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THIRD QUARTER 2008 LONG TERM MONITORING STATUS REPORT FOR NORTH FUEL FARM NAS CECIL FIELD FL

12/31/2008

SOLUTIONS-IES INC

THIRD QUARTER 2008
LONG-TERM MONITORING
STATUS REPORT

NORTH FUEL FARM
FORMER NAS CECIL FIELD
JACKSONVILLE, FL

CONTRACT NO. N62467-05-G-0193
CONTRACT TASK ORDER NO. 0003

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DECEMBER 31, 2008

Solutions-IES
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We, the undersigned, do hereby affirm that the information contained in this report is accurate and correct to the best of our knowledge and belief.

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1.0 INTRODUCTION

Solutions-IES, Inc. (Solutions-IES) has been contracted by the Navy (NAVFAC Southeast), to provide long-term groundwater monitoring and operation and maintenance (O&M) services at North Fuel Farm (site), Former Naval Air Station (NAS) Cecil Field, Jacksonville, Florida, under Basic Ordering Agreement (BOA) Contract Number N62467-05-G-0193, Contract Task Order Number 0003. Under this contract, Solutions-IES performs quarterly groundwater monitoring. Solutions-IES is also contracted to perform O&M of the air sparge (AS) system but has not yet taken-over this task from CH2MHILL. This Third Quarter Monitoring Status Report details the activities performed at the site from July through October 2008.

1.1 SITE LOCATION AND DESCRIPTION

The site is located at the northwest corner of Aviation Avenue and Loop Road at NAS Cecil Field. A site map is included as **Figure 1**.

1.2 SITE HISTORY

The site history information below was obtained from the November 2007, CH2MHILL Constructors, Inc., Operations and Monitoring Status Report.

The site formerly contained six 595,000-gallon JP-5 jet fuel storage tanks. Approximately 900,000-gallons of fuel was released from these tanks in 1999. All six storage tanks, along with the earthen containment mound and associated impacted soil, were removed from the site in 2000 and 2001.

Results of previous investigations conducted to determine the extent of impact from the petroleum release indicate groundwater contamination above the Florida Department of Environmental Protection (FDEP) Groundwater Cleanup Target Levels (GCTLs) for the following constituents: benzene, ethylbenzene, toluene, xylenes, naphthalene, 1-methylnaphthalene and 2-methylnaphthalene. The extent of petroleum contamination extends to the water table from depths of approximately 5 feet below ground surface (ft bgs) to approximately 110 ft bgs. It was estimated that approximately 862,000 square feet were impacted with contaminants at concentrations exceeding the GCTLs.

A combination of remediation techniques was chosen for the Site, including AS, biosparge (BS) and soil vapor extraction (SVE). The AS system was installed in areas where benzene concentrations exceeded 1,000 micrograms per liter (μg/L). Eighty-two vertical AS wells were installed in these areas. The BS system was installed in areas where benzene concentrations ranged from 100 μg/L to 1,000 μg/L. One hundred twenty-five vertical BS wells were installed in these areas. The SVE system was installed in the footprint of the AS system to capture vapor released as a result of the AS system operation. Ten horizontal SVE collection lines were installed at a depth of approximately 3 ft bgs in these areas.

Full-scale operation of these remediation systems began in mid-July 2005. Because of the high water table in the eastern part of the site, and subsequent heavy entrainment, the SVE system was shut down on November 9, 2005 with FDEP approval. The AS system continues to operate at the site but was not operating during the October 2008 sampling event.

2.0 GROUNDWATER MONITORING SUMMARY

Currently, 16 monitoring wells are sampled at the site. They are screened at depths ranging between approximately 5 and 115 ft bgs. Each monitoring well is sampled on a quarterly basis.
During the third quarter monitoring event, water levels were recorded and samples were collected from the wells listed below for analysis of volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), total recoverable petroleum hydrocarbons (TRPH), natural attenuation (NA) parameters and field parameters as detailed in the following tables. Locations of the wells at this site are illustrated on **Figure 2**.

Monitoring Well	Parameters
CEF-372-13R	VOC, PAH, TRPH
CEF-76-49S	VOC, PAH, TRPH, NA
CEF-76-50I	VOC, PAH, TRPH
CEF-76-57S	VOC, PAH, TRPH, NA
CEF-76-61I	VOC, PAH, TRPH, NA
CEF-76-70I	VOC, PAH, TRPH
CEF-76-93S	VOC, PAH, TRPH
CEF-76-94S	VOC, PAH, TRPH
CEF-76-95S	VOC, PAH, TRPH, NA
CEF-76-98D	VOC, PAH, TRPH
CEF-76-99D	VOC, PAH, TRPH, NA
CEF-76-100D	VOC, PAH, TRPH, NA

CEF-76-104D	VOC, PAH, TRPH, NA
CEF-76-110D	VOC, PAH, TRPH
CEF-76-113S	VOC, PAH, TRPH
CEF-76-116D	VOC, PAH, TRPH, NA

Analysis	**Constituents**	**Analytical Method**
VOCs		8260B
PAHs		8310
TRPH		FL PRO
NA Parameters	Sulfide	4500S
	Sulfate	300
	TOC	5310B
	Dissolved Oxygen	CHEMetrics® Kit/ Field Meter
	Inorganic Carbon	5310B
Field Parameters	Temperature pH Conductivity Turbidity ORP	Direct-reading meter

2.1 WATER LEVEL MEASUREMENTS

Depth-to-groundwater measurements were recorded on October 8, 2008 at the site. Historical groundwater elevation data can be found in **Table 1**.

Well ID	**Date**	**Top of Casing Elevation (ft AMSL)**	**Depth to Water (ft below TOC)**	**Water Level Elevation (ft AMSL)**
372-13R	10/8/2008	81.25	4.84	76.41
76-49S	10/8/2008	78.14	4.72	73.42
76-50I	10/8/2008	78.17	4.55	73.62
76-57S	10/8/2008	77.74	4.21	73.53
76-61I	10/8/2008	81.12	7.61	73.51
76-70I	10/8/2008	78.21	4.41	73.80
76-93S	10/8/2008	81.59	6.48	75.11
76-94S	10/8/2008	81.59	7.40	74.19
76-95S	10/8/2008	80.88	6.45	74.43
76-98D	10/8/2008	81.39	8.28	73.11
76-99D	10/8/2008	81.69	8.72	72.97
76-100D	10/8/2008	80.15	7.33	72.82
76-104D	10/8/2008	79.08	7.10	71.98

76-110D	10/8/2008	82.51	10.20	72.31
76-113S	10/8/2008	81.22	7.30	73.92
76-116D	10/8/2008	82.83	10.40	72.43

Well information obtained from CH2MHILL Constructors, Inc.
Elevation is referenced to National Geodetic Vertical Datum 1929 (NGVD 1929)
TOC – top of casing
AMSL – above mean sea level

No potentionmetric maps were prepared for this sampling event because of the small amount of data collected compared to the relative area over which the wells are located. However, based on historical information obtained from the CH2MHILL Operation and Monitoring Status Report, groundwater flow at the site is in a southeasterly direction.

No free product was detected in any of the 16 monitoring wells during the October 2008 sampling event. Free product has not been encountered at this site, based on historical information, dating back to July 2005.

2.2 GROUNDWATER SAMPLING

2.2.1 Methodology

Groundwater sampling was conducted at the NFF site on October 9 and 10, 2008. Sixteen monitoring wells (CEF-372-13R, CEF-76-49S, CEF-76-50I, CEF-76-57S, CEF-76-61I, CEF-76-70I, CEF-76-93S, CEF-76-94S, CEF-76-95S, CEF-76-98D, CEF-76-99D, CEF-76-100D, CEF-76-104D, CEF-76-110D, CEF-76-113S and CEF-76-116D) were purged and sampled using low-flow methodology.

Wells were purged immediately before sampling using a low-flow peristaltic pump, at an approximate rate equal to or less than the groundwater recharge rate, until field parameters (temperature, pH, conductivity, turbidity and dissolved oxygen [DO]) stabilized. Water levels in the wells were continuously monitored to maintain minimal drawdown.

Samples were collected for field analysis of DO using CHEMetrics® field test kits and field meters. Results of field measurments are summarized on **Table 2**. Copies of the groundwater sampling logs, including all field parameter measurements, are provided in **Appendix A**.

Groundwater sampling was conducted in general accordance with applicable state and local guidelines, and the Solutions-IES Work Plan (September 29, 2008). All samples collected were stored on ice and delivered to Accutest Laboratory, a Florida-certified and National Environmental Laboratory Accreditation Program

certified laboratory located in Orlando, Florida, via courier, under Chain-of-Custody procedures.

2.2.2 Laboratory Analyses

Groundwater samples collected at the site were analyzed for the following:

- VOCs by EPA Method 8260B
- PAHs by EPA Method 8310
- TRPH by FL PRO
- Sulfate by EPA Method 300.0
- Sulfide by EPA Method 4500S
- Inorganic Carbon by EPA Method 5310B

A Level II data report was provided by the laboratory and can be found in **Appendix B**.

2.3 INVESTIGATION DERIVED WASTE (IDW)

Purge water, wash water and rinse water were collected in 5-gallon containers and transferred to 55-gallon drums, segregated by historically hazardous wells and historically non-hazardous wells. IDW from wells CEF-76-50I, CEF-76-70I, CEF-76-110D and CEF-76-113S were transferred to Drum #2 (hazardous). IDW from the 12 remaining wells was transferred to Drum #1 (non-hazardous). The drums were staged in the IDW Storage Building (Building 536). The NAS Jacksonville Public Works Department (PWD-JAX) was notified on October 13, 2008 that the drums were being kept in the building. The hazardous and non-hazardous data packages were forwarded to PWD-JAX on November 14, 2008.

3.0 AS SYSTEM PERFORMANCE SUMMARY

3.1 SYSTEM OPERATION

The AS system was not operational during the October 2008 site event. According to CH2MHILL personnel, several repairs and modifications need to be completed before Solutions-IES will take over O&M of the system.

4.0 SAMPLING AND ANALYTICAL RESULTS

4.1 DATA VALIDATION

Accutest data analysts validated all data according to laboratory standard operating procedures (SOPs). None of the data were rejected as a result of the data validation. However, as indicated in the laboratory case narrative, several QC samples were outside control limits for each of the methods run by the lab. Most QC issues were noted as matrix interference and sample non-homogeneity. Additionally, methylene chloride was found in samples CEF-76-70I and CEF-76-110D. This was explained as suspected laboratory contamination. The validation process also resulted in several data qualifiers. These are shown with the analyte concentrations in **Table 3**.

A limited data validation was also performed by Solutions-IES. The data validation evaluated data completeness, holding time compliance, laboratory blank contamination and detection limits. No issues were identified.

4.2 GROUNDWATER RESULTS

Eleven of the 16 wells sampled contained concentrations of constituents above the GCTLs this reporting period: CEF-76-49S, CEF-76-50I, CEF-76-57S, CEF-76-61I, CEF-76-70I, CEF-76-93S, CEF-76-98D, CEF-76-104D, CEF-76-110D, CEF-76-113S and CEF-76-116D. The constituents included benzene, ethylbenzene, xylenes, isopropylbenzene, methylene chloride, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene and naphthalene. Three wells (CEF-76-70I, CEF-76-110D and CEF-76-113S) had constituents at concentrations above the Natural Attenuation Default Source Concentrations (NADSC). Locations and constituent concentrations in excess of the GCTLs are shown on **Figure 3**.

The following parameters were detected in the wells identified below during the October 2008 sampling event:

- Benzene was detected above the GCTL (1 μg/L) in wells CEF-76-49S, CEF-76-50I, CEF-76-57S, CEF-76-61I, CEF-76-98D, CEF-76-104D and CEF-76-116D; and above the NADSC (100 μg/L) in wells CEF-76-70I, CEF-76-110D and CEF-76-113S.
- Ethylbenzene was detected above the NADSC (300 μg/L) in well CEF-76-113S.

- Xylenes were detected above the GCTL (20 μg/L) in well CEF-76-70I and above the NADSC (200 μg/L) in well CEF-76-113S.
- Isopropylbenzene was above the GCTL (0.8 μg/L) in wells CEF-76-61I, CEF-76-93S and CEF-76-110D; and was detected above the NADSC (8 μg/L) in wells CEF-76-70I and CEF-76-113S.
- Methylene chloride was detected above the GCTL (5 μg/L) in wells CEF-76-70I and CEF-76-110D, but both values had qualifiers that indicated suspected laboratory contamination.
- 1,2,4-trimethylbenzene was detected above the GCTL (10 μg/L) in wells CEF-76-61I and CEF-76-110D; and above the NADSC (100 μg/L) in wells CEF-76-70I and CEF-76-113S.
- 1,3,5-trimethylbenzene was detected above the GCTL (10 μg/L) in wells CEF-76-70I and CEF-76-113S.
- Naphthalene (Method 8260) concentrations were detected above the GCTL (14 μg/L) in wells CEF-76-61I and CEF-76-70I. The naphthalene (Method 8270) concentration was also detected above the GCTL in wells CEF-76-113S and CEF-76-70I.
- Sulfate concentrations exceeded the MCL (250 mg/L) in wells CEF-76-49S, CEF-76-57S, CEF-76-61I, CEF-76-99D, CEF-76-100D, CEF-76-104D and CEF-76-116D; and above the NADSC (2,500 mg/L) in wells CEF-76-49S, CEF-76-61I, CEF-76-99D, CEF-76-100D and CEF-76-116D (**Table 2**).

A summary of historical sampling results can be found in **Table 3**. The October 2008 laboratory report is included in **Appendix B**.

Natural attenuation parameters indicated that combinations of aerobic and anaerobic conditions appear to be driving biological processes at the site to reduce BTEX concentrations. In the absence of oxygen, naturally occurring sulfate may also serve as an electron acceptor and contribute to contaminant reduction. Though pH values are low (<4.0) in several wells, and would not typically be considered conducive for bioactivity, it does not preclude biodegradation of BTEX constituents by acid tolerant bacteria, yeasts or fungi that may thrive in these conditions. Natural attenuation parameter results from field and laboratory analyses can be found in **Table 2**.

5.0 CONCLUSIONS

Historical water level data suggests that groundwater at this site flows to the southeast. No free product was detected in any of the wells sampled during the October 2008 sampling event.

Results from the October 2008 sampling event indicate that benzene was the constituent detected above the

GCTL in 10 of the 16 wells (**Figure 3)**. **Figures 4, 5** and **6** show the concentrations of benzene in the shallow, intermediate and deep wells respectively with historical GCTL exceedances.

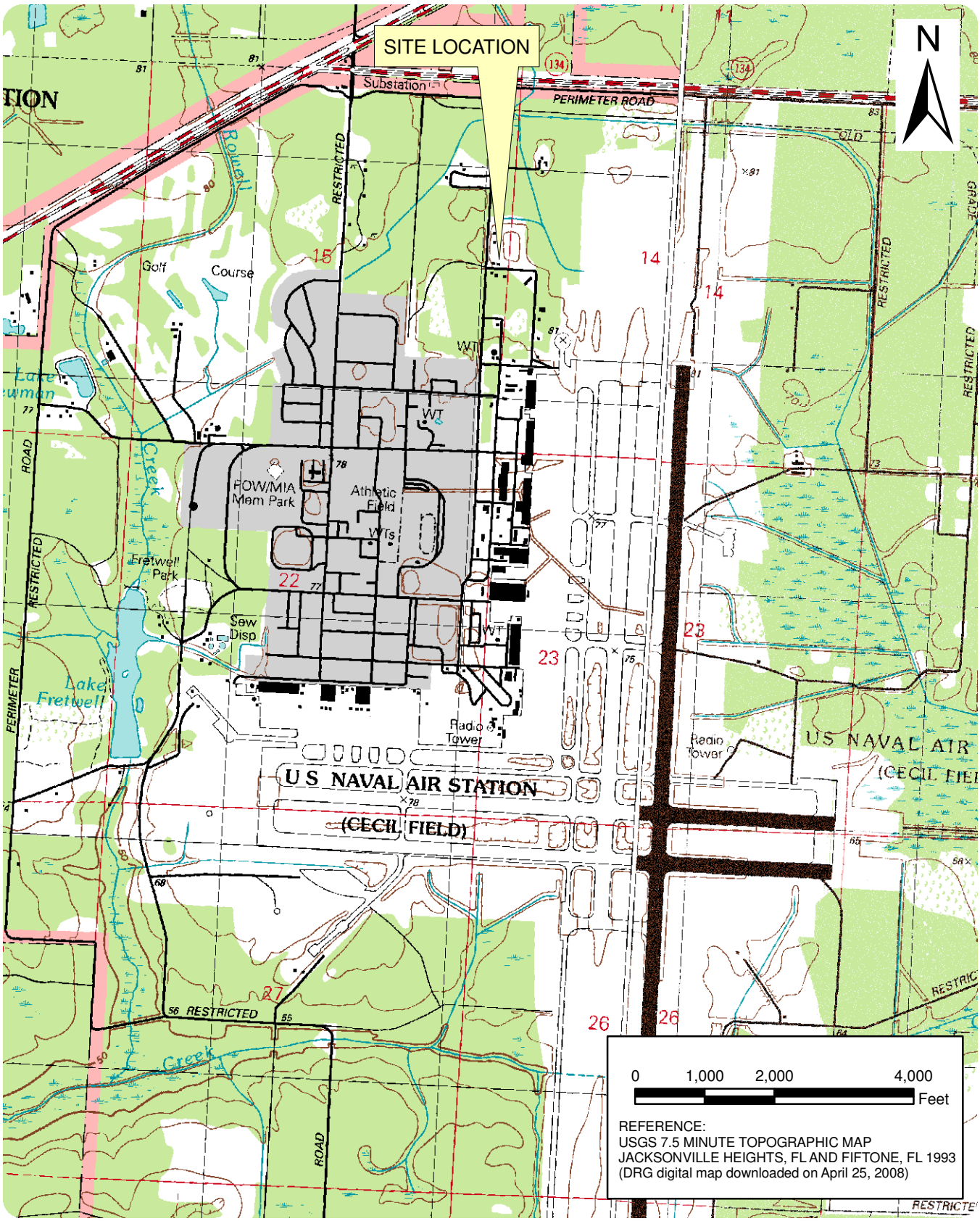
The ethylbenzene concentration has decreased in well CEF-76-113S and slightly increased in well CEF-76-93S since the last sampling event. **Figure 7** illustrates the ethylbenzene concentrations in both wells. This constituent has been detected below the GCTL for 2 consecutive sampling events in well CEF-76-93S. The concentration in well CEF-76-113S has decreased since October 2007, but remains above the NADSC (300 μg/L).

The highest concentration of xylenes has historically been detected in well CEF-76-113S. This well still contains the highest concentration and continues to exceed the NADSC (200 μg/L). The concentration in well CEF-76-70I was below the NADSC value for the first time since sampling began in 2005. However, xylenes still exceeded the GCTL in this well. Wells CEF-76-93S and CEF-76-110D have both exhibited concentrations below the GCTL for two consecutive sampling events. **Figure 8** illustrates historical xylene concentrations in wells exhibiting GCTL exceedances since 2006.

Isopropylbenzene concentrations remain above the GCTL in five wells at NFF. Two of those wells, CEF-76-70I and CEF-76-113S had concentrations above the NADSC this quarter. Concentrations in all four wells have decreased since the last sampling event except in well CEF-76-110D. This well has not exceeded the regulatory limit since November 2005. **Figure 9** exhibits historical isopropylbenzene concentrations in wells CEF-76-61I, CEF-76-70I, CEF-76-93S and CEF-76-113S.

Naphthalene via Method 8260 was detected above the GCTL in only three wells this quarter, CEF-76-61I, CEF-76-70I and CEF-76-113S. Well CEF-76-93S was below the GCTL for the third consecutive quarter. **Figure 10** shows historical naphthalene concentrations in these wells. Well CEF-76-113S also exceeded the GCTL via Method 8270.

FIGURES



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SITE LOCATION MAP
NORTH FUEL FARM - NAS CECIL FIELD
JACKSONVILLE, FL

FIGURE:
1

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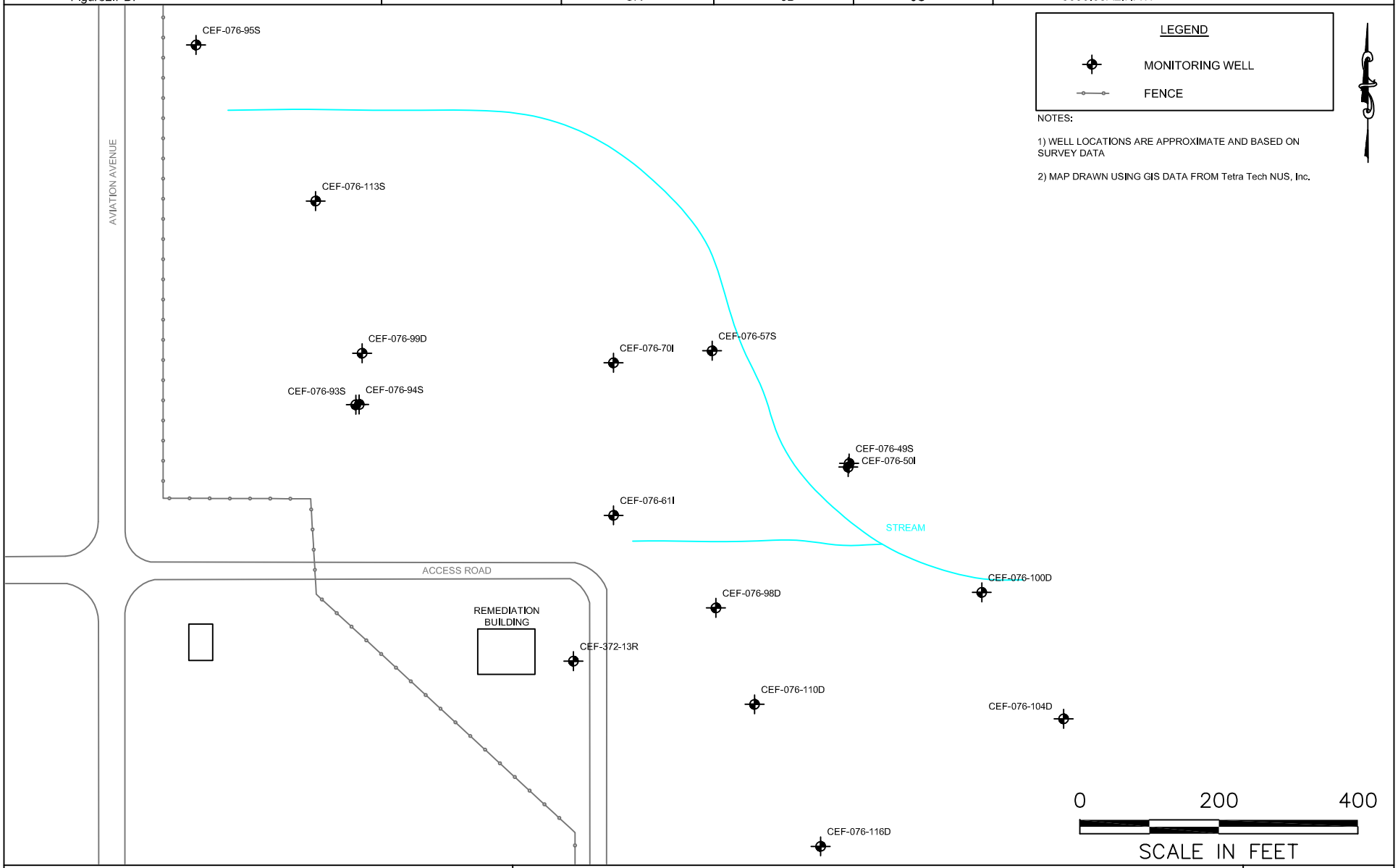

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WELL LOCATION MAP
NORTH FUEL FARM - NAS CECIL FIELD
JACKSONVILLE, FL
OCTOBER 2008

FIGURE:
2

FILE	DATE	PROJECT MANAGER	CHECKED BY	DRAFTER	PROJECT NUMBER
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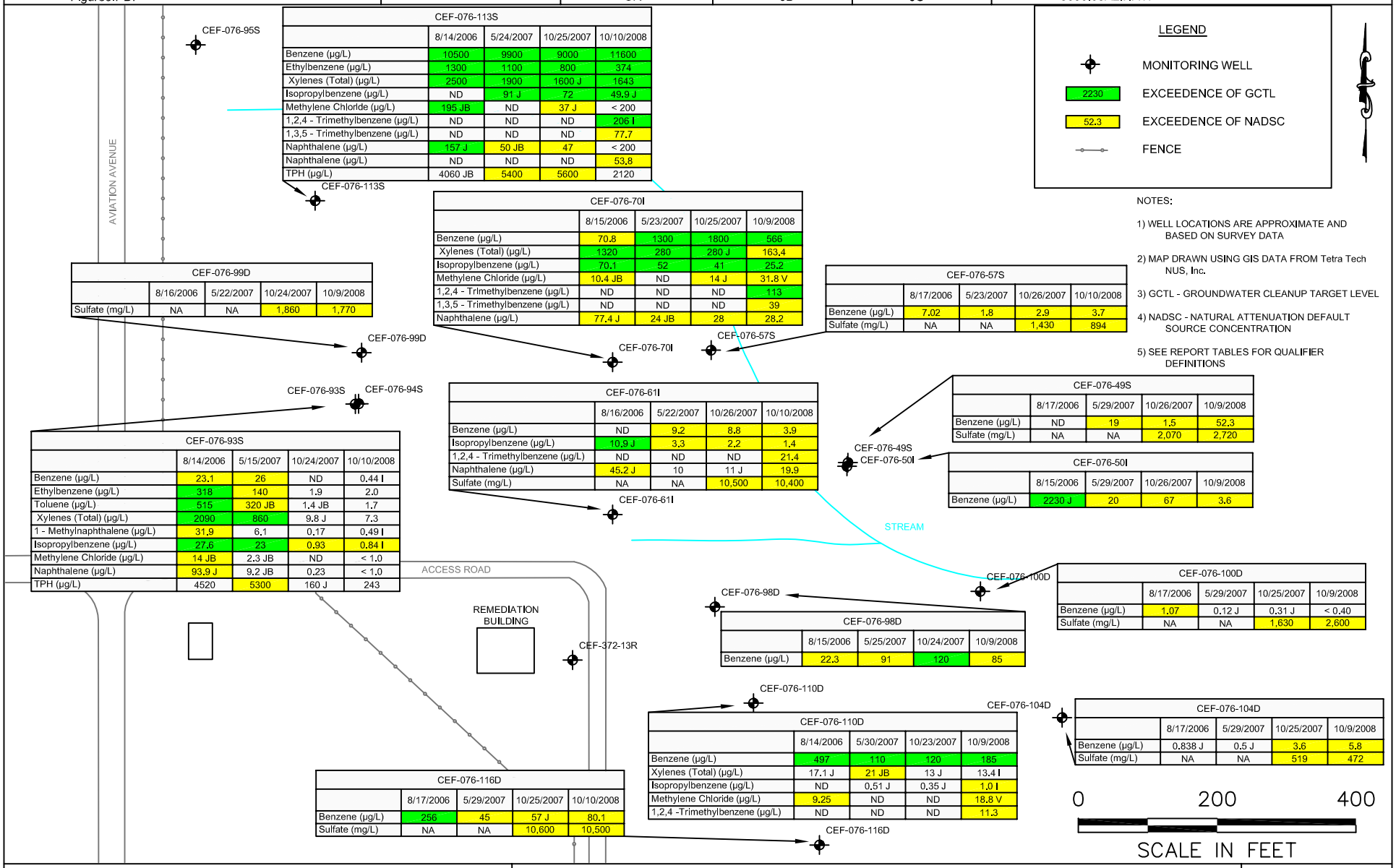

NOTES:

1) WELL LOCATIONS ARE APPROXIMATE AND BASED ON SURVEY DATA

2) MAP DRAWN USING GIS DATA FROM Tetra Tech NUS, Inc.

3) GCTL - GROUNDWATER CLEANUP TARGET LEVEL

4) NADSC - NATURAL ATTENUATION DEFAULT SOURCE CONCENTRATION

5) SEE REPORT TABLES FOR QUALIFIER DEFINITIONS

CEF-076-113S

	8/14/2006	5/24/2007	10/25/2007	10/10/2008
Benzene (µg/L)	10500	9900	9000	11600
Ethylbenzene (µg/L)	1300	1100	800	374
Xylenes (Total) (µg/L)	2500	1900	1600 J	1643
Isopropylbenzene (µg/L)	ND	91 J	72	49.9 J
Methylene Chloride (µg/L)	195 JB	ND	37 J	< 200
1,2,4 - Trimethylbenzene (µg/L)	ND	ND	ND	206 I
1,3,5 - Trimethylbenzene (µg/L)	ND	ND	ND	77.7
Naphthalene (µg/L)	157 J	50 JB	47	< 200
Naphthalene (µg/L)	ND	ND	ND	53.8
TPH (µg/L)	4060 JB	5400	5600	2120

CEF-076-70I

	8/15/2006	5/23/2007	10/25/2007	10/9/2008
Benzene (µg/L)	70.8	1300	1800	566
Xylenes (Total) (µg/L)	1320	280	280 J	163.4
Isopropylbenzene (µg/L)	70.1	52	41	25.2
Methylene Chloride (µg/L)	10.4 JB	ND	14 J	31.8 V
1,2,4 - Trimethylbenzene (µg/L)	ND	ND	ND	113
1,3,5 - Trimethylbenzene (µg/L)	ND	ND	ND	39
Naphthalene (µg/L)	77.4 J	24 JB	28	28.2

CEF-076-99D

	8/16/2006	5/22/2007	10/24/2007	10/9/2008
Sulfate (mg/L)	NA	NA	1,860	1,770

CEF-076-57S

	8/17/2006	5/23/2007	10/26/2007	10/10/2008
Benzene (µg/L)	7.02	1.8	2.9	3.7
Sulfate (mg/L)	NA	NA	1,430	894

CEF-076-61I

	8/16/2006	5/22/2007	10/26/2007	10/10/2008
Benzene (µg/L)	ND	9.2	8.8	3.9
Isopropylbenzene (µg/L)	10.9 J	3.3	2.2	1.4
1,2,4 - Trimethylbenzene (µg/L)	ND	ND	ND	21.4
Naphthalene (µg/L)	45.2 J	10	11 J	19.9
Sulfate (mg/L)	NA	NA	10,500	10,400

CEF-076-93S

	8/14/2006	5/15/2007	10/24/2007	10/10/2008
Benzene (µg/L)	23.1	26	ND	0.44 I
Ethylbenzene (µg/L)	318	140	1.9	2.0
Toluene (µg/L)	515	320 JB	1.4 JB	1.7
Xylenes (Total) (µg/L)	2090	860	9.8 J	7.3
1 - Methylnaphthalene (µg/L)	31.9	6.1	0.17	0.49 I
Isopropylbenzene (µg/L)	27.6	23	0.93	0.84 I
Methylene Chloride (µg/L)	14 JB	2.3 JB	ND	< 1.0
Naphthalene (µg/L)	93.9 J	9.2 JB	0.23	< 1.0
TPH (µg/L)	4520	5300	160 J	243

CEF-076-49S

	8/17/2006	5/29/2007	10/26/2007	10/9/2008
Benzene (µg/L)	ND	19	1.5	52.3
Sulfate (mg/L)	NA	NA	2,070	2,720

CEF-076-50I

	8/15/2006	5/29/2007	10/26/2007	10/9/2008
Benzene (µg/L)	2230 J	20	67	3.6

CEF-076-100D

	8/17/2006	5/29/2007	10/25/2007	10/9/2008
Benzene (µg/L)	1.07	0.12 J	0.31 J	< 0.40
Sulfate (mg/L)	NA	NA	1,630	2,600

CEF-076-98D

	8/15/2006	5/25/2007	10/24/2007	10/9/2008
Benzene (µg/L)	22.3	91	120	85

CEF-076-110D

	8/14/2006	5/30/2007	10/23/2007	10/9/2008
Benzene (µg/L)	497	110	120	185
Xylenes (Total) (µg/L)	17.1 J	21 JB	13 J	13.4 I
Isopropylbenzene (µg/L)	ND	0.51 J	0.35 J	1.0 I
Methylene Chloride (µg/L)	9.25	ND	ND	18.8 V
1,2,4 -Trimethylbenzene (µg/L)	ND	ND	ND	11.3

CEF-076-104D

	8/17/2006	5/29/2007	10/25/2007	10/9/2008
Benzene (µg/L)	0.838 J	0.5 J	3.6	5.8
Sulfate (mg/L)	NA	NA	519	472

CEF-076-116D

	8/17/2006	5/29/2007	10/25/2007	10/10/2008
Benzene (µg/L)	256	45	57 J	80.1
Sulfate (mg/L)	NA	NA	10,600	10,500

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CONCENTRATION MAP
NORTH FUEL FARM - NAS CECIL FIELD
JACKSONVILLE, FL
OCTOBER 2008

FIGURE:

3

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FIGURE 4
Historical Benzene Concentrations in Shallow Wells

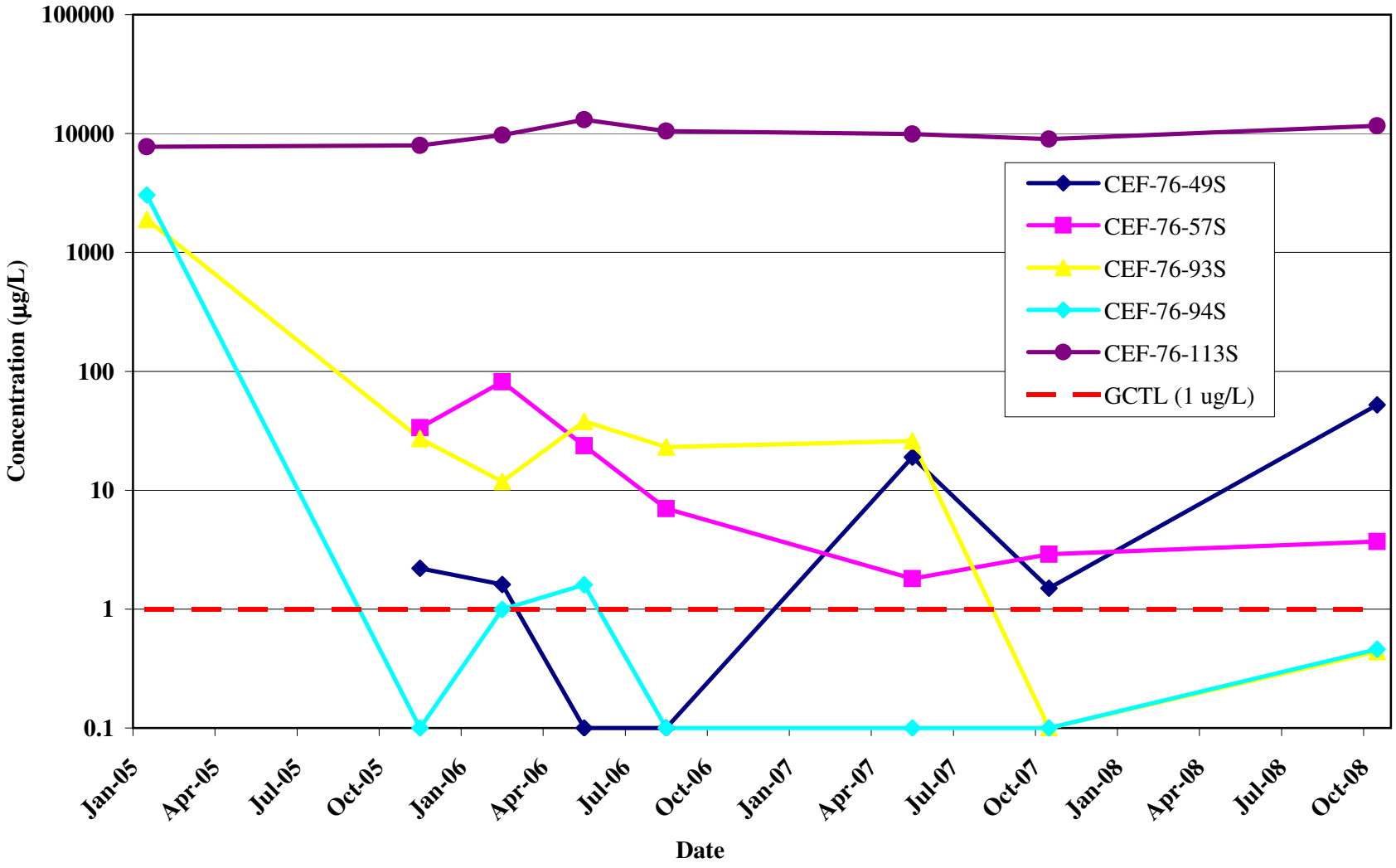


Figure 5
Historical Benzene Concentrations in Intermediate Wells

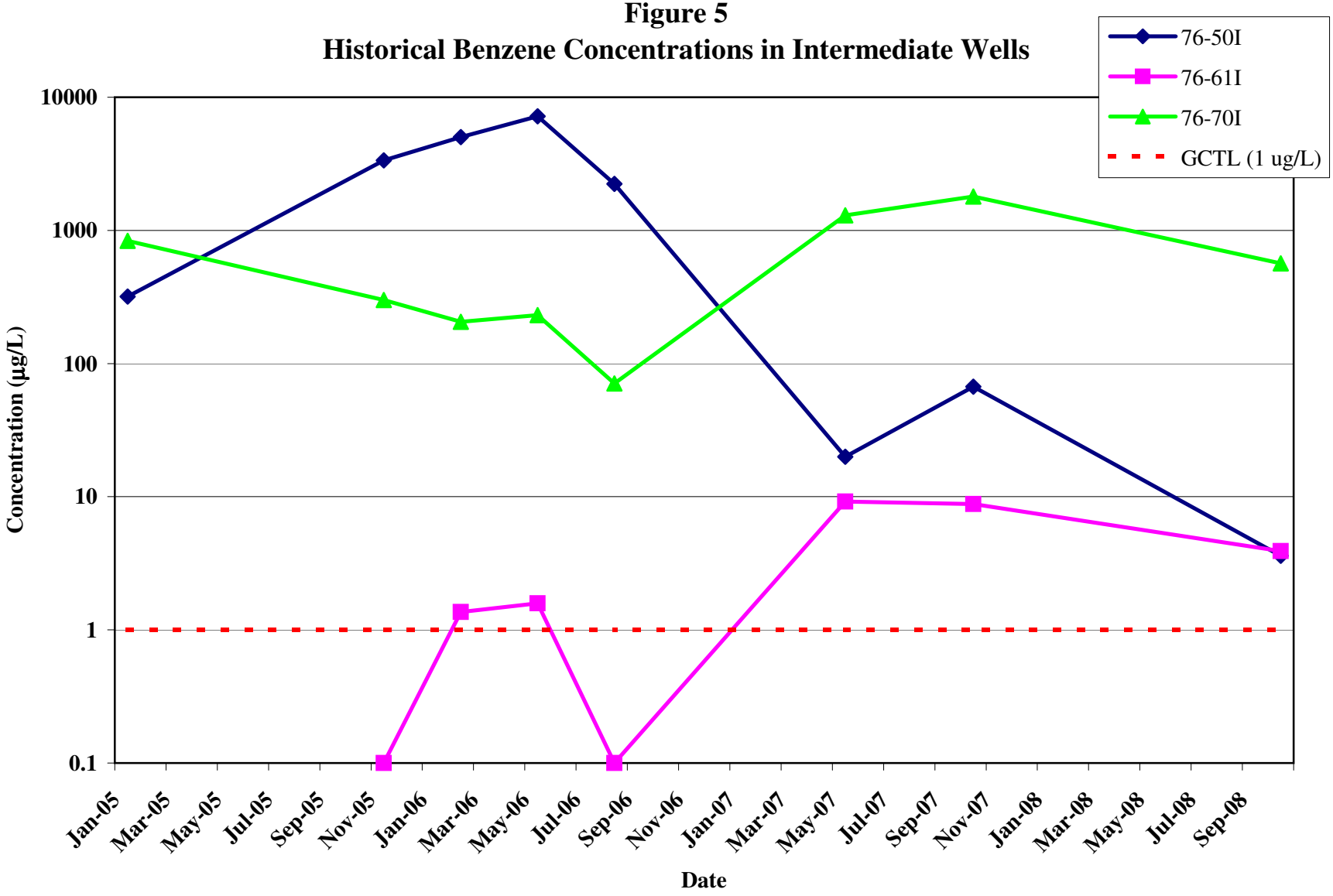


FIGURE 6
Historical Benzene Concentrations in Deep Wells

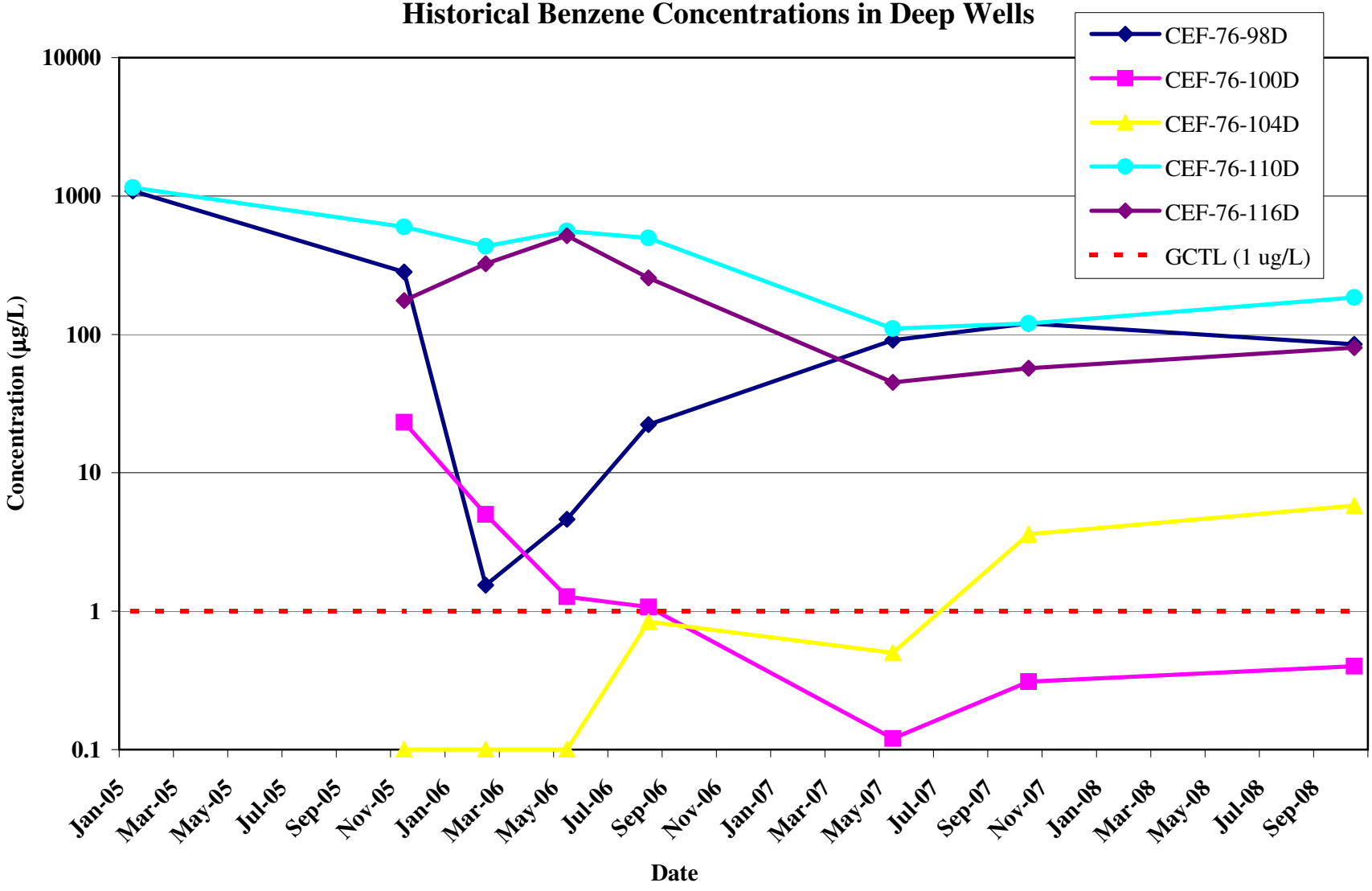


FIGURE 7
Historical Ethylbenzene Concentrations

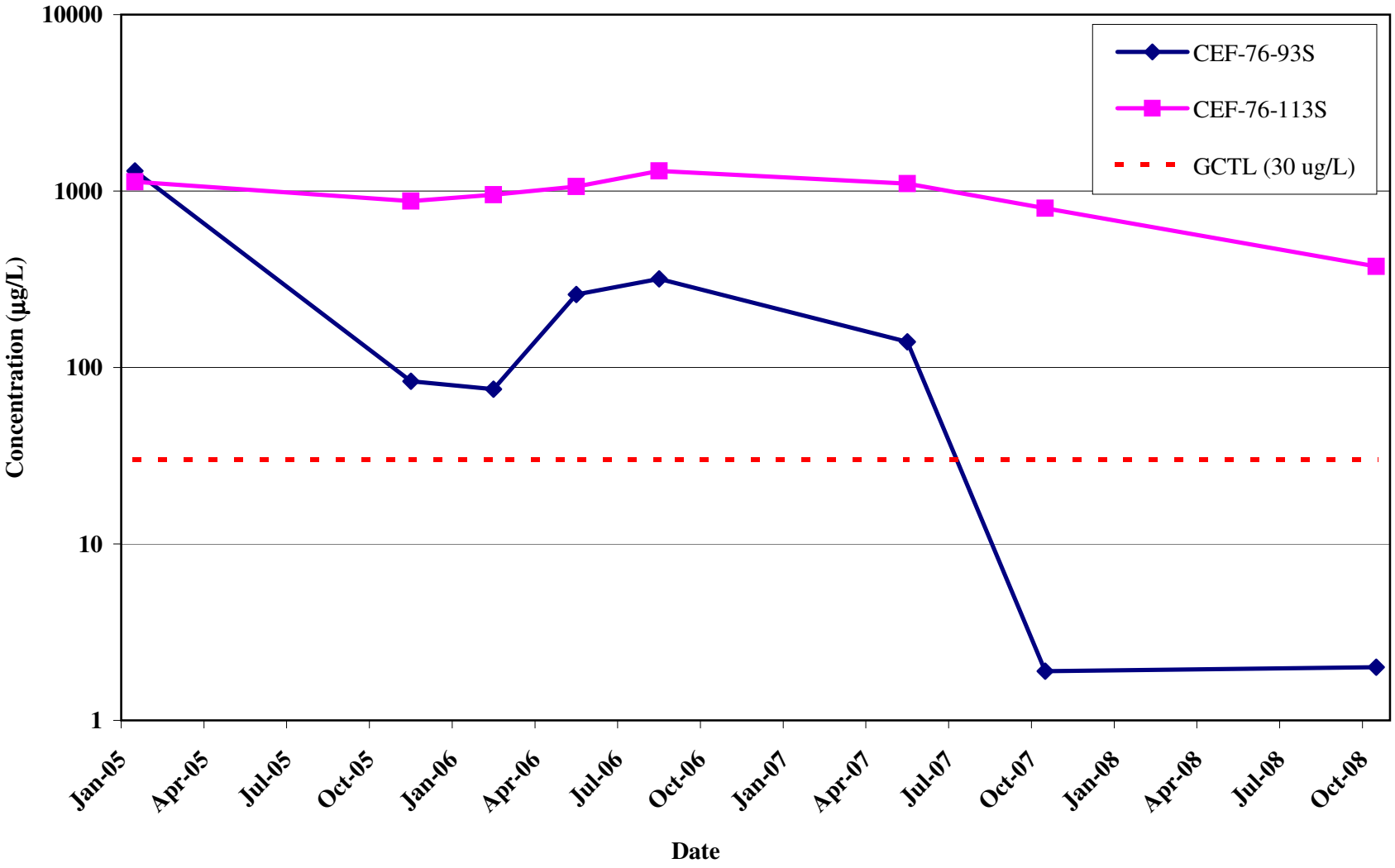


FIGURE 8
Historical Total Xylenes Concentrations

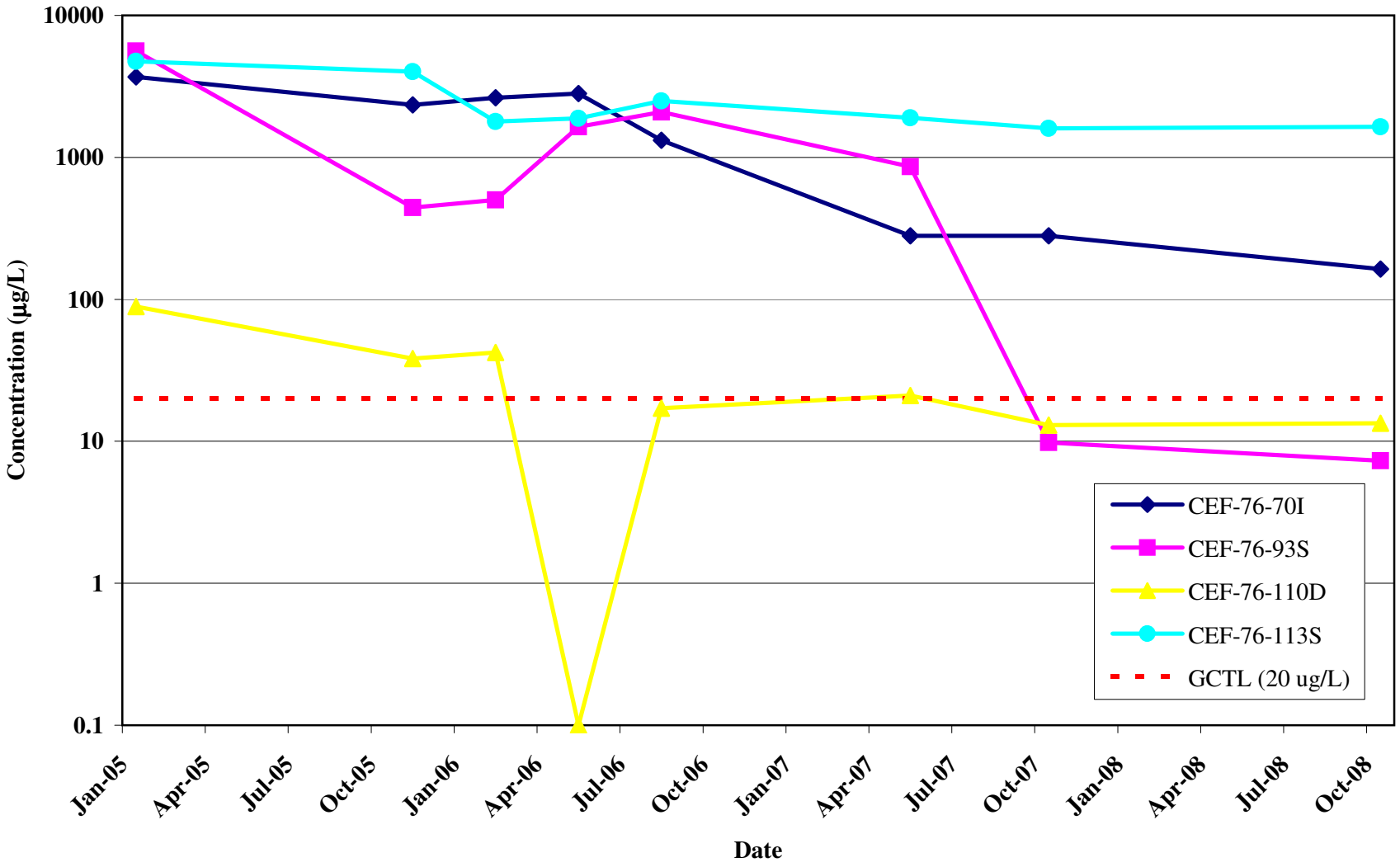


FIGURE 9
Historical Isopropylbenzene Concentrations

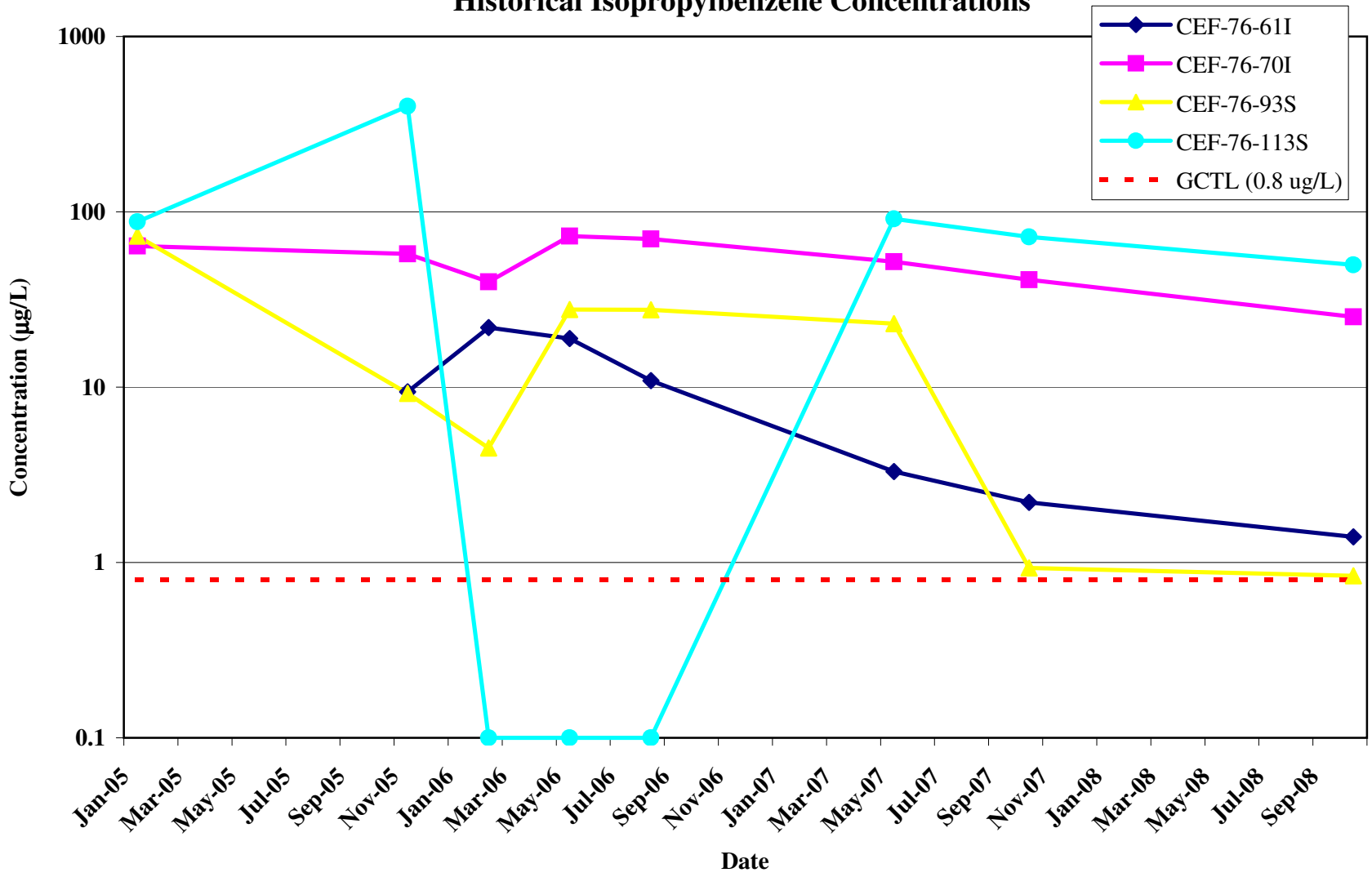
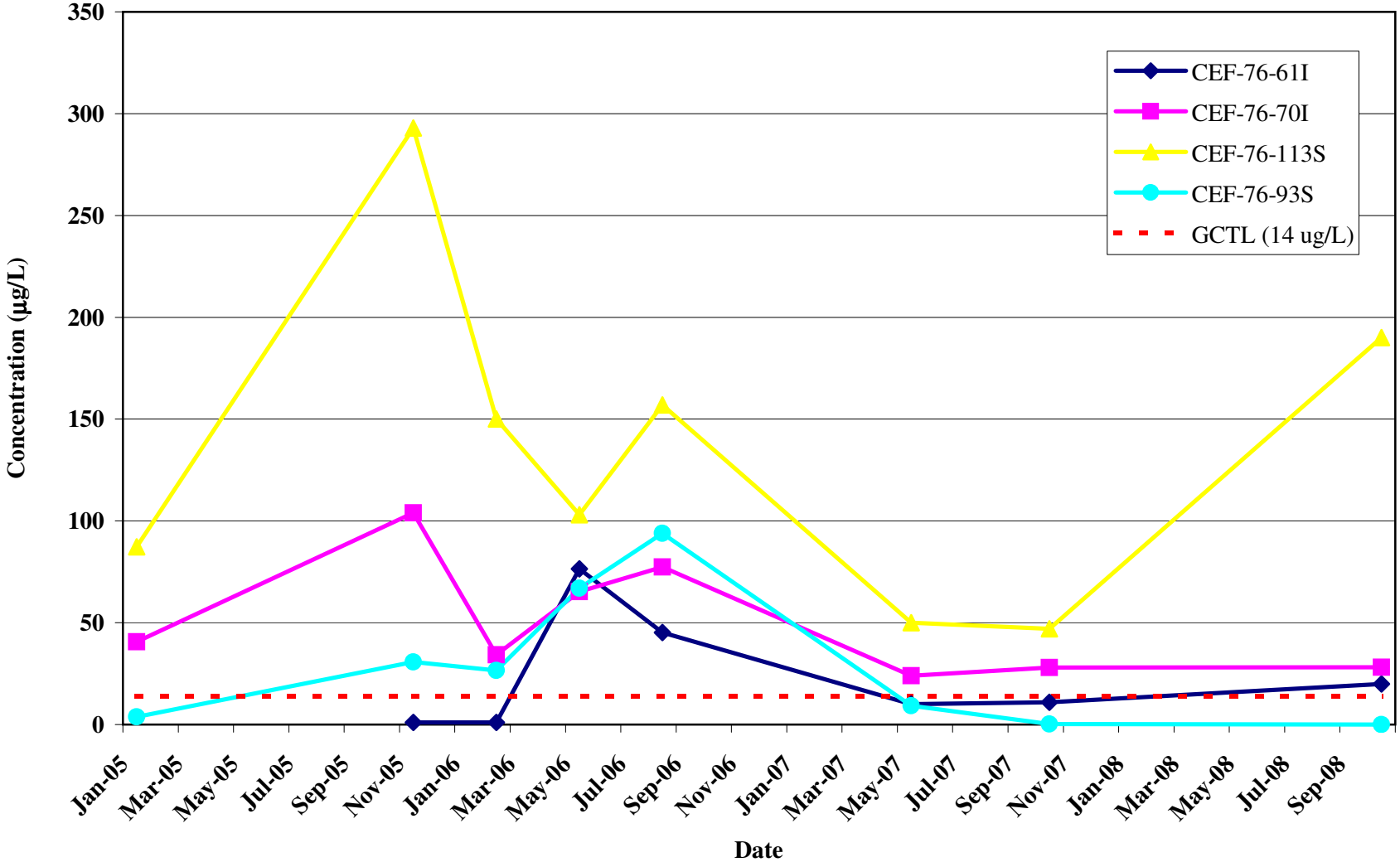


FIGURE 10
Historical Naphthalene (Method 8260B) Concentrations



TABLES

TABLE 1
GROUNDWATER ELEVATIONS

North Fuel Farm
NAS Cecil Field
Jacksonville, Florida

Well ID	Date	Screening Interval (ft bgs)	Top of Casing Elevation (ft AMSL)	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	Water Level Elevation (ft AMSL)
372-13R	7/29/2005	1.50 - 11.50'	81.25	no LNAPL	0.05	81.20
	11/18/2005			no LNAPL	6.05	75.20
	5/15/2006			no LNAPL	9.14	72.11
	8/15/2006			no LNAPL	10.71	70.54
	10/22/2007			no LNAPL	6.28	74.97
	10/8/2008			no LNAPL	4.84	76.41
76-49S	7/29/2005	45 - 50'	78.14	no LNAPL	3.30	74.84
	11/18/2005			no LNAPL	6.14	72.00
	5/16/2006			no LNAPL	8.15	69.99
	8/17/2006			no LNAPL	9.72	68.42
	10/22/2007			no LNAPL	6.52	71.62
	10/8/2008			no LNAPL	4.72	73.42
76-50I	7/29/2005	75 - 80'	78.17	no LNAPL	1.54	76.63
	11/18/2005			no LNAPL	5.35	72.82
	5/15/2006			no LNAPL	8.08	70.09
	10/22/2007			no LNAPL	6.38	71.79
	10/8/2008			no LNAPL	4.55	73.62
76-57S	7/29/2005	30 - 35'	77.74	no LNAPL	2.12	75.62
	11/18/2005			no LNAPL	5.71	72.03
	5/17/2006			no LNAPL	7.58	70.16
	8/17/2006			no LNAPL	9.16	68.58
	10/22/2007			no LNAPL	6.13	71.61
	10/8/2008			no LNAPL	4.21	73.53
76-61I	7/29/2005	65 - 70'	81.12	no LNAPL	11.90	69.22
	11/18/2005			no LNAPL	8.95	72.17
	5/17/2006			no LNAPL	11.06	70.06
	8/16/2006			no LNAPL	12.86	68.26
	10/22/2007			no LNAPL	9.72	71.40
	10/8/2008			no LNAPL	7.61	73.51
76-70I	7/29/2005	65 - 70'	78.21	no LNAPL	2.10	76.11
	11/18/2005			no LNAPL	5.24	72.97
	5/11/2006			no LNAPL	7.85	70.36
	8/15/2006			no LNAPL	9.70	68.51
	10/22/2007			no LNAPL	5.85	72.36
	10/8/2008			no LNAPL	4.41	73.80
76-93S	7/29/2005	25 - 30'	81.59	no LNAPL	3.70	77.89
	11/18/2005			no LNAPL	7.24	74.35
	5/10/2006			no LNAPL	9.56	72.03
	8/14/2006			no LNAPL	10.53	71.06
	10/22/2007			no LNAPL	7.55	74.04
	10/8/2008			no LNAPL	6.48	75.11
76-94S	7/29/2005	5 - 15'	81.59	no LNAPL	NM	NM
	11/18/2005			no LNAPL	9.06	72.53
	5/10/2006			no LNAPL	10.07	71.52
	8/14/2006			no LNAPL	13.25	68.34
	10/22/2007			no LNAPL	9.83	71.76
	10/8/2008			no LNAPL	7.40	74.19
76-95S	7/29/2005	5 - 15'	80.88	no LNAPL	5.71	75.17
	11/18/2005			no LNAPL	6.82	74.06
	5/16/2006			no LNAPL	9.35	71.53
	8/16/2006			no LNAPL	11.25	69.63
	10/22/2007			no LNAPL	6.59	74.29
	10/8/2008			no LNAPL	6.45	74.43
76-98D	7/29/2005	105 - 110'	81.39	no LNAPL	4.51	76.88
	11/18/2005			no LNAPL	8.45	72.94
	5/11/2006			no LNAPL	11.19	70.20
	8/15/2006			no LNAPL	13.60	67.79
	10/22/2007			no LNAPL	11.53	69.86
	10/8/2008			no LNAPL	8.28	73.11
76-99D	7/29/2005	95 - 100'	81.69	no LNAPL	NM	NM
	11/18/2005			no LNAPL	13.97	67.72
	5/17/2006			no LNAPL	11.44	70.25
	8/16/2006			no LNAPL	13.82	67.87
	10/22/2007			no LNAPL	21.45	60.24
	10/8/2008			no LNAPL	8.72	72.97
76-100D	7/29/2005	110 - 115'	80.15	no LNAPL	4.85	75.30
	11/18/2005			no LNAPL	8.92	71.23
	5/16/2006			no LNAPL	10.73	69.42
	8/17/2006			no LNAPL	12.02	68.13
	10/22/2007			no LNAPL	8.63	71.52
	10/8/2008			no LNAPL	7.33	72.82
76-104D	7/29/2005	110 - 115'	79.08	no LNAPL	NM	NM
	11/18/2005			no LNAPL	8.14	70.94
	5/15/2006			no LNAPL	10.05	69.03
	8/17/2006			no LNAPL	11.33	67.75
	10/22/2007			no LNAPL	8.11	70.97
	10/8/2008			no LNAPL	7.10	71.98
76-110D	7/29/2005	105 - 110'	82.51	no LNAPL	4.80	77.71
	11/18/2005			no LNAPL	10.41	72.10
	5/11/2006			no LNAPL	12.85	69.66
	8/14/2006			no LNAPL	14.60	67.91
	10/22/2007			no LNAPL	11.90	70.61
	10/8/2008			no LNAPL	10.20	72.31
76-113S	7/29/2005	35 - 40'	81.22	no LNAPL	3.51	77.71
	11/18/2005			no LNAPL	8.72	72.50
	5/10/2006			no LNAPL	10.62	70.60
	8/14/2006			no LNAPL	12.71	68.51
	10/22/2007			no LNAPL	9.57	71.65
	10/8/2008			no LNAPL	7.30	73.92
76-116D	10/22/2007	110 - 115'	82.83	no LNAPL	11.67	71.16
	10/8/2008			no LNAPL	10.40	72.43

Notes:
ft bgs - feet below ground surface
ft AMSL - feet above mean sea level
ft btoc - feet below top of casing
Elevation is referenced to National Geodetic Vertical Datum 1929 (NGVD 1929)
LNAPL = light non-aqueous phase liquid
NM = not measured

TABLE 2

NATURAL ATTENUATION PARAMETER RESULTS

North Fuel Farm
NAS Cecil Field
Jacksonville, Florida

Well ID	Sample Date	pH (SU)	Conductivity (µS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	ORP (mV)	Carbon Dioxide (mg/L)	Sulfate (mg/L)	Sulfide (mg/L)	Total Organic Carbon (mg/L)	Inorganic Carbon (mg/L)
GCTL (mg/L)		**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**250**	**NE**	**NE**	**NE**
NADSC (mg/L)		**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**2500**	**NE**	**NE**	**NE**
372-13R	10/23/2007	7.21	225	3.10	0.42	27.21	89.6	NA	NA	NA	NA	NA
	10/9/2008	6.40	500	5.31	0.3	25.75	99.2	NA	NA	NA	NA	NA
76-49S	10/26/2007	2.04	3331	2.04	0.10	25.50	210	ND	**2070**	ND	**17.8**	**3.2**
	10/9/2008	2.20	3061	3.66	0.81*	25.59	281.6	NA	**2720**	<0.6	**17.5**	**14.1**
76-50I	10/26/2007	2.57	4567	4.52	0.09	27.37	121	NA	NA	NA	NA	NA
	10/9/2008	2.48	4757	5.81	1.04*	27.08	184	NA	NA	NA	NA	NA
76-57S	10/26/2007	2.69	2244	1.51	0.03	24.23	173.1	ND	**1430**	ND	**10.5**	**4**
	10/10/2008	1.14	1100	6.82	1	23.86	189.6	NA	**894**	<0.6	**7**	**21.1**
76-61I	10/26/2007	2.16	9734	23.30	-0.13	23.89	188	ND	**15100**	ND	**77.4**	**3**
	10/10/2008	**	6555	16.20	0.8	25.24	238	NA	**10400**	<0.6	**55.2**	<10
76-70I	10/25/2007	3.29	4676	3.02	-0.34	25.90	5.7	NA	NA	NA	NA	NA
	10/10/2008	2.78	5268	4.81	0.7	26.51	273.5	NA	NA	NA	NA	NA
76-93S	10/24/2007	5.73	275	88.1	0.31	26.17	258	NA	NA	NA	NA	NA
	10/10/2008	6.12	270	51.3	1.44*	27.53	-178.9	NA	NA	NA	NA	NA
76-94S	10/24/2007	2.50	2207	0.66	0.47	25.93	476	NA	NA	NA	NA	NA
	10/10/2008	4.5	195	3.52	0.38*	27.50	77.9	NA	NA	NA	NA	NA
76-95S	10/25/2007	6.12	151	88.80	1.78	25.10	56.4	**92.6**	**9.8**	ND	**11.7**	**6.8**
	10/9/2008	5.89	146	11.2	1.7*	23.91	-95	NA	**8.2**	<0.6	**18.9**	**47.6**
76-98D	10/24/2007	3.67	7769	1.68	0.53	24.95	193	NA	NA	NA	NA	NA
	10/9/2008	3.23	2568	7.07	0.8	25.77	132.1	NA	NA	NA	NA	NA
76-99D	10/24/2007	6.56	3337	3.11	0.59	23.49	299	**247**	**1860**	ND	**8.4**	**14.4**
	10/9/2008	6.04	707	5.49	1.09*	27.28	-27.2	NA	**1770**	<0.6	**11**	**86**
76-100D	10/25/2007	5.98	2877	1.64	0.53	25.56	-61.5	191	**1630**	ND	**6**	**15.7**
	10/9/2008	5.50	3072	5.79	0	24.59	-47.5	NA	**2600**	<0.6	**9.1**	**47.4**
76-104D	10/25/2007	5.27	1294	1.68	0.72	21.24	87.3	**126**	**519**	ND	**2.9**	**10.7**
	10/9/2008	**	932	2.05	0.9	23.67	-271.1	NA	**472**	<0.6	**3**	**32.6**
76-110D	10/23/2007	2.32	6444	5.75	0.26	25.49	390	NA	NA	NA	NA	NA
	10/9/2008	2.29	7166	**	1	24.55	322.8	NA	NA	NA	NA	NA
76-113S	10/25/2007	3.11	2499	2.50	0.23	25.95	45	NA	NA	NA	NA	NA
	10/10/2008	3.11	1952	7.62	1	27.23	18.9	NA	NA	NA	NA	NA
76-116D	10/25/2007	2.94	9815	1.56	0.10	22.94	121.4	ND	**10600**	**1.1 J**	**25.1**	**3.2 J**
	10/10/2008	3.37	7691	9.3	0.4	22.45	155.8	NA	**10500**	<0.6	**48.4**	**6.5**

NOTES:
Historical data obtained from CH2MHILL
GCTL - Groundwater Cleanup Target Level
NADSC - Natural Attenuation Default Source Concentration
NA - not analyzed
NE = not established
SU - Standard Units
µS/cm = millisiemans per centimeter
NTU = nephelmetric turbidity units
mg/L = milligrams per liter
°C = degrees Celcius
ORP = oxidation reduction potential
mV = millivolts
J - concentration estimated below the reporting limit
ND - concentration not detected above the method detection limit, limit not available
* - DO readings from field meter, not Chemetrics Kits
** - Data not available due to meter malfunction
Exceeds the GCTL
Exceeds the GCTL and NADSC

TABLE 3
GROUNDWATER ANALYTICAL RESULTS

North Fuel Farm
NAS Cecil Field
Jacksonville, Florida

Well ID	Sample Date	Benzene	Ethylbenzene	Toluene	Xylenes, total	Acetone	Carbon disulfide	1-Methylnaphthalene	2-Methylnaphthalene	Methyl-t-butyl-Ether	sec-Butylbenzene	Chrysene	Isopropylbenzene (Cumene)	Methyl ethyl ketone (2-butanone)	Methylene chloride	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Naphthalene by Method 8260	Naphthalene by Method 8270	n-Propylbenzene	TRPH
	GCTL (µg/L)	1	30	40	20	6300	700	28	28	50	280	4.8	0.8	4200	5	10	10	14	14	NE	5000
	NADSC (µg/L)	100	300	400	200	63000	7000	280	280	500	2800	48	8	42000	50	100	100	140	140	NE	50000
372-13R	1/24/2005	ND	18.3	ND	7.18	ND	1.19 J	ND	ND	ND	ND	ND	8.22	ND	ND	ND	ND	122 J	ND	ND	8480 JB
	11/18/2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.92 J	ND	ND	ND	ND	ND	ND	ND	436 JB
	2/13/2006	ND	ND	ND	ND	3.57 JB	ND	ND	ND	ND	ND	ND	ND	ND	0.86 JB	ND	ND	ND	ND	ND	491 JB
	5/15/2006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	901
	8/15/2006	ND	ND	ND	ND	2.28 JB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	190 JB
	5/22/2007	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	10/23/2007	ND	ND	ND	ND	5.3 JB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	10/9/2008	<0.40	<0.43	<0.35	<0.78	<10	<0.40	<0.48	<0.48	<0.26	<0.25	<0.48	<0.20	<2	<1	<0.22	<0.20	<1	<0.96	<0.25	<160
76-49S	11/17/2005	2.2	ND	ND	ND	10.2 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	2/16/2006	1.61	ND	ND	8.23	8.2 JB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	5/16/2006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	8/17/2006	ND	ND	ND	8.17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	5/29/2007	19	0.19 J	ND	2.9	1.5 JB	ND	ND	ND	ND	ND	ND	0.5 J	ND	ND	ND	ND	ND	ND	ND	170 J
	10/26/2007	1.5	ND	ND	ND	18	ND	0.03 J	0.11 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	10/9/2008	52.3	0.67 I	<0.35	12.5	<10	<0.40	<0.48	<0.48	<0.26	<0.25	<0.48	<0.20	<2	<1	1.6 I	0.45 I	<1	<0.95	<0.25	215
76-50I	1/25/2005	318	ND	ND	1910	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	141 J	ND	ND	3310 JB
	11/21/2005	3360 J	ND	ND	2400	905	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	54 J	ND	ND	3080 JB
	2/14/2006	5020	71.2 J	ND	586	528 JB	ND	ND	ND	ND	ND	ND	ND	ND	277 JB	ND	ND	21.2 J	ND	ND	1840 JB
	5/15/2006	7200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	12.9 J	ND	ND	1050
	8/15/2006	2230 J	15.8 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.96 J	ND	ND	183 JB
	5/29/2007	20	0.28 J	ND	4.8	ND	ND	ND	ND	ND	ND	ND	0.31 J	ND	ND	ND	ND	0.18 JB	ND	ND	190 J
	10/26/2007	67	0.57 J	0.16 J	6.6 J	15	ND	ND	ND	ND	ND	ND	0.15 J	ND	ND	ND	ND	0.35 J	ND	ND	ND
	10/9/2008	3.6	<0.43	<0.35	2.7 I	<10	<0.40	<0.48	<0.48	<0.26	<0.25	<0.48	<0.20	<2	<1	0.32 I	<0.20	<1	<0.95	<0.25	237
76-57S	11/17/2005	33.6	11.7	ND	ND	10.6 J	ND	ND	ND	ND	ND	ND	3.46 J	ND	ND	ND	ND	ND	ND	ND	NA
	2/15/2006	81.8	6.2	ND	ND	5.15 JB	ND	ND	ND	ND	ND	ND	2.81 J	ND	ND	ND	ND	ND	ND	ND	NA
	5/17/2006	23.7	2.01 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	8/17/2006	7.02	1.72 J	ND	3.21 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	5/23/2007	1.8	0.31 J	ND	1.5	ND	ND	ND	ND	ND	ND	ND	0.28 J	ND	ND	ND	ND	0.16 JB	ND	ND	240 J
	10/26/2007	2.9	0.36 J	ND	2.2 J	4.4 J	ND	ND	ND	ND	ND	ND	0.27 J	ND	ND	ND	ND	0.18 J	ND	ND	ND
	10/10/2008	3.7	0.51 I	<0.35	2.19 I	<10	<0.40	<0.48	<0.48	<0.26	<0.25	<0.48	<0.20	<2	<1	<0.22	0.27 I	<1	<0.96	<0.25	255
76-61I	11/17/2005	ND	36.9 J	ND	73.8	38.1 J	ND	ND	ND	ND	ND	ND	9.41 J	3 J	ND	ND	ND	ND	ND	ND	NA
	2/15/2006	1.36	22.8	ND	24.2	ND	12.7	ND	ND	ND	ND	ND	21.9	2.07 J	ND	ND	ND	ND	ND	ND	NA
	5/17/2006	1.58	10.9	ND	18	10 J	7.53	24.2 J	ND	ND	ND	ND	18.9	ND	ND	ND	ND	76.5 J	ND	ND	NA
	8/16/2006	ND	3.06 J	ND	5.2	ND	ND	11 J	ND	ND	ND	ND	10.9 J	ND	3.02 JB	ND	ND	45.2 J	ND	ND	NA
	5/22/2007	9.2	1.2	ND	4.8	73 J	ND	1.4	2.2	ND	ND	ND	3.3	21	ND	ND	ND	10	ND	ND	1100
	10/26/2007	8.8	1.2	ND	4.8 J	67	0.42 J	1.8 J	2.6 J	ND	ND	ND	2.2	19	ND	ND	ND	11 J	ND	ND	760
	10/10/2008	3.9	1.7	<0.35	6.4	<10	<0.40	1.3 I	1.8 I	<0.26	<0.25	<0.49	1.4	<2	<1	21.4	7	19.9	8.4	1.8	445
76-70I	1/25/2005	834	50.3	11.1 J	3680	ND	ND	ND	ND	ND	ND	ND	63.7	ND	ND	ND	ND	40.7 J	ND	ND	9210 JB
	11/21/2005	300	ND	ND	2340	804	ND	ND	ND	ND	ND	ND	57.5 JB	35 JB	ND	ND	ND	104 J	ND	ND	496 B
	2/14/2006	206	ND	ND	2630	897 JB	ND	ND	ND	ND	ND	ND	39.9 J	ND	ND	ND	ND	34.2	ND	ND	3780 JB
	5/11/2006	231	ND	ND	2810	1290 JB	ND	ND	ND	ND	ND	ND	72.6 J	ND	ND	ND	ND	65.3 J	ND	ND	5170
	8/15/2006	70.8	ND	ND	1320	ND	ND	ND	ND	ND	ND	ND	70.1	ND	10.4 JB	ND	ND	77.4 J	ND	ND	1640 JB
	5/23/2007	1300	6.6 J	ND	280	ND	ND	0.12 J	ND	ND	ND	ND	52	ND	ND	ND	ND	24 JB	ND	ND	1700 J
	10/25/2007	1800	7.1 J	ND	280 J	77 J	ND	0.2	0.16	ND	ND	ND	41	ND	14 J	ND	ND	28	ND	ND	1600
	10/9/2008	566	9.8	<1.8	163.4	<50	<2	<0.48	<0.48	<1.3	<1.3	<0.48	25.2	<10	31.8 V	113	39	28.2	17.1	17.4	659
76-93S	1/24/2005	1890	1300	7800	5610	ND	ND	ND	ND	ND	ND	ND	72.8 J	ND	ND	ND	ND	3.73 J	ND	ND	12100 JB
	11/18/2005	27.2	83.5	235	443	ND	ND	ND	ND	ND	ND	ND	9.22 J	ND	7.85 JB	ND	ND	30.8 J	ND	ND	1620 JB
	2/13/2006	11.8	75.4	193	502	139 JB	ND	8.96 J	6.46 J	ND	ND	ND	4.5 J	ND	ND	ND	ND	26.6 J	ND	ND	112 JB
	5/10/2006	37.9	259	607	1640	565 JB	ND	18	ND	ND	ND	ND	27.7 J	ND	ND	ND	ND	66.9 J	ND	ND	7790 J
	8/14/2006	23.1	318	515	2090	ND	ND	31.9	ND	ND	ND	ND	27.6	ND	14 JB	ND	ND	93.9 J	ND	ND	4520 JB
	5/15/2007	26	140	320 JB	860	30 JB	0.39 J	6.1	6.8	ND	ND	ND	23	ND	2.3 JB	ND	ND	9.2 JB	ND	ND	5300
	10/24/2007	ND	1.9	1.4 JB	9.8 J	7.2 JB	ND	0.17	0.23	ND	ND	0.023 J	0.93	ND	ND	ND	ND	0.23	ND	ND	160 J
	10/10/2008	0.44 I	2.0	1.7	7.3	<10	<0.40	0.49 I	1.1 I	<0.26	0.29 I	<0.48	0.84 I	<2	<1	1.8 I	0.71 I	<1	<0.96	0.94 I	243

TABLE 3
GROUNDWATER ANALYTICAL RESULTS

North Fuel Farm
NAS Cecil Field
Jacksonville, Florida

Well ID	Sample Date	Benzene	Ethylbenzene	Toluene	Xylenes, total	Acetone	Carbon disulfide	1-Methylnaphthalene	2-Methylnaphthalene	Methyl-t-butyl-Ether	sec-Butylbenzene	Chrysene	Isopropylbenzene (Cumene)	Methyl ethyl ketone (2-butanone)	Methylene chloride	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Naphthalene by Method 8260	Naphthalene by Method 8270	n-Propylbenzene	TRPH
	GCTL (µg/L)	1	30	40	20	6300	700	28	28	50	280	4.8	0.8	4200	5	10	10	14	14	NE	5000
	NADSC (µg/L)	100	300	400	200	63000	7000	280	280	500	2800	48	8	42000	50	100	100	140	140	NE	50000
76-94S	1/25/2005	3040	1310	3800	4850	ND	ND	ND	ND	ND	ND	ND	86.5 J	ND	ND	ND	ND	193 J	ND	ND	15500 JB
	11/18/2005	ND	ND	ND	ND	270 JB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.1	ND	ND	404 JB
	2/13/2006	0.993 J	ND	ND	ND	36 JB	ND	ND	ND	ND	ND	ND	ND	1.47 J	2.98 JB	ND	ND	ND	ND	ND	200 JB
	5/10/2006	1.6	ND	ND	ND	23.3 JB	ND	ND	ND	ND	ND	ND	ND	1.57 J	ND	ND	ND	0.696	ND	ND	304
	8/14/2006	ND	ND	ND	ND	10.4 JB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	97 JB
	5/15/2007	ND	ND	ND	ND	17 JB	ND	ND	ND	ND	ND	ND	ND	ND	0.5 JB	ND	ND	ND	ND	ND	ND
	10/24/2007	ND	ND	ND	ND	8.4 JB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	10/10/2008	0.46 I	<0.43	<0.35	<0.78	<10	<0.40	<0.48	<0.48	<0.26	<0.25	<0.48	<0.20	<2	<1	<0.22	<0.20	<1	<0.96	<0.25	211 I
76-95S	11/16/2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	2/14/2006	ND	ND	ND	ND	2.86 JB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	5/16/2006	ND	ND	ND	ND	6.39 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	8/16/2006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.54 JB	ND	ND	ND	ND	ND	NA
	5/25/2007	ND	ND	ND	ND	6.7 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	10/25/2007	ND	ND	0.61 J	ND	5.6 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	180 J
	10/9/2008	<0.40	<0.43	33.8	<0.78	13.8 I	<0.40	<0.48	<0.48	<0.26	<0.25	<0.48	<0.20	<2	<0.61	<0.22	<0.20	<1	<0.96	<0.25	627
76-98D	1/25/2005	1090 J	8.33 J	ND	62.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20.3	ND	ND	811 B
	11/21/2005	283	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.06	ND	ND	9340 B
	2/14/2006	1.54	ND	ND	ND	5.28 JB	ND	ND	ND	ND	ND	ND	ND	ND	2.41 JB	ND	ND	5.07	ND	ND	82.8 JB
	5/11/2006	4.62	ND	ND	ND	1.04 JB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	312 J
	8/15/2006	22.3	ND	ND	6.82	15.7 JB	2.95 J	ND	ND	ND	ND	ND	ND	ND	1.05 JB	ND	ND	2.18	ND	ND	137 JB
	5/25/2007	91	0.27 J	ND	7.2	ND	ND	0.02 J	0.037 J	ND	ND	ND	0.32 J	ND	ND	ND	ND	1.5	ND	ND	330 J
	10/24/2007	120	0.38 J	0.22 JB	8.8 J	7.1 JB	ND	ND	0.046 J	ND	ND	ND	0.24 J	ND	ND	ND	ND	2.1	ND	ND	160 J
	10/9/2008	85	0.67 I	<0.35	5.8 I	<10	<0.40	<0.48	<0.48	<0.26	<0.25	<0.48	0.25 I	<2	<1	2.4	0.75 I	2.6 I	1.7 I	<0.25	231 I
76-99D	11/16/2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	2/15/2006	ND	ND	ND	ND	3.18 JB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	5/17/2006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	8/16/2006	ND	ND	ND	ND	1.59 J	ND	ND	ND	ND	ND	ND	ND	ND	2.62 JB	ND	ND	ND	ND	ND	NA
	5/22/2007	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	10/24/2007	ND	ND	ND	ND	4.4 JB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	10/9/2008	<0.40	<0.43	<0.35	<0.78	<10	<0.40	<0.48	<0.48	<0.26	<0.25	<0.48	<0.20	<2	<1	<0.22	<0.20	<1	<0.96	<0.25	190 I
76-100D	11/17/2005	23.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	2/16/2006	5	ND	ND	ND	2.9 JB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	5/16/2006	1.27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	8/17/2006	1.07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	5/29/2007	0.12 J	ND	ND	ND	ND	ND	ND	0.019 JB	ND	ND	ND	ND	ND	ND	ND	ND	0.047 JB	ND	ND	ND
	10/25/2007	0.31 J	ND	ND	ND	4.2 J	0.36 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	10/9/2008	<0.40	<0.43	<0.35	<0.78	<10	<0.40	<0.48	<0.48	<0.26	<0.25	<0.48	<0.20	<2	<0.61	<0.22	<0.20	<1	<0.96	<0.25	<160
76-104D	11/16/2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	2/15/2006	ND	ND	ND	ND	2.71 JB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	5/15/2006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	8/17/2006	0.838 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.948 J	ND	ND	ND	ND	ND	NA
	5/29/2007	0.5 J	ND	ND	ND	2.6 JB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	10/25/2007	3.6	ND	ND	ND	4.2 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	10/9/2008	5.8	<0.43	<0.35	<0.78	<10	<0.40	<0.48	<0.48	<0.26	<0.25	<0.48	<0.20	<2	<0.61	<0.22	<0.20	<1	<0.96	<0.25	<160
76-110D	1/25/2005	1150	ND	ND	88.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	499 JB
	11/21/2005	597	ND	ND	38.2 J	ND	42.6 J	ND	ND	ND	ND	ND	19.2 JB	ND	ND	ND	ND	2.57 J	ND	ND	2700 B
	2/14/2006	434	ND	ND	42.3 J	26.9 JB	ND	ND	ND	ND	ND	ND	ND	ND	28.6 JB	ND	ND	2.55 J	ND	ND	309 JB
	5/11/2006	559	ND	ND	ND	169 JB	125	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.31	ND	ND	370
	8/14/2006	497	ND	ND	17.1 J	59.4 JB	15.4 J	ND	ND	ND	ND	ND	ND	ND	9.25 JB	ND	ND	3.33	ND	ND	430 JB
	5/30/2007	110	0.99 J	ND	21 JB	51 JB	ND	ND	ND	ND	ND	ND	0.51 J	3.4 J	ND	ND	ND	1.6	ND	ND	350 J
	10/23/2007	120	0.55 J	ND	13 J	16 JB	ND	ND	ND	ND	ND	ND	0.35 J	3.5 J	ND	ND	ND	1 JB	ND	ND	190 J
	10/9/2008	185	1.9 I	<0.70	13.4 I	<20	<0.80	<0.48	<0.48	<0.52	<0.5	<0.48	1.0 I	<4	18.8 V	11.3	3.2 I	6.8 I	5.6	<0.5	347

TABLE 3
GROUNDWATER ANALYTICAL RESULTS

North Fuel Farm
NAS Cecil Field
Jacksonville, Florida

Well ID	Sample Date	Benzene	Ethylbenzene	Toluene	Xylenes, total	Acetone	Carbon disulfide	1-Methylnaphthalene	2-Methylnaphthalene	Methyl-t-butyl-Ether	sec-Butylbenzene	Chrysene	Isopropylbenzene (Cumene)	Methyl ethyl ketone (2-butanone)	Methylene chloride	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Naphthalene by Method 8260	Naphthalene by Method 8270	n-Propylbenzene	TRPH
	GCTL (µg/L)	**1**	**30**	**40**	**20**	**6300**	**700**	**28**	**28**	**50**	**280**	**4.8**	**0.8**	**4200**	**5**	**10**	**10**	**14**	**14**	**NE**	**5000**
	NADSC (µg/L)	**100**	**300**	**400**	**200**	**63000**	**7000**	**280**	**280**	**500**	**2800**	**48**	**8**	**42000**	**50**	**100**	**100**	**140**	**140**	**NE**	**50000**
76-113S	1/25/2005	**7730**	**1130**	**85.3 J**	**4740**	ND	ND	ND	ND	ND	ND	ND	**87.7 J**	ND	ND	ND	ND	**87.3 J**	ND	ND	**12700 JB**
	11/18/2005	**7940**	**878 J**	ND	**4010**	ND	ND	ND	ND	ND	ND	ND	**400 J**	ND	ND	ND	ND	**293 J**	ND	ND	**6090 JB**
	2/13/2006	**9680**	**953 J**	ND	**1790**	**569 JB**	ND	**38.6 J**	**26.2 J**	ND	ND	ND	ND	ND	**315 JB**	ND	ND	**150 J**	ND	ND	**3510 JB**
	5/10/2006	**13100**	**1060**	ND	**1880**	**545 JB**	ND	**23.1 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**103 J**	ND	ND	**7290**
	8/14/2006	**10500**	**1300**	ND	**2500**	ND	ND	**27.1 J**	ND	ND	ND	ND	ND	ND	**195 JB**	ND	ND	**157 J**	ND	ND	**4060 JB**
	5/24/2007	**9900**	**1100**	ND	**1900**	ND	ND	**4**	**5.8**	ND	ND	ND	**91 J**	ND	ND	ND	ND	**50 JB**	ND	ND	**5400**
	10/25/2007	**9000**	**800**	ND	**1600 J**	**180 J**	ND	**2.7**	**3.6**	ND	ND	ND	**72**	ND	**37 J**	ND	ND	**47**	ND	ND	**5600**
	10/10/2008	**11600**	**374**	<70	**1643**	<2000	<80	**1.6 I**	**4.3**	<52	<50	<0.48	**49.9 I**	<400	<200	**206 I**	**77.7**	**<200**	**53.8**	<50	**2120**
76-116D	11/17/2005	**176**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	2/15/2006	**324**	ND	ND	ND	**13.8 JB**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	5/15/2006	**517**	ND	ND	ND	**18.6 JB**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	8/17/2006	**256**	ND	ND	ND	**128 J**	**16.7**	ND	ND	ND	ND	ND	ND	**1.75 J**	ND	ND	ND	ND	ND	ND	NA
	5/29/2007	**45**	**0.17 J**	ND	**1.8**	**370 JB**	**150**	**0.029 JB**	**0.049JB**	ND	ND	**0.045JB**	**0.15 J**	**23 JB**	ND	ND	ND	**0.061 JB**	ND	ND	**170 J**
	10/25/2007	**57 J**	ND	ND	**2.8 J**	**290 J**	**180**	ND	ND	ND	ND	ND	**0.3 J**	**21**	ND	ND	ND	**0.12 J**	ND	ND	ND
	10/10/2008	**80.1**	**1.2 I**	<0.70	**1.0 I**	**95.7**	**53.6**	<0.48	<0.48	<0.52	<0.5	<0.48	<0.40	**18.5**	<2	**2.6 I**	<0.40	<2	<0.96	<0.5	**185 I**

Notes:

All concentrations reported in micrograms per liter (µg/L).
GCTL - Groundwater Cleanup Target Level
NADSC - Natural Attenuation Default Source Concentrations
J - Result is estimated
JB - Analyte was detected in the associated method and/or calibration blank
Bold - analyte was detected above the method detection limit
Exceeds the GCTL
Exceeds botht the GCTL and NADSC
NE - Not Established
ND - No Data
NA - Not Analyzed
I - Result > = MDL but < RL
V - Indicates analyte found in associated method blank

APPENDIX A

GROUNDWATER SAMPLING LOGS

GROUNDWATER SAMPLING LOG

SITE NAME: GW Sampling at North Fuel Farm Cecil Field		SITE LOCATION: Jacksonville	
WELL NO: CEF-076-100D	SAMPLE ID: 8030.08A2.NAVF/3:CEF-076-100D:10/9/08		DATE: 10/09/2008

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches): 0.13	WELL SCREEN INTERVAL DEPTH (feet): 110 - 115	STATIC DEPTH TO WATER (feet): 7.14	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (115.00 feet – 7.14 feet) X 0.00 gallons/foot = 0.00 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
=0.00 gallons+(0.00 gallons/foot X 117.00feet)+ 0.13 gallons = 0.21 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 113.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 113.00	PURGING INITIATED AT: 11:15	PURGING ENDED AT: 11:52	TOTAL VOLUME PURGED (gallons): 0.95

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	DEPTH TO WATER (feet)	pH (standard units)	ORP	TEMP.(°C)	SEC (uS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
11:23		0.20	8.74	5.00	12.80	24.91	2,380.00	3.29	11.10	clear	none
11:28	0.10	0.30	9.00	5.16	-8.70	24.80	2,548.00	2.21	8.67		
11:39	0.30	0.60	9.25	5.39	-38.00	25.04	3,070.00	1.13	7.52		
11:42	0.10	0.70	9.26	5.41	-40.90	24.89	3,113.00	0.97	7.82		
11:48	0.20	0.90	9.29	5.45	-43.80	24.96	3,105.00	0.79	5.98		

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings				Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L):	.68	TEMP.(°C):	24.59	DO: 0.0	CO2:	DO High Range:	DO Low Range:
SEC(uS/cm):	3072	pH:	5.5	Alkalinity:	Ferrous Iron:	CO2 High Range:	DO Low Range:
ORP(mV):	-47.5	TURB(NTU):	5.79	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:				Sulfate: Nitrate:	Sulfide:		

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Burke Cathey	SAMPLER(S) SIGNATURES: BC	SAMPLING INITIATED AT: 11:52	SAMPLING ENDED AT: 12:43
PUMP OR TUBING DEPTH IN WELL (feet): 113.00	SAMPLE PUMP FLOW RATE (mL per minute): 97.19	TUBING MATERIAL CODE: PPE	

FIELD DECONTAMINATION: ☑ Y ☐ N	FIELD-FILTERED: ☐ Y ☑ N Filtration Equipment Type:	FILTER SIZE: NA	DUPLICATE: ☐ Y ☑ N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
CEF-076-100D	3	PE	250 ml	NaOH ZnAC	250 ml	5.5	Sulfide	PP
CEF-076-100D	2	AG	40 ml	HCL	40 ml	5.5	Inorganic Carbon	PP
CEF-076-100D	3	CG	40 ml	HCL	40 ml	5.5	VOCs	RFPP
CEF-076-100D	2	AG	1 L	None	1 L	5.5	SVOCs	PP
CEF-076-100D	2	AG	1 L	H2SO4	1 L	5.5	TRPH	PP
CEF-076-100D	2	AG	40 ml	HCL	40 ml	5.5	TOC	PP
CEF-076-100D	1	PE	500 ml	None	500 ml	5.5	Sulfate	PP

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:

1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)

pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

GROUNDWATER SAMPLING LOG

SITE NAME: GW Sampling at North Fuel Farm Cecil Field		SITE LOCATION: Jacksonville	
WELL NO: CEF-076-104D	SAMPLE ID: 8030.08A2.NAVF/3:CEF-076-104D:10/9/08		DATE: 10/09/2008

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH (feet): 105 - 110	STATIC DEPTH TO WATER (feet): 6.94	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (feet – 6.94 feet) X 0.00 gallons/foot = 0.00 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
=0.00 gallons+(0.00 gallons/foot X 4.00 feet)+ 0.13 gallons = 0.14 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 9:08	PURGING ENDED AT: 9:35	TOTAL VOLUME PURGED (gallons): 0.55

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	DEPTH TO WATER (feet)	pH (standard units)	ORP	TEMP.(°C)	SEC (uS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
9:21		0.10	7.00		-238.40	23.07	874.00	2.66	7.13	clear	none
9:25	0.10	0.20	7.01	7.00	-217.10	23.24	900.00	2.04	3.24	clear	none
9:28	0.10	0.30	7.00	7.00	-257.60	23.39	917.00	1.57	2.14	clear	none
9:31	0.10	0.40	7.01	7.00	-270.20	23.41	925.00	1.53	2.07		

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings				Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L):	1.32	TEMP.(°C):	23.67	DO: .9	CO2:	DO High Range:	DO Low Range:
SEC(uS/cm):	932	pH:		Alkalinity:	Ferrous Iron:	CO2 High Range:	DO Low Range:
ORP(mV):	-271.1	TURB(NTU):	2.05	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:				Sulfate: Nitrate:	Sulfide:		

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Burke Cathey	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 9:35	SAMPLING ENDED AT: 10:17
PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP FLOW RATE (mL per minute): 77.11	TUBING MATERIAL CODE: PPE	
FIELD DECONTAMINATION: ☑ Y ☐ N	FIELD-FILTERED: ☐ Y ☑ N Filtration Equipment Type:	FILTER SIZE: NA	DUPLICATE: ☐ Y ☑ N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
CEF-076-104D	2	AG	1 L	H2SO4	1 L		TRPH	PP
CEF-076-104D	2	AG	1 L	None	1 L		SVOCs	PP
CEF-076-104D	3	CG	40 ml	HCL	40 ml		VOCs	RFPP
CEF-076-104D	2	AG	40 ml	HCL	40 ml		TOC	PP
CEF-076-104D	1	PE	500 ml	None	500 ml		Sulfate	PP
CEF-076-104D	3	PE	250 ml	NaOH ZnAC	250 ml		Sulfide	PP

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:

1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)

pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

GROUNDWATER SAMPLING LOG

SITE NAME: GW Sampling at North Fuel Farm Cecil Field		SITE LOCATION: Jacksonville	
WELL NO: CEF-076-110D	SAMPLE ID: 8030.08A2.NAVF/3:CEF-076-110D:10/9/08		DATE: 10/09/2008

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH (feet): 105 - 110	STATIC DEPTH TO WATER (feet): 10.20	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (feet – 10.20 feet) X 0.00 gallons/foot = 0.00 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
=0.00 gallons+(0.00 gallons/foot X 4.00 feet)+ 0.13 gallons = 0.14 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 13:21	PURGING ENDED AT: 13:30	TOTAL VOLUME PURGED (gallons): 0.90

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	DEPTH TO WATER (feet)	pH (standard units)	ORP	TEMP.(°C)	SEC (uS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
13:21		0.20	10.86	2.09	360.10	24.72	7,188.00	1.12		brown	none
13:25	0.40	0.60	12.12	2.22	336.10	24.53	7,160.00	1.22		brown	none
13:29	0.30	0.90	12.44	2.26	328.50	24.49	7,139.00	0.93		brown	none

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings				Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L):	0.85	TEMP.(°C):	24.55	DO:	CO2:	DO High Range: 1	DO Low Range:
SEC(uS/cm):	7166	pH:	2.29	Alkalinity:	Ferrous Iron:	CO2 High Range:	DO Low Range:
ORP(mV):	322.8	TURB(NTU):		H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:				Sulfate: Nitrate:	Sulfide:		

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Leif Hazlewood	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 13:30	SAMPLING ENDED AT: 13:58
PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP FLOW RATE (mL per minute): 378.54	TUBING MATERIAL CODE: PPE	

FIELD DECONTAMINATION: ☑ Y ☐ N | FIELD-FILTERED: ☐ Y ☑ N | FILTER SIZE: NA | DUPLICATE: ☐ Y ☑ N
Filtration Equipment Type:

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
CEF-076-110D	2	AG	1 L	None	1 L	2.29	SVOCs	PP
CEF-076-110D	2	AG	1 L	H2SO4	1 L	2.29	TRPH	PP
CEF-076-110D	3	CG	40 ml	HCL	40 ml	2.29	VOCs	RFPP
CEF-076-110D	1	PE	500 ml	None	500 ml	2.29	Sulfate	PP
CEF-076-110D	3	PE	250 ml	NaOH ZnAC	250 ml	2.29	Sulfide	PP
CEF-076-110D	2	AG	40 ml	HCL	40 ml	2.29	TOC	PP
CEF-076-110D	2	AG	40 ml	None	40 ml	2.29	TIC	PP

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:

1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)

pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

GROUNDWATER SAMPLING LOG

SITE NAME: GW Sampling at North Fuel Farm Cecil Field		SITE LOCATION: Jacksonville	
WELL NO: CEF-076-113S	SAMPLE ID: 8030.08A2.NAVF/3:CEF-076-113S:10/10/08		DATE: 10/10/2008

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches): 0.13	WELL SCREEN INTERVAL DEPTH (feet): 35 - 40	STATIC DEPTH TO WATER (feet): 6.98	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (feet – 6.98 feet) X 0.00 gallons/foot = 0.00 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
=0.00 gallons+(0.00 gallons/foot X 4.00 feet)+ 0.13 gallons = 0.13 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 15:12	PURGING ENDED AT: 15:42	TOTAL VOLUME PURGED (gallons): 0.65

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	DEPTH TO WATER (feet)	pH (standard units)	ORP	TEMP.(°C)	SEC (uS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
15:33		0.40	6.99	3.23	37.00	28.30	1,910.00	2.21	8.50	clear	sulfuric
15:36	0.10	0.50	6.99	3.30	26.70	27.12	1,899.00	2.13	6.31	clear	sulfuric
15:38	0.10	0.60	6.99	3.15	22.40	27.11	1,919.00	1.98	7.10	clear	sulfuric

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings				Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L):	1.83	TEMP.(°C):	27.23	DO: 1	CO2:	DO High Range:	DO Low Range:
SEC(uS/cm):	1952	pH:	3.11	Alkalinity:	Ferrous Iron:	CO2 High Range:	DO Low Range:
ORP(mV):	18.9	TURB(NTU):	7.62	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:				Sulfate: Nitrate:	Sulfide:		

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Burke Cathey	SAMPLER(S) SIGNATURES: B <	SAMPLING INITIATED AT: 15:42	SAMPLING ENDED AT: 16:11
PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP FLOW RATE (mL per minute): 82.02	TUBING MATERIAL CODE: PPE	

FIELD DECONTAMINATION: ☑ Y ☐ N | FIELD-FILTERED: ☐ Y ☑ N | FILTER SIZE: NA | DUPLICATE: ☐ Y ☑ N
Filtration Equipment Type:

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
CEF-076-113S	3	CG	40 ml	HCL	40 ml	3.11	VOCs	RFPP
CEF-076-113S	2	AG	1 L	None	1 L	3.11	SVOCs	PP
CEF-076-113S	2	AG	1 L	H2SO4	1 L	3.11	TRPH	PP
CEF-076-113S	1	PE	500 ml	None	500 ml	3.11	Sulfate	PP
CEF-076-113S	2	AG	40 ml	None	40 ml	3.11	TIC	PP
CEF-076-113S	3	PE	250 ml	NaOH ZnAC	250 ml	3.11	Sulfide	PP
CEF-076-113S	2	AG	40 ml	HCL	40 ml	3.11	TOC	PP

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:

1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)

pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

GROUNDWATER SAMPLING LOG

SITE NAME: GW Sampling at North Fuel Farm Cecil Field		SITE LOCATION: Jacksonville	
WELL NO: CEF-076-116D	SAMPLE ID: 8030.08A2.NAVF/3:CEF-076-116D:10/10/08		DATE: 10/10/2008

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH (feet): 105 - 110	STATIC DEPTH TO WATER (feet): 10.23	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (feet – 10.23 feet) X 0.00 gallons/foot = 0.00 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
=0.00 gallons+(0.00 gallons/foot X 4.00 feet)+ 0.13 gallons = 0.14 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 8:43	PURGING ENDED AT: 8:58	TOTAL VOLUME PURGED (gallons): 0.70

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	DEPTH TO WATER (feet)	pH (standard units)	ORP	TEMP.(°C)	SEC (uS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
8:51		0.40	10.27	3.76	172.70	22.30	7,340.00	1.90	16.20	clear	none
8:53	0.10	0.50	10.29	3.67	166.00	22.32	7,455.00	1.47	10.70	clear	none
8:57	0.20	0.70	10.29	3.54	160.20	22.42	7,622.00	1.05	10.20	clear	none

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings				Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L):	0.88	TEMP.(°C):	22.45	DO:	CO2:	DO High Range:	DO Low Range: 0.4
SEC(uS/cm):	7691	pH:	3.37	Alkalinity:	Ferrous Iron:	CO2 High Range:	DO Low Range:
ORP(mV):	155.8	TURB(NTU):	9.3	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:				Sulfate: Nitrate:	Sulfide:		

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Leif Hazlewood	SAMPLER(S) SIGNATURES: LH	SAMPLING INITIATED AT: 8:58	SAMPLING ENDED AT: 9:41
PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP FLOW RATE (mL per minute): 176.65	TUBING MATERIAL CODE: PPE	

FIELD DECONTAMINATION: ☑ Y ☐ N
FIELD-FILTERED: ☐ Y ☑ N
Filtration Equipment Type:
FILTER SIZE: NA
DUPLICATE: ☐ Y ☑ N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
CEF-076-116D	2	AG	1 L	H2SO4	1 L	3.37	TRPH	PP
CEF-076-116D	2	AG	1 L	None	1 L	3.37	SVOCs	PP
CEF-076-116D	3	PE	250 ml	NaOH ZnAC	250 ml	3.37	Sulfide	PP
CEF-076-116D	3	CG	40 ml	HCL	40 ml	3.37	VOCs	RFPP
CEF-076-116D	2	AG	40 ml	None	40 ml	3.37	TIC	PP
CEF-076-116D	1	PE	500 ml	None	500 ml	3.37	Sulfate	PP
CEF-076-116D	2	AG	40 ml	HCL	40 ml	3.37	TOC	PP

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:

1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)

pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

GROUNDWATER SAMPLING LOG

SITE NAME: GW Sampling at North Fuel Farm Cecil Field		SITE LOCATION: Jacksonville	
WELL NO: CEF-076-49S	SAMPLE ID: 8030.08A2.NAVF/3:CEF-076-49S:10/9/08		DATE: 10/09/2008

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH (feet): 45 - 50	STATIC DEPTH TO WATER (feet): 4.78	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (50.00 feet – 4.78 feet) X 0.00 gallons/foot = 0.00 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
=0.00 gallons+(0.00 gallons/foot X 52.00 feet)+ 0.13 gallons = 0.26 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 48.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 48.00	PURGING INITIATED AT: 9:30	PURGING ENDED AT: 9:45	TOTAL VOLUME PURGED (gallons): 1.25

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	DEPTH TO WATER (feet)	pH (standard units)	ORP	TEMP.(°C)	SEC (uS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
9:37		0.50	4.78	2.21	291.70	25.45	3,005.00	1.90	23.20	clear	none
9:41	0.10	0.60	4.81	2.22	272.70	25.52	3,035.00	1.15	5.10	clear	none
9:44	0.65	1.25	4.84	2.20	295.00	25.57	3,050.00	0.91	4.59	clear	none

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings				Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L):	0.81	TEMP.(°C):	25.59	DO:	CO2:	DO High Range:	DO Low Range:
SEC(uS/cm):	3061	pH:	2.20	Alkalinity:	Ferrous Iron:	CO2 High Range:	DO Low Range:
ORP(mV):	281.6	TURB(NTU):	3.66	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:				Sulfate: Nitrate:	Sulfide:		

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Leif Hazlewood	SAMPLER(S) SIGNATURES: L H	SAMPLING INITIATED AT: 9:45	SAMPLING ENDED AT: 10:31
PUMP OR TUBING DEPTH IN WELL (feet): 48.00	SAMPLE PUMP FLOW RATE (mL per minute): 315.45	TUBING MATERIAL CODE: PPE	

FIELD DECONTAMINATION: ☑ Y ☐ N
FIELD-FILTERED: ☐ Y ☑ N
Filtration Equipment Type:
FILTER SIZE: NA
DUPLICATE: ☐ Y ☑ N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
CEF-076-49S	2	AG	1 L	H2SO4	1 L	2.20	TRPH	PP
CEF-076-49S	3	PE	250 ml	NaOH ZnAC	250 ml	2.20	Sulfide	PP
CEF-076-49S	2	AG	1 L	None	1 L	2.20	SVOCs	PP
CEF-076-49S	3	CG	40 ml	HCL	40 ml	2.20	VOCs	RFPP
CEF-076-49S	1	PE	500 ml	None	500 ml	2.20	Sulfate	PP
CEF-076-49S	2	AG	40 ml	None	40 ml	2.20	TIC	PP
CEF-076-49S	2	AG	40 ml	HCL	40 ml	2.20	TOC	PP

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:

1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)

pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

GROUNDWATER SAMPLING LOG

SITE NAME: GW Sampling at North Fuel Farm Cecil Field		SITE LOCATION: Jacksonville	
WELL NO: CEF-076-50I	SAMPLE ID: 8030.08A2.NAVF/3:CEF-076-50I:10/9/08		DATE: 10/09/2008

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH (feet): 75 - 80	STATIC DEPTH TO WATER (feet): 4.51	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (80.00 feet – 4.51 feet) X 0.00 gallons/foot = 0.00 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
=0.00 gallons+(0.00 gallons/foot X 82.00 feet)+ 0.13 gallons = 0.34 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 78.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 78.00	PURGING INITIATED AT: 11:17	PURGING ENDED AT: 11:25	TOTAL VOLUME PURGED (gallons): 0.80

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	DEPTH TO WATER (feet)	pH (standard units)	ORP	TEMP.(°C)	SEC (uS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
11:17		0.50	4.48	2.45	293.70	26.96	4,642.00	1.68	5.96	clear	none
11:21	0.10	0.60	4.49	2.47	217.80	26.93	4,746.00	1.24	5.29	clear	none
11:24	0.20	0.80	4.48	2.48	1,959.0(	27.03	4,766.00	1.09	5.42	clear	none

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings				Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L):	1.04	TEMP.(°C):	27.08	DO:	CO2:	DO High Range:	DO Low Range:
SEC(uS/cm):	4757	pH:	2.48	Alkalinity:	Ferrous Iron:	CO2 High Range:	DO Low Range:
ORP(mV):	184.0	TURB(NTU):	5.81	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:				Sulfate: Nitrate:	Sulfide:		

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Leif Hazlewood	SAMPLER(S) SIGNATURES: LH	SAMPLING INITIATED AT: 11:25	SAMPLING ENDED AT: 11:56
PUMP OR TUBING DEPTH IN WELL (feet): 78.00	SAMPLE PUMP FLOW RATE (mL per minute): 378.54	TUBING MATERIAL CODE: PPE	

FIELD DECONTAMINATION: ☑ Y ☐ N	FIELD-FILTERED: ☐ Y ☑ N Filtration Equipment Type:	FILTER SIZE: NA	DUPLICATE: ☐ Y ☑ N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
CEF-076-50I	2	AG	1 L	H2SO4	1 L	2.48	TRPH	PP
CEF-076-50I	2	AG	1 L	None	1 L	2.48	SVOCs	PP
CEF-076-50I	3	CG	40 ml	HCL	40 ml	2.48	VOCs	RFPP
CEF-076-50I	3	PE	250 ml	NaOH ZnAC	250 ml	2.48	Sulfide	PP
CEF-076-50I	2	AG	40 ml	HCL	40 ml	2.48	TOC	PP
CEF-076-50I	2	AG	40 ml	None	40 ml	2.48	TIC	PP
CEF-076-50I	1	PE	500 ml	None	500 ml	2.48	Sulfate	PP

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:

1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)

pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

GROUNDWATER SAMPLING LOG

SITE NAME: GW Sampling at North Fuel Farm Cecil Field		SITE LOCATION: Jacksonville	
WELL NO: CEF-076-57S	SAMPLE ID: 8030.08A2.NAVF/3:CEF-076-57S:10/10/08	DATE: 10/10/2008	

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH (feet): 30 - 35	STATIC DEPTH TO WATER (feet): 2.78	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (35.00 feet – 2.78 feet) X 0.00 gallons/foot = 0.00 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
=0.00 gallons+(0.00 gallons/foot X 37.00 feet)+ 0.13 gallons = 0.13 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 33.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 33.00	PURGING INITIATED AT: 11:23	PURGING ENDED AT: 11:40	TOTAL VOLUME PURGED (gallons): 0.90

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	DEPTH TO WATER (feet)	pH (standard units)	ORP	TEMP.(°C)	SEC (uS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
11:29		0.30	2.78	1.21	243.80	24.12	1,161.00	3.78	16.70	clear	none
11:34	0.30	0.60	2.79	1.18	221.70	23.95	1,120.00	2.35	11.40	clear	none
11:36	0.10	0.70	2.79	1.16	207.60	24.00	1,107.00	1.59	7.84		
11:39	0.20	0.90	2.79	1.14	196.70	23.94	1,103.00	1.29	6.84	clear	none

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings				Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L):	1.08	TEMP.(°C):	23.86	DO:	CO2:	DO High Range: 1	DO Low Range:
SEC(uS/cm):	1100	pH:	1.14	Alkalinity:	Ferrous Iron:	CO2 High Range:	DO Low Range:
ORP(mV):	189.6	TURB(NTU):	6.82	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:				Sulfate: Nitrate:	Sulfide:		

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Leif Hazlewood	SAMPLER(S) SIGNATURES: LH	SAMPLING INITIATED AT: 11:40	SAMPLING ENDED AT: 0:11
PUMP OR TUBING DEPTH IN WELL (feet): 33.00	SAMPLE PUMP FLOW RATE (mL per minute): 200.40	TUBING MATERIAL CODE: PPE	
FIELD DECONTAMINATION: ☑ Y ☐ N	FIELD-FILTERED: ☐ Y ☑ N Filtration Equipment Type:	FILTER SIZE: NA	DUPLICATE: ☐ Y ☑ N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
CEF-076-57S	2	AG	1 L	H2SO4	1 L	1.14	TRPH	PP
CEF-076-57S	2	AG	1 L	None	1 L	1.14	SVOCs	PP
CEF-076-57S	3	CG	40 ml	HCL	40 ml	1.14	VOCs	RFPP
CEF-076-57S	1	PE	500 ml	None	500 ml	1.14	Sulfate	PP
CEF-076-57S	3	PE	250 ml	NaOH ZnAC	250 ml	1.14	Sulfide	PP
CEF-076-57S	2	AG	40 ml	HCL	40 ml	1.14	TOC	PP
CEF-076-57S	2	AG	40 ml	None	40 ml	1.14	TIC	PP

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump
EQUIPMENT CODES: RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:

1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)

pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

GROUNDWATER SAMPLING LOG

SITE NAME: GW Sampling at North Fuel Farm Cecil Field		SITE LOCATION: Jacksonville	
WELL NO: CEF-076-61I	SAMPLE ID: 8030.08A2.NAVF/3:CEF-076-61I:10/10/08	DATE: 10/10/2008	

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH (feet): 65 - 70	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (70.00 feet – feet) X 0.00 gallons/foot = 0.00 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
=0.00 gallons+(0.00 gallons/foot X 72.00 feet)+ 0.13 gallons = 0.13 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 68.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 68.00	PURGING INITIATED AT: 13:25	PURGING ENDED AT: 15:43	TOTAL VOLUME PURGED (gallons): 2.30

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	DEPTH TO WATER (feet)	pH (standard units)	ORP	TEMP.(°C)	SEC (uS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
15:15		1.20	9.69		278.80	24.94	6,780.00	1.08	6.82	turbid	sulfuric
15:32	0.70	1.90	8.68		232.60	25.71	6,675.00	0.83	53.60		
15:36	0.20	2.10	8.72		240.30	25.87	6,670.00	0.78	31.40	turbid	sulfuric
15:39	0.10	2.20	8.76		237.00	25.80	6,654.00	0.78	23.10	turbid	sulfuric
15:42	0.10	2.30	8.76		238.90	25.33	6,586.00	0.80	18.20	turbid	sulfuric

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings				Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L):	0.80	TEMP.(°C):	25.33	DO:	CO2:	DO High Range:	DO Low Range:
SEC(uS/cm):	6586	pH:		Alkalinity:	Ferrous Iron:	CO2 High Range:	DO Low Range:
ORP(mV):	238.9	TURB(NTU):	18.2	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:				Sulfate: Nitrate:	Sulfide:		

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Leif Hazlewood	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 15:43	SAMPLING ENDED AT: 16:28
PUMP OR TUBING DEPTH IN WELL (feet): 68.00	SAMPLE PUMP FLOW RATE (mL per minute): 63.09	TUBING MATERIAL CODE:	

FIELD DECONTAMINATION: ☑ Y ☐ N
FIELD-FILTERED: ☐ Y ☑ N FILTER SIZE: NA
Filtration Equipment Type:
DUPLICATE: ☐ Y ☑ N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
CEF-076-61I	2	AG	1 L	H2SO4	1 L		TRPH	PP
CEF-076-61I	3	PE	250 ml	NaOH ZnAC	250 ml		Sulfide	PP
CEF-076-61I	3	CG	40 ml	HCL	40 ml		VOCs	RFPP
CEF-076-61I	2	AG	40 ml	HCL	40 ml		TOC	PP
CEF-076-61I	1	PE	500 ml	None	500 ml		Sulfate	PP
CEF-076-61I	2	AG	1 L	None	1 L		SVOCs	PP
CEF-076-61I	2	AG	40 ml	None	40 ml		TIC	PP

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:

1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)

pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

GROUNDWATER SAMPLING LOG

SITE NAME: GW Sampling at North Fuel Farm Cecil Field		SITE LOCATION: Jacksonville	
WELL NO: CEF-076-70I	SAMPLE ID: 8030.08A2.NAVF/3:CEF-076-70I:10/10/08		DATE: 10/10/2008

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches): 0.13	WELL SCREEN INTERVAL DEPTH (feet): 65 - 70	STATIC DEPTH TO WATER (feet): 4.11	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (70.00 feet – 4.11 feet) X 0.00 gallons/foot = 0.00 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
=0.00 gallons+(0.00 gallons/foot X 72.00 feet)+ 0.13 gallons = 0.18 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 68.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 68.00	PURGING INITIATED AT: 11:17	PURGING ENDED AT: 11:38	TOTAL VOLUME PURGED (gallons): 0.50

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	DEPTH TO WATER (feet)	pH (standard units)	ORP	TEMP.(°C)	SEC (uS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
11:29		0.20	4.27	2.75	280.50	26.48	5,220.00	1.44	11.20	yellow	none
11:32	0.10	0.30	4.27	2.76	258.20	26.48	5,247.00	1.13	7.30	yellow	none
11:35	0.10	0.40	4.27	2.77	246.90	26.47	5,267.00	1.01	5.44		

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings				Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L):	.91	TEMP.(°C):	26.51	DO:	CO2:	DO High Range:	DO Low Range: 0.7
SEC(uS/cm):	5268	pH:	2.78	Alkalinity:	Ferrous Iron:	CO2 High Range:	DO Low Range:
ORP(mV):	273.5	TURB(NTU):	4.81	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:				Sulfate: Nitrate:	Sulfide:		

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Burke Cathey	SAMPLER(S) SIGNATURES: BC	SAMPLING INITIATED AT: 11:38	SAMPLING ENDED AT: 12:07
PUMP OR TUBING DEPTH IN WELL (feet): 68.00	SAMPLE PUMP FLOW RATE (mL per minute): 90.13	TUBING MATERIAL CODE: PPE	

FIELD DECONTAMINATION: ☑ Y ☐ N | FIELD-FILTERED: ☐ Y ☑ N | FILTER SIZE: NA | DUPLICATE: ☐ Y ☑ N
Filtration Equipment Type:

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
CEF-076-70I	2	AG	1 L	H2SO4	1 L	2.78	TRPH	PP
CEF-076-70I	2	AG	1 L	None	1 L	2.78	SVOCs	PP
CEF-076-70I	3	CG	40 ml	HCL	40 ml	2.78	VOCs	RFPP
CEF-076-70I	3	PE	250 ml	NaOH ZnAC	250 ml	2.78	Sulfide	PP
CEF-076-70I	2	AG	40 ml	None	40 ml	2.78	TIC	PP
CEF-076-70I	2	AG	40 ml	HCL	40 ml	2.78	TOC	PP
CEF-076-70I	1	PE	500 ml	None	500 ml	2.78	Sulfate	PP

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:

1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)

pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

GROUNDWATER SAMPLING LOG

SITE NAME: GW Sampling at North Fuel Farm Cecil Field		SITE LOCATION: Jacksonville	
WELL NO: CEF-076-93S	SAMPLE ID: 8030.08A2.NAVF/3:CEF-076-93S:10/10/08		DATE: 10/10/2008

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH (feet): 25 - 30	STATIC DEPTH TO WATER (feet): 6.12	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (30.00 feet – 6.12 feet) X 0.00 gallons/foot = 0.00 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
=0.00 gallons+(0.00 gallons/foot X 32.00 feet)+ 0.13 gallons = 0.21 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 28.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 28.00	PURGING INITIATED AT: 14:15	PURGING ENDED AT: 14:43	TOTAL VOLUME PURGED (gallons): 1.00

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	DEPTH TO WATER (feet)	pH (standard units)	ORP	TEMP.(°C)	SEC (uS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
14:24		0.30	6.72	6.11	-175.20	27.39	282.00	2.95	9.99	yellow	none
14:27	0.20	0.50	6.73	6.11	-172.60	27.38	279.00	2.67	53.40	yellow	none
14:31	0.10	0.60	6.67	6.11	-171.10	27.50	276.00	3.62	53.90	yellow	none
14:35	0.20	0.80	6.65	6.13	-177.50	27.37	273.00	1.64	51.20	yellow	none
14:39	0.10	0.90	6.65	6.11	-177.80	27.39	271.00	1.45	51.30	yellow	none

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings				Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L):	1.44	TEMP.(°C):	27.53	DO:	CO2:	DO High Range:	DO Low Range:
SEC(uS/cm):	270	pH:	6.12	Alkalinity:	Ferrous Iron:	CO2 High Range:	DO Low Range:
ORP(mV):	-178.9	TURB(NTU):	51.3	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:				Sulfate: Nitrate:	Sulfide:		

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dawn Marshall	SAMPLER(S) SIGNATURES: JC	SAMPLING INITIATED AT: 14:43	SAMPLING ENDED AT: 14:43
PUMP OR TUBING DEPTH IN WELL (feet): 28.00	SAMPLE PUMP FLOW RATE (mL per minute): 135.19	TUBING MATERIAL CODE: PPE	

FIELD DECONTAMINATION: ☑ Y ☐ N
FIELD-FILTERED: ☐ Y ☑ N
Filtration Equipment Type:
FILTER SIZE: NA
DUPLICATE: ☐ Y ☑ N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
CEF-076-93S	2	AG	1 L	H2SO4	1 L	6.12	TRPH	PP
CEF-076-93S	1	PE	500 ml	None	500 ml	6.12	Sulfate	PP
CEF-076-93S	2	AG	40 ml	None	40 ml	6.12	TIC	PP
CEF-076-93S	3	CG	40 ml	HCL	40 ml	6.12	VOCs	RFPP
CEF-076-93S	2	AG	40 ml	HCL	40 ml	6.12	TOC	PP
CEF-076-93S	2	AG	1 L	None	1 L	6.12	SVOCs	PP
CEF-076-93S	3	PE	250 ml	NaOH ZnAC	250 ml	6.12	Sulfide	PP

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:

1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)

pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

GROUNDWATER SAMPLING LOG

SITE NAME: GW Sampling at North Fuel Farm Cecil Field		SITE LOCATION: Jacksonville	
WELL NO: CEF-076-94S	SAMPLE ID: 8030.08A2.NAVF/3:CEF-076-94S:10/10/08		DATE: 10/10/2008

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH (feet): 5 - 15	STATIC DEPTH TO WATER (feet): 7.21	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (15.00 feet – 7.21 feet) X 0.00 gallons/foot = 0.00 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
=0.00 gallons+(0.00 gallons/foot X 17.00 feet)+ 0.13 gallons = 0.13 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 13.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 13.00	PURGING INITIATED AT: 15:03	PURGING ENDED AT: 15:28	TOTAL VOLUME PURGED (gallons): 1.25

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	DEPTH TO WATER (feet)	pH (standard units)	ORP	TEMP.(°C)	SEC (uS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
15:13		0.25	7.40	5.30	116.90	27.66	190.00	0.49	8.15	clear	none
15:16	0.25	0.50	7.41	4.80	108.80	27.61	191.00	0.48	5.25	clear	none
15:19	0.25	0.75	7.41	4.60	88.80	27.63	193.00	0.41	5.48	clear	none
15:22	0.25	1.00	7.40	4.50	81.20	27.56	194.00	0.39	4.96	clear	none

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings				Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L):	0.38	TEMP.(°C):	27.50	DO:	CO2:	DO High Range:	DO Low Range:
SEC(uS/cm):	195	pH:	4.5	Alkalinity:	Ferrous Iron:	CO2 High Range:	DO Low Range:
ORP(mV):	77.9	TURB(NTU):	3.52	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:				Sulfate: Nitrate:	Sulfide:		

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Josh Clay	SAMPLER(S) SIGNATURES: JC	SAMPLING INITIATED AT: 15:28	SAMPLING ENDED AT: 15:48
PUMP OR TUBING DEPTH IN WELL (feet): 13.00	SAMPLE PUMP FLOW RATE (mL per minute): 189.27	TUBING MATERIAL CODE:	

FIELD DECONTAMINATION: ☑ Y ☐ N
FIELD-FILTERED: ☐ Y ☑ N FILTER SIZE: NA DUPLICATE: ☐ Y ☑ N
Filtration Equipment Type:

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
CEF-076-94S	2	AG	40 ml	None	40 ml	4.5	TIC	PP
CEF-076-94S	3	PE	250 ml	NaOH ZnAC	250 ml	4.5	Sulfide	PP
CEF-076-94S	2	AG	1 L	None	1 L	4.5	SVOCs	PP
CEF-076-94S	3	CG	40 ml	HCL	40 ml	4.5	VOCs	RFPP
CEF-076-94S	2	AG	1 L	H2SO4	1 L	4.5	TRPH	PP
CEF-076-94S	1	PE	500 ml	None	500 ml	4.5	Sulfate	PP
CEF-076-94S	2	AG	40 ml	HCL	40 ml	4.5	TOC	PP

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump
EQUIPMENT CODES: RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:

1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)

pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

GROUNDWATER SAMPLING LOG

SITE NAME: GW Sampling at North Fuel Farm Cecil Field		SITE LOCATION: Jacksonville	
WELL NO: CEF-076-95S	SAMPLE ID: 8030.08A2.NAVF/3:CEF-076-95S:10/10/08		DATE: 10/10/2008

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches): 0.38	WELL SCREEN INTERVAL DEPTH (feet): 5 - 15	STATIC DEPTH TO WATER (feet): 5.62	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (15.00 feet – 5.62 feet) X 0.00 gallons/foot = 0.00 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
=0.00 gallons+(0.01 gallons/foot X 17.00 feet)+ 0.13 gallons = 0.23 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 13.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 13.00	PURGING INITIATED AT: 8:50	PURGING ENDED AT: 9:16	TOTAL VOLUME PURGED (gallons): 0.50

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	DEPTH TO WATER (feet)	pH (standard units)	ORP	TEMP.(°C)	SEC (uS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
9:02		0.10	5.89	5.93	-85.20	23.58	169.00	2.86	10.10	clear	none
9:05	0.10	0.20	5.91	5.91	-92.50	23.71	153.00	2.33	10.00	clear	none
9:08	0.10	0.30	5.91	5.91	-90.60	23.81	151.00	1.89	10.40	clear	none
9:14	0.10	0.40	5.91	5.90	-96.10	23.89	147.00	1.78	9.90		

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings				Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L):	1.7	TEMP.(°C):	23.91	DO:	CO2:	DO High Range:	DO Low Range:
SEC(uS/cm):	146	pH:	5.89	Alkalinity:	Ferrous Iron:	CO2 High Range:	DO Low Range:
ORP(mV):	-95	TURB(NTU):	11.2	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:				Sulfate: Nitrate:	Sulfide:		

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Burke Cathey	SAMPLER(S) SIGNATURES: BC	SAMPLING INITIATED AT: 9:16	SAMPLING ENDED AT: 10:07
PUMP OR TUBING DEPTH IN WELL (feet): 13.00	SAMPLE PUMP FLOW RATE (mL per minute): 72.80	TUBING MATERIAL CODE: PPE	

FIELD DECONTAMINATION: ☑ Y ☐ N	FIELD-FILTERED: ☐ Y ☑ N Filtration Equipment Type:	FILTER SIZE: NA	DUPLICATE: ☐ Y ☑ N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
CEF-076-95S	2	AG	1 L	H2SO4	1 L	5.89	TRPH	PP
CEF-076-95S	2	AG	1 L	None	1 L	5.89	SVOCs	PP
CEF-076-95S	3	CG	40 ml	HCL	40 ml	5.89	VOCs	RFPP
CEF-076-95S	2	AG	40 ml	HCL	40 ml	5.89	TOC	PP
CEF-076-95S	3	PE	250 ml	NaOH ZnAC	250 ml	5.89	Sulfide	PP
CEF-076-95S	1	PE	500 ml	None	500 ml	5.89	Sulfate	PP
CEF-076-95S	2	AG	40 ml	None	40 ml	5.89	TIC	PP

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump
EQUIPMENT CODES: RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:

1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)

pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

GROUNDWATER SAMPLING LOG

SITE NAME: GW Sampling at North Fuel Farm Cecil Field		SITE LOCATION: Jacksonville	
WELL NO: CEF-076-98D	SAMPLE ID: 8030.08A2.NAVF/3:CEF-076-98D:10/9/08		DATE: 10/09/2008

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches): 0.13	WELL SCREEN INTERVAL DEPTH (feet): 105 - 110	STATIC DEPTH TO WATER (feet): 7.96	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (110.00 feet – 7.96 feet) X 0.00 gallons/foot = 0.00 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
=0.00 gallons+(0.00 gallons/foot X 112.00feet)+ 0.13 gallons = 0.20 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 108.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 108.00	PURGING INITIATED AT: 13:06	PURGING ENDED AT: 13:26	TOTAL VOLUME PURGED (gallons): 0.40

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	DEPTH TO WATER (feet)	pH (standard units)	ORP	TEMP.(°C)	SEC (uS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
13:17		0.10	8.24	3.29	151.20	28.79	2,454.00	2.45	13.00	clear	none
13:20	0.10	0.20	8.29	3.24	136.10	25.79	2,523.00	2.47	11.60	clear	none
13:24	0.10	0.30	8.31	3.23	138.90	25.75	2,487.00	2.39	10.00		

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings				Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L):	2.21	TEMP.(°C):	25.77	DO:	CO2:	DO High Range:	DO Low Range: 0.8
SEC(uS/cm):	2568	pH:	3.23	Alkalinity:	Ferrous Iron:	CO2 High Range:	DO Low Range:
ORP(mV):	132.1	TURB(NTU):	7.07	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:				Sulfate: Nitrate:	Sulfide:		

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Burke Cathey	SAMPLER(S) SIGNATURES: BC	SAMPLING INITIATED AT: 13:26	SAMPLING ENDED AT: 13:49
PUMP OR TUBING DEPTH IN WELL (feet): 108.00	SAMPLE PUMP FLOW RATE (mL per minute): 75.71	TUBING MATERIAL CODE: PPE	

FIELD DECONTAMINATION: ☑ Y ☐ N | FIELD-FILTERED: ☐ Y ☑ N | FILTER SIZE: NA | DUPLICATE: ☐ Y ☑ N
Filtration Equipment Type:

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
CEF-076-98D	2	AG	40 ml	HCL	40 ml	3.23	TOC	PP
CEF-076-98D	2	AG	1 L	H2SO4	1 L	3.23	TRPH	PP
CEF-076-98D	2	AG	40 ml	None	40 ml	3.23	TIC	PP
CEF-076-98D	2	AG	1 L	None	1 L	3.23	SVOCs	PP
CEF-076-98D	3	PE	250 ml	NaOH ZnAC	250 ml	3.23	Sulfide	PP
CEF-076-98D	3	CG	40 ml	HCL	40 ml	3.23	VOCs	RFPP
CEF-076-98D	1	PE	500 ml	None	500 ml	3.23	Sulfate	PP

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:

1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)

pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

GROUNDWATER SAMPLING LOG

SITE NAME: GW Sampling at North Fuel Farm Cecil Field		SITE LOCATION: Jacksonville	
WELL NO: CEF-076-99D	SAMPLE ID: 8030.08A2.NAVF/3:CEF-076-99D:10/9/08		DATE: 10/09/2008

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches): 0.13	WELL SCREEN INTERVAL DEPTH (feet): 95 - 100	STATIC DEPTH TO WATER (feet): 7.62	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (100.00 feet – 7.62 feet) X 0.00 gallons/foot = 0.00 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
=0.00 gallons+(0.00 gallons/foot X 102.00feet)+ 0.13 gallons = 0.20 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 98.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 98.00	PURGING INITIATED AT: 14:23	PURGING ENDED AT: 14:43	TOTAL VOLUME PURGED (gallons): 0.40

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	DEPTH TO WATER (feet)	pH (standard units)	ORP	TEMP.(°C)	SEC (uS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
14:34		0.10	8.39	5.88	-29.30	27.19	710.00	1.93	9.01	clear	none
14:37	0.10	0.20	8.42	5.94	-30.40	27.26	704.00	1.62	7.20	clear	none
14:40	0.10	0.30	8.45	6.00	-29.10	27.27	690.00	1.33	6.86		

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings				Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L):	1.09	TEMP.(°C):	27.28	DO:	CO2:	DO High Range:	DO Low Range:
SEC(uS/cm):	707	pH:	6.04	Alkalinity:	Ferrous Iron:	CO2 High Range:	DO Low Range:
ORP(mV):	-27.2	TURB(NTU):	5.49	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:				Sulfate: Nitrate:	Sulfide:		

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Burke Cathey	SAMPLER(S) SIGNATURES: BC	SAMPLING INITIATED AT: 14:43	SAMPLING ENDED AT: 15:31
PUMP OR TUBING DEPTH IN WELL (feet): 98.00	SAMPLE PUMP FLOW RATE (mL per minute): 75.71	TUBING MATERIAL CODE: PPE	

FIELD DECONTAMINATION: ☑ Y ☐ N | FIELD-FILTERED: ☐ Y ☑ N | FILTER SIZE: NA | DUPLICATE: ☐ Y ☑ N
Filtration Equipment Type:

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
CEF-076-99D	3	PE	250 ml	NaOH ZnAC	250 ml	6.04	Sulfide	PP
CEF-076-99D	2	AG	40 ml	HCL	40 ml	6.04	TOC	PP
CEF-076-99D	1	PE	500 ml	None	500 ml	6.04	Sulfate	PP
CEF-076-99D	3	CG	40 ml	HCL	40 ml	6.04	VOCs	RFPP
CEF-076-99D	2	AG	1 L	None	1 L	6.04	SVOCs	PP
CEF-076-99D	2	AG	40 ml	None	40 ml	6.04	TIC	PP
CEF-076-99D	2	AG	1 L	H2SO4	1 L	6.04	TRPH	PP

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:

1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)

pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

GROUNDWATER SAMPLING LOG

SITE NAME: GW Sampling at North Fuel Farm Cecil Field		SITE LOCATION: Jacksonville	
WELL NO: CEF-372-13R	SAMPLE ID: 8030.08A2.NAVF/3:CEF-372-13R:10/9/08		DATE: 10/09/2008

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH (feet): 1.5 - 11.5	STATIC DEPTH TO WATER (feet): 4.70	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (10.95 feet – 4.70 feet) X 0.00 gallons/foot = 0.00 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
=0.00 gallons+(0.00 gallons/foot X 12.95 feet)+ 0.13 gallons = 0.17 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8.95	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8.95	PURGING INITIATED AT: 15:00	PURGING ENDED AT: 15:13	TOTAL VOLUME PURGED (gallons): 0.75

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	DEPTH TO WATER (feet)	pH (standard units)	ORP	TEMP.(°C)	SEC (uS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
15:04		0.30	4.75	5.93	66.50	25.67	544.00	1.15	75.10	turbid	none
15:08	0.30	0.60	4.76	6.23	87.90	25.76	514.00	0.99	58.00	turbid	none
15:12	0.15	0.75	4.77	6.36	100.40	25.76	503.00	0.86	7.71	clear	none

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings				Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L):	0.81	TEMP.(°C):	25.75	DO: 0.3	CO2:	DO High Range:	DO Low Range:
SEC(uS/cm):	500	pH:	6.40	Alkalinity:	Ferrous Iron:	CO2 High Range:	DO Low Range:
ORP(mV):	99.2	TURB(NTU):	5.31	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:				Sulfate: Nitrate:	Sulfide:		

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Leif Hazlewood	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 15:13	SAMPLING ENDED AT: 15:42
PUMP OR TUBING DEPTH IN WELL (feet): 8.95	SAMPLE PUMP FLOW RATE (mL per minute): 218.39	TUBING MATERIAL CODE: PPE	
FIELD DECONTAMINATION: ☑ Y ☐ N	FIELD-FILTERED: ☐ Y ☑ N Filtration Equipment Type:	FILTER SIZE: NA	DUPLICATE: ☐ Y ☑ N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
CEF-372-13R	1	PE	500 ml	None	500 ml	6.40	Sulfate	PP
CEF-372-13R	2	AG	40 ml	None	40 ml	6.40	TIC	PP
CEF-372-13R	2	AG	1 L	H2SO4	1 L	6.40	TRPH	PP
CEF-372-13R	2	AG	1 L	None	1 L	6.40	SVOCs	PP
CEF-372-13R	3	CG	40 ml	HCL	40 ml	6.40	VOCs	RFPP
CEF-372-13R	3	PE	250 ml	NaOH ZnAC	250 ml	6.40	Sulfide	PP
CEF-372-13R	2	AG	40 ml	HCL	40 ml	6.40	TOC	PP

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

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APPENDIX B

LABORATORY ANALYTICAL REPORT AND CHAIN-OF-CUSTODY FORMS