter ID):	<input type="checkbox"/> IR gun <input type="checkbox"/> Thermometer (enter ID):	<input type="checkbox"/> IR gun <input type="checkbox"/> Thermometer (enter ID):

Other Information:

Any "NO" responses or discrepancies should be explained in the "Comments" section below.

CHECKLIST

	YES	NO	NA
1. Were custody seals on shipping container(s) intact?			-
2. Were custody papers properly included with samples?	-		
3. Were custody papers properly filled out (ink, signed, match labels)?	-		
4. Did all bottles arrive in good condition (unbroken)?	-		
5. Were all bottle labels complete (sample #, date, signed, analysis, preservatives)?	-		
6. Did the sample labels agree with the chain of custody?	-		
7. Were correct bottles used for the tests indicated?	-		
8. Were proper sample preservation techniques indicated on the label?	-		
9. Were samples received within holding times?	-		
10. Were all VOA vials checked for the presence of air bubbles?	-		
11. Were there air bubbles present in the VOA vials?		-	
12. Were samples in direct contact with wet ice? If "No," check one: <input type="checkbox"/> NO ICE <input type="checkbox"/> BLUE ICE	-		
13. Was the cooler temperature less than 6°C?	-		
14. Were sample pHs checked and recorded by Sample control? <i>NOTE: VOA samples are checked by laboratory analysts.</i>		-	
15. Were the sample containers provided by AEL?	-		
16. Were samples accepted into the laboratory?	-		

Comments:



Advanced Environmental Laboratories, Inc.

CHAIN OF CUSTODY RECORD

LAB NU

J068559

- Jacksonville: 6601 Southpoint Parkway, Jacksonville, FL 32216 • (904) 363-9350 Fax (904) 363-9354
- Tampa: 9610 Princess Palm Avenue, Tampa, FL 33619 • (813) 630-9616 Fax (813) 630-4327
- Gainesville: 6821 SW Archer Road, Gainesville, FL 32608 • (352) 367-1500 Fax (352) 367-0050
- Orlando: 528 S. North Lake Blvd., Suite 1016, Altamonte Springs, FL 32701 • (407) 937-1594 Fax (407) 937-1597

CLIENT NAME: URS Corp		PROJECT NAME: Cecil Field - BLDG 271		BOTTLE SIZE & TYPE 3x4ml G 1L Amber	A R E A Q U A L I T Y I N S I D E D	L A B N U M B E R
ADDRESS: 8761 Perimeter Park Blvd Suite 201		P.O. NUMBER / PROJECT NUMBER:				
Jacksonville, FL 32216		PROJECT LOCATION:				
PHONE: 904/645-6233	FAX: 904/645-6243	CONTACT: William Kelly				
TURN AROUND TIME: <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> RUSH _____		REMARKS / SPECIAL INSTRUCTIONS: ACL PRELOG #Q0013				

WW= waste water SW=surface water GW=ground water DW=drinking water OIL A=air SO=soil SL=sludge

SAMPLE ID	SAMPLE DESCRIPTION	Grab Composite	SAMPLING		MATRIX	NO. CONT.	Preserv	H	T							
			DATE	TIME												
	CEF-271-09S	G	11-18-06	1329	GW	4										
	CEF-271-10S		11-18-06	1415	GW	4										
	CEF-271-12S		11-18-06	1533	GW	4										
	CEF-211-07S		11-18-06	1659	GW	6										
	Equipment Blank		11-18-06	1455	GW	4										

I = Ice H = (HCl) S = (H ₂ SO ₄) N = (HNO ₃) T = (Sodium Thiosulfate)				Relinquished by:		Date: 11/20/06	Time: 0930	Received by:		Date: 11/20/06	Time: 1245
Shipment Out: / /	Method Via: _____	Sample Kit RB _____	Cooler # _____	1		11/20/06	0930		11/20/06	1245	
Ret: / /	Via: _____	AB _____	D/T: _____	2		11/20/06	1300		11/20/06	1300	
		Trip Bl. <input type="checkbox"/>	<input type="checkbox"/>	3							
				4							

Received on ice: yes no QC sent received