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NAS CECIL FIELD, FL
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OCTOBER 2008 QUARTERLY MONITORING REPORT FOR BUILDING 271 NAS CECIL
FIELD FL
12/22/2008
SOLUTIONS-IES INC

**OCTOBER 2008
QUARTERLY
MONITORING REPORT**

**BUILDING 271
NAS CECIL FIELD
JACKSONVILLE, FL**

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

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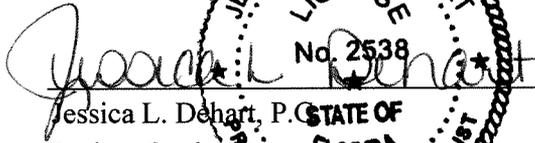
SOLUTIONS-IES PROJECT NO. 8030.08A2.NAVF

DECEMBER 22, 2008

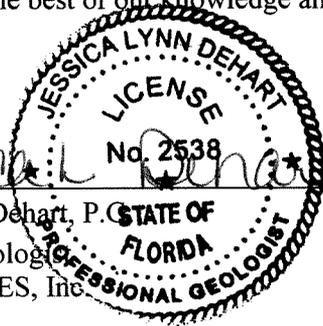


SIGNATURE PAGE

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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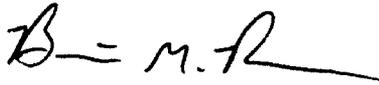


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TABLE OF CONTENTS

1.0 INTRODUCTION.....	1
1.1 SITE LOCATION AND DESCRIPTION.....	1
1.2 SITE HISTORY	1
2.0 GROUNDWATER MONITORING SUMMARY	2
2.1 MONITORING WELL OBSERVATIONS.....	3
2.2 WATER LEVEL MEASUREMENTS.....	3
2.3 GROUNDWATER SAMPLING	4
2.3.1 Methodology.....	4
2.3.2 Laboratory Analyses.....	4
2.4 INVESTIGATION DERIVED WASTE (IDW)	5
3.0 SAMPLING AND ANALYTICAL RESULTS.....	5
3.1 DATA VALIDATION	5
3.2 GROUNDWATER RESULTS.....	5
4.0 CONCLUSIONS AND RECOMMENDATIONS	6

Figures

- Figure 1 – Site Location Map
- Figure 2 – Well Location Map
- Figure 3 – Groundwater Contour Map
- Figure 4 – Concentration Map
- Figure 5 – Historical PAHs in CEF-271-07S

Tables

- Table 1 – Groundwater Elevations
- Table 2 – Field Analytical Results
- Table 3 – Laboratory Analytical Results

APPENDICES

- Appendix A** Groundwater Sampling Logs
- Appendix B** Laboratory Analytical Results and Chain-of-Custody Forms

1.0 INTRODUCTION

Solutions-IES, Inc. (Solutions-IES) has been contracted by the Navy (NAVFAC Southeast), to provide long-term groundwater monitoring services at Building 271, 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. This Third Quarter Monitoring Report details the activities performed at the site in October 2008.

1.1 SITE LOCATION AND DESCRIPTION

The Building 271 site is located at the corner of Cecil Pines Street (formerly 9th Street) and Pool Side Avenue (formerly "B" Avenue) 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 July 31, 2007 ESA Environmental Specialists, Inc., Operation and Maintenance Status Report.

Building 271 was a former retail gasoline facility that had four underground storage tanks (USTs), identified as 271-D, 271-R, 271-UL and 271-SUL, along with two oil water separators. The USTs were located in a tank pit on the west side of Building 271, and the oil water separators (OWSs) were located on the east side of the building. Three of the USTs had an approximate capacity of 10,000 gallons, and one had approximately 6,000 gallons of capacity.

UST closure records indicate that UST 271-D and associated piping was removed from the site on March 5, 1996. No soil or groundwater contamination was detected at this time. However, a Confirmatory Sampling report, prepared in July 1999 for the USTs and two OWSs, indicated that petroleum-impacted soil was encountered at two locations due to operation of the USTs. At this time, a Site Assessment was recommended and a Plan was prepared.

Subsequent to completion of assessment activities, the three remaining USTs and associated piping were removed from the site. Soil contamination issues were addressed at this time by excavation. However,

groundwater samples collected after removal activities indicated the presence of volatile organic compounds (VOCs). A second investigation was recommended and planned at this time to further define the extent of groundwater contamination.

Both OWSs were removed from the site, and Limited Closure Assessment Reports were prepared and submitted to the Florida Department of Environmental Protection (FDEP) in April 2001. These reports indicated that no petroleum contamination existed in the soil or groundwater surrounding the OWSs. A May 2002 Site Assessment Report concluded that petroleum constituents remained in groundwater in the vicinity of the former USTs though soil impacts had previously been removed. Preparation of a Remedial Action Plan (RAP) to address groundwater impacts at the site was recommended.

A RAP was prepared and submitted to the FDEP by Tetra Tech NUS, Inc. in September 2002, with an Addendum submitted in January 2003. Air Sparge (AS) was the selected remediation technology selected for this site. FDEP approval for these documents was received in February 2003.

The AS system was installed at the site from September through November 2003 and the AS system began operation on November 17, 2003. The remediation system remains on the site but was not operational during the October 2008 sampling event.

2.0 GROUNDWATER MONITORING SUMMARY

During this monitoring event, the wells listed below were gauged for water levels and sampled for benzene, toluene, ethylbenzene and xylenes (BTEX), methyl-tert-butyl-ether (MTBE), polycyclic aromatic hydrocarbons (PAHs), total residual 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-271-07S	BTEX & MTBE, PAHs, TRPH and NA
CEF-271-09S	BTEX & MTBE, PAHs, TRPH and NA
CEF-271-10S	BTEX & MTBE, PAHs, TRPH and NA
CEF-271-127S	BTEX & MTBE, PAHs, TRPH and NA

Analysis	Constituents	Analytical Method
VOCs	BTEX & MTBE	8260B
PAHs	16 listed 1-methylnaphthalene 2-methylnaphthalene	8270C-SIM
TRPH		FL-PRO
NA Parameters	Dissolved Oxygen	CHEMetrics® Kit
Field Parameters	Temperature pH Conductivity	Direct-reading meter

2.1 MONITORING WELL OBSERVATIONS

The wells where water levels were measured, along with those that were sampled, were examined for damage during the October 2008 sampling event. The field team noted no extensive damage (i.e., the need for well replacement or abandonment) to the wells during the October 2008 event.

2.2 WATER LEVEL MEASUREMENTS

Depth-to-groundwater measurements were recorded for the four wells listed below, on October 7, 2008.

Table 1 shows historical groundwater measurements at the site.

Well ID	Date	TOC Elevation (ft AMSL)	Depth to Water (ft below TOC)	Water Level Elevation (ft AMSL)
CEF-271-07S	10/7/08	79.99	5.02	74.97
CEF-271-09S	10/7/08	80.51	5.62	74.89
CEF-271-10S	10/7/08	81.18	6.32	74.86
CEF-271-12S	10/7/08	80.19	5.44	74.75

TOC – top of casing

AMSL – above mean sea level

TOC elevations obtained from ESA Environmental Services, Inc. July 31, 2007 report

Based on this information, groundwater appears to flow towards the southeast at Building 271. A groundwater contour map, showing the groundwater elevations measured during the October 2008 event has been included as **Figure 3**.

2.3 GROUNDWATER SAMPLING

2.3.1 Methodology

Groundwater sampling was conducted at the Building 271 site on October 7, 2008. Four monitoring wells (CEF-271-07S, CEF-271-09S, CEF-271-10S and CEF-271-12S) were purged and sampled using low-flow methodology.

Wells were purged immediately prior to sampling using a low flow peristaltic pump, at a rate equal or less than the groundwater recharge rate, until field parameters (temperature, pH, conductivity, turbidity, dissolved oxygen [DO] and oxidation reduction potential [ORP]) stabilized. Water levels in the wells were continuously monitored to maintain a drawdown of less than 0.3 feet.

Samples were collected for field analysis of dissolved oxygen using CHEMetrics[®] field test kits. Results of the field measurements 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 via courier to Accutest Laboratories Southeast, Inc. (Accutest), a Florida-certified, National Environmental Laboratory Accreditation Program (NELAP) certified laboratory, located in Orlando, under Chain-of-Custody procedures.

2.3.2 Laboratory Analyses

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

- BTEX and MTBE by EPA Method 8260B
- PAHs by EPA Method 8270C-SIM
- TRPH by FL-PRO

A Level II data report was provided by the laboratory.

2.4 INVESTIGATION DERIVED WASTE (IDW)

Purge, wash and rinse water was collected in 5-gallon containers and transferred to a labeled 55-gallon drum (Drum # 1). The drum was staged in the IDW Storage Building (Building 536). The NAS Jacksonville Public Works Department (PWD-JAX) was notified on October 13, 2008 that the drum was being kept in the building. The non-hazardous data package for disposal was forwarded to PWD-JAX on November 14, 2008.

3.0 SAMPLING AND ANALYTICAL RESULTS

3.1 DATA VALIDATION

Accutest data analysts validated the data according to laboratory Standard Operating Procedures (SOPs). None of the data were rejected as a result of the data review. However, as indicated in the laboratory case narrative, MSD recoveries for several PAH constituents were outside of control limits. This was attributed to matrix interference. The validation also resulted in several data qualifiers. These are shown with the analyte concentrations in **Table 3**.

A limited data review was also performed by Solutions-IES. The data review evaluated data completeness, holding time compliance, laboratory blank contamination and detection limits.

3.2 GROUNDWATER RESULTS

Results from the third quarter 2008 sampling event, along with historical sampling results can be found in **Table 3**. Two wells contained detectable levels of constituents during this reporting period: CEF-271-07S and CEF-271-12S. The constituents included naphthalene, 1-methylnaphthalene and TRPH.

This quarter, naphthalene, 1-methylnaphthalene and TRPH were all detected in monitoring well CEF-271-07S. Both naphthalene and 1-methylnaphthalene have exceeded their respective GCTLs in previous sampling events. However, neither constituent exceeded during the October event. The historical concentrations for the previous four sampling events at monitoring well CEF-271-07S are illustrated in **Figure 4**. This is the first sampling event since February 2006 that the concentration of naphthalene has not exceeded the GCTL of 14 µg/L.

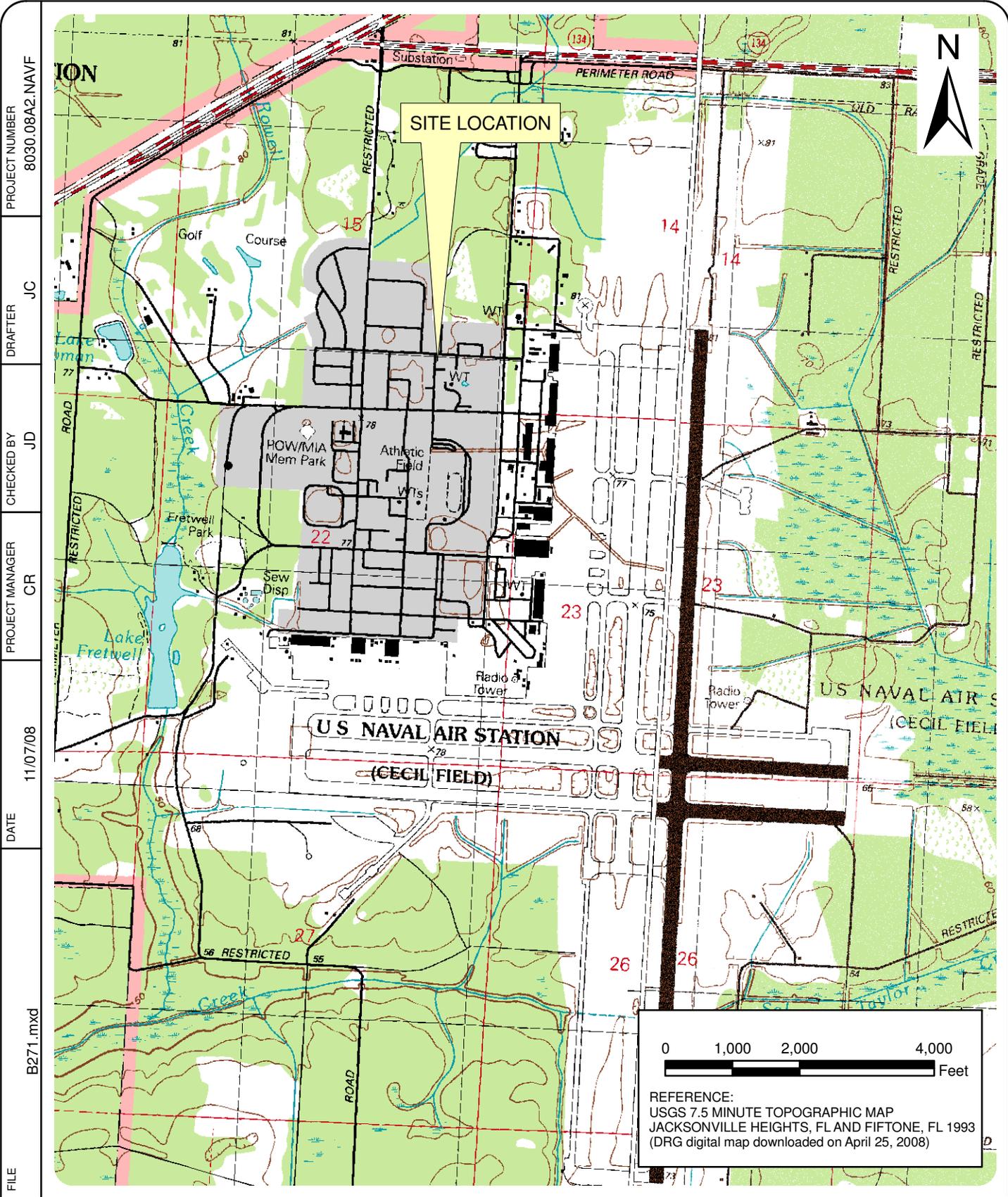
TRPH was detected in wells CEF-271-07S and CEF-271-12S this quarter. The concentration of 414 µg/L in well CEF-271-07S was significantly lower than the GCTL (5,000 µg/L), and the concentration in well CEF-271-12S (164 µg/L) was greater than the method detection limit but less than the reporting limit, and significantly lower than the GCTL (5,000 µg/L). The October 2008 laboratory analytical report is included in **Appendix B**.

4.0 CONCLUSIONS AND RECOMMENDATIONS

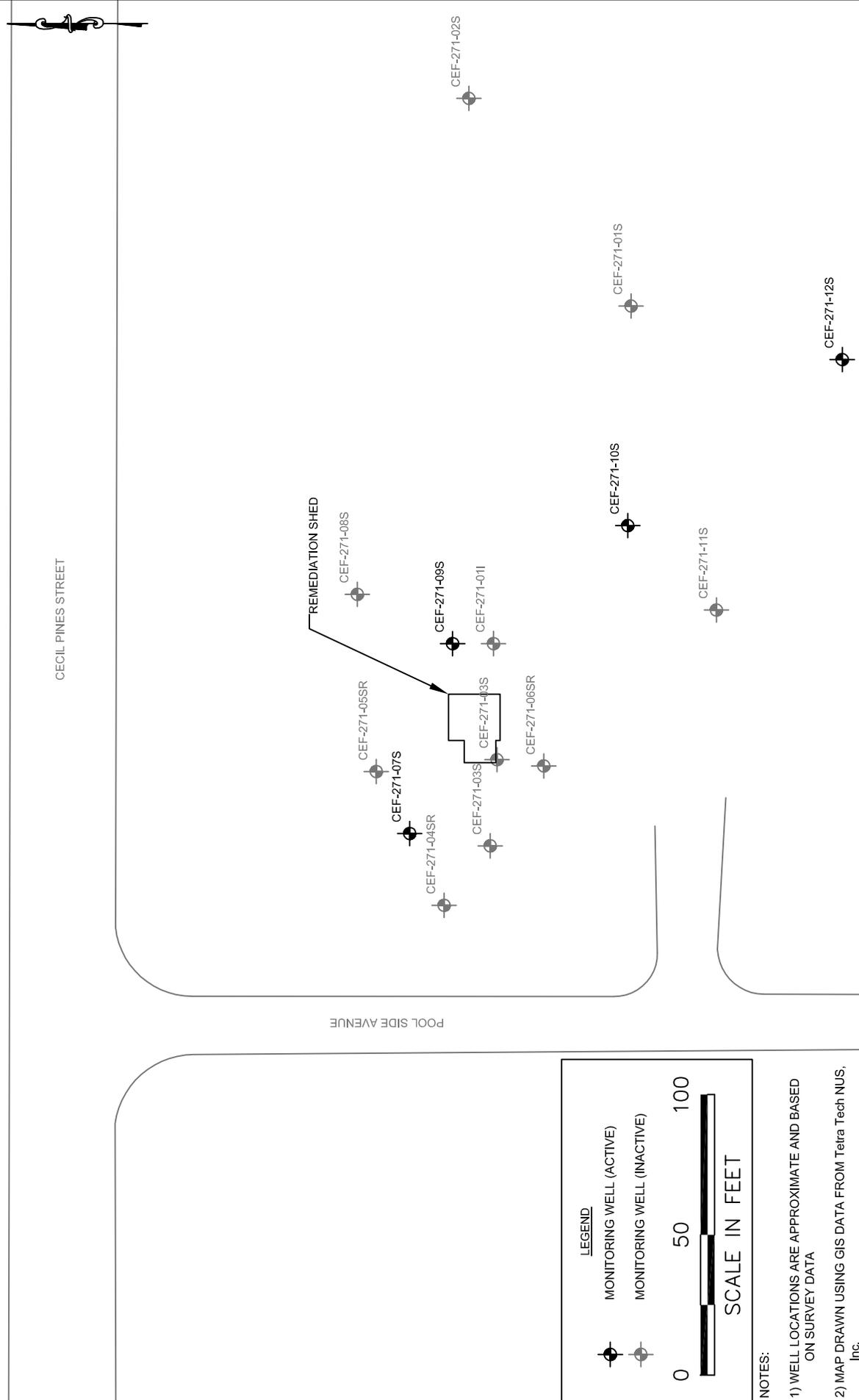
Water level data suggests that groundwater at this site flows in a southeasterly direction. Though naphthalene, 1-methylnaphthalene and TRPH were detected during this sampling event, no constituents exceeded the GCTLs. In general, concentrations of contaminants of concern have decreased since the last reporting period.

No changes have been made to the monitoring plan since Solutions-IES was awarded this contract in August 2008. The October 2008 sampling was conducted in general accordance with previous sampling events and the scope of work provided to Solutions-IES upon contract award. Based on analytical results obtained to date, Solutions-IES recommends continuing quarterly water level measurements and groundwater sampling at wells CEF-271-07S, CEF-271-09S, CEF-271-10S and CEF-271-12S for constituents of concern, as performed in October 2008.

FIGURES



FILE	Figure2.PDF	DATE	12/5/08	PROJECT MANAGER	CR	CHECKED BY	JD	DRAFTER	JC	PROJECT NUMBER	8030.08A2.NAVF
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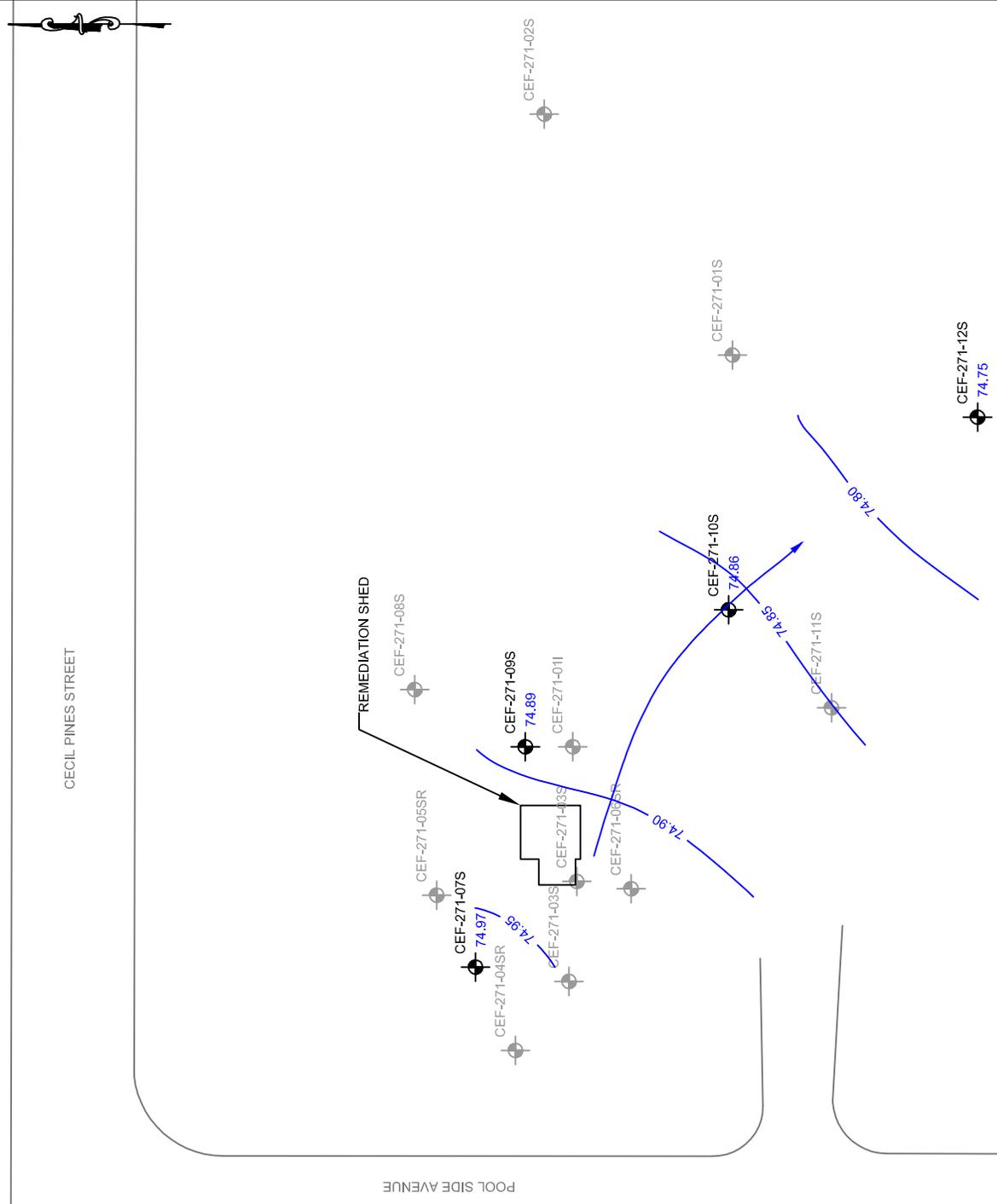


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WELL LOCATION MAP
BUILDING 271 - NAS CECIL FIELD
JACKSONVILLE, FL
OCTOBER 2008

FIGURE: 2

FILE	DATE	PROJECT MANAGER	CHECKED BY	DRAFTER	PROJECT NUMBER
Figure3.PDF	12/5/08	CR	JD	JC	8030.08A2.NAVF



LEGEND

- MONITORING WELL (ACTIVE)
- MONITORING WELL (INACTIVE)
- GROUNDWATER CONTOUR
- IMPLIED DIRECTION OF GROUNDWATER FLOW
- GROUNDWATER ELEVATION (ft amsl)

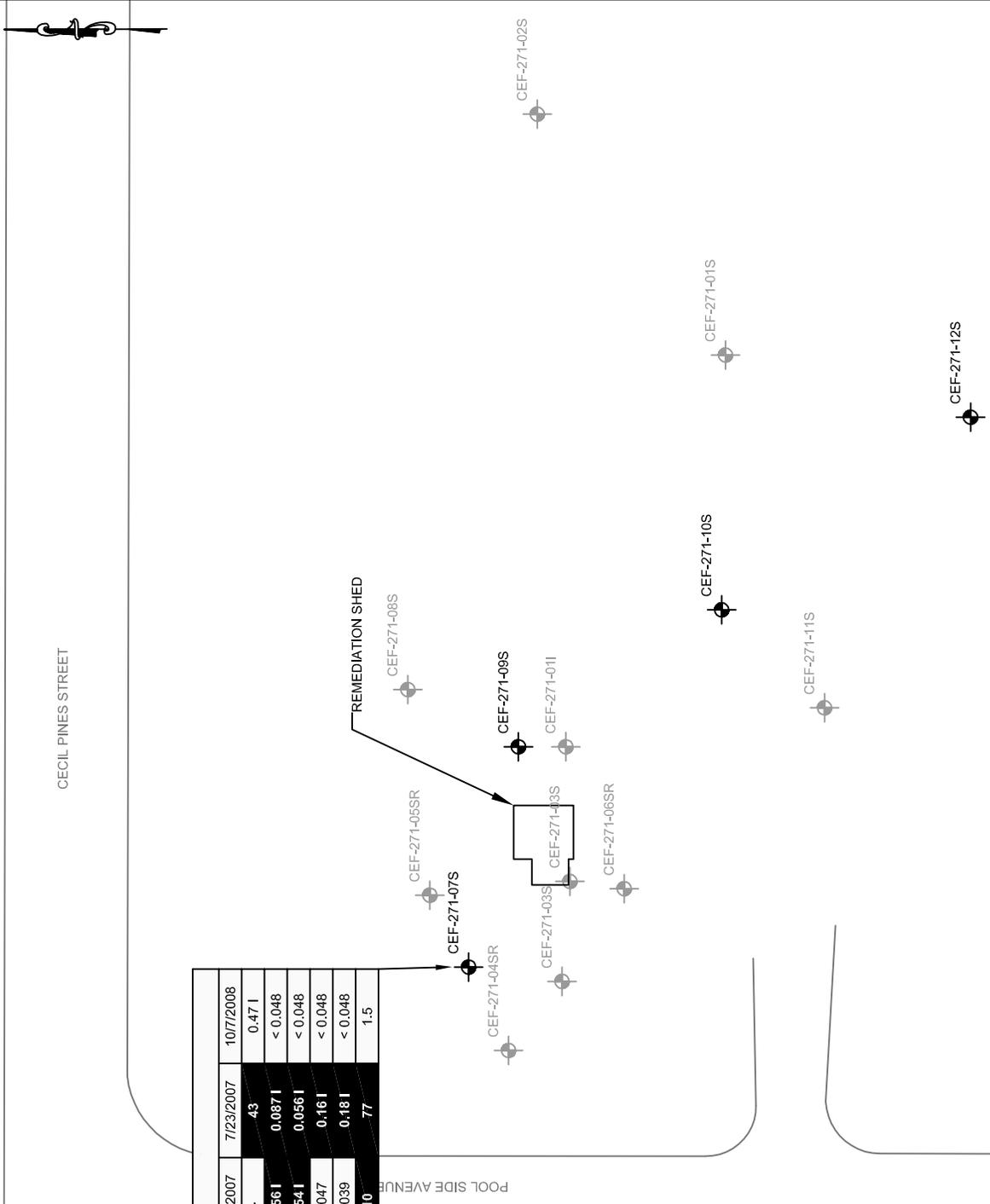
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SCALE IN FEET

- NOTES:**
- 1) WATER LEVELS MEASURED 10/07/08
 - 2) WELL LOCATIONS ARE APPROXIMATE AND BASED ON SURVEY DATA
 - 3) MAP DRAWN USING GIS DATA FROM Tetra Tech NUS, Inc.

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GROUNDWATER CONTOUR MAP
BUILDING 271 - NAS CECIL FIELD
JACKSONVILLE, FL
OCTOBER 2008

FIGURE:
3



CEF-271-07S			
	11/18/2006	4/18/2007	7/23/2007
1-Methylnaphthalene (µg/L)	-	-	43
Benzo(a)anthracene (µg/L)	< 0.029	0.056 I	0.087 I
Benzo(b)fluoranthene (µg/L)	< 0.025	0.054 I	0.056 I
Dibenzo(a,h)anthracene (µg/L)	< 0.047	< 0.047	0.16 I
Indeno(1,2,3-cd)pyrene (µg/L)	< 0.039	< 0.039	0.18 I
Naphthalene (µg/L)	49	210	77
			1.5

LEGEND

- MONITORING WELL (ACTIVE)
- MONITORING WELL (INACTIVE)
- EXCEEDENCE OF GCTL

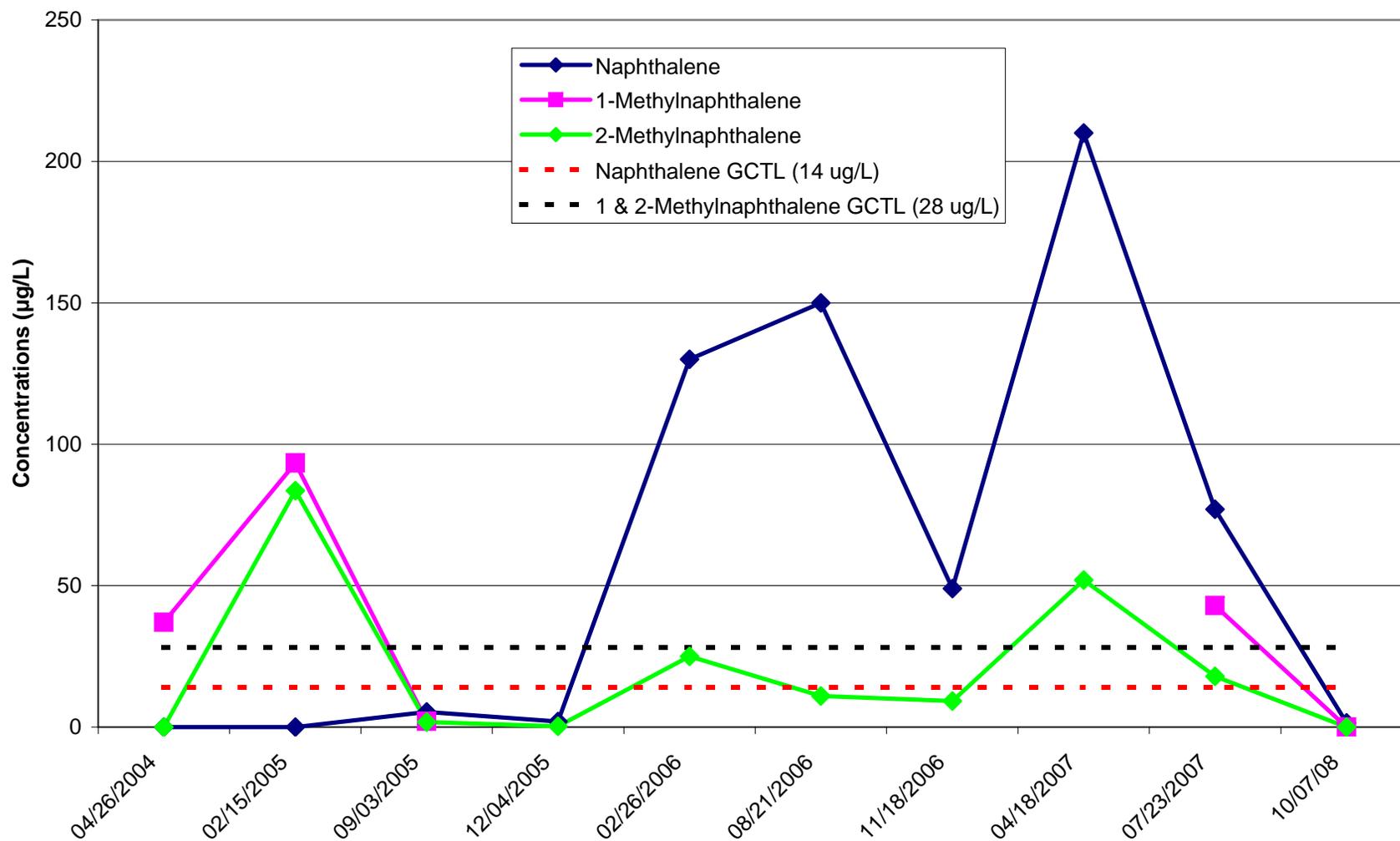
49

0 50 100

SCALE IN FEET

- NOTES:**
- GCTL - GROUNDWATER CLEANUP TARGET LEVEL.
 - WELL LOCATIONS ARE APPROXIMATE AND BASED ON SURVEY DATA.
 - MAP DRAWN USING GIS DATA FROM Tetra Tech NUS, Inc.
 - SEE REPORT TABLE 3 FOR QUALIFIER DEFINITIONS

FIGURE 5
Historical PAHs In CEF-271-07S



TABLES

**TABLE 1
GROUNDWATER ELEVATIONS**

BUILDING 271
NAS CECIL FIELD
JACKSONVILLE, FLORIDA

Well ID	Date Measured	Top of Casing Elevation (ft AMSL)	Depth to Groundwater (below TOC)	Ground Water Elevation (ft AMSL)
CEF-271-07S	10/2003	79.99	5.69	74.30
	11/12/2003		9.39	70.6
	11/24/2003		7.67	72.32
	12/1/2003		7.25	72.74
	12/8/2003		8.53	71.46
	12/15/2003		9.27	70.72
	1/2004		8.11	71.88
	3/2004		10.23	69.76
	6/2004		8.54	71.45
	9/2004		3.46	76.53
	12/2004		6.63	73.36
	9/2005		4.92	75.07
	12/2005		6.33	73.66
	2/2006		4.49	75.5
	8/2006		9.79	70.2
	4/2007		9.98	70.01
7/2007	8.85	71.14		
10/7/2008	5.02	74.97		
CEF-271-09S	10/2003	80.51	6.23	74.28
	11/12/2003		9.69	70.82
	11/24/2003		8.93	71.58
	12/1/2003		8.66	71.85
	12/8/2003		9.62	70.89
	12/15/2003		10.21	70.3
	1/2004		8.58	71.93
	3/2004		10.51	70
	6/2004		9.15	71.36
	9/2004		3.91	76.6
	12/2004		6.88	73.63
	9/2005		5.53	74.98
	12/2005		6.95	73.56
	2/2006		6.14	74.37
	8/2006		10.41	70.1
	4/2007		10.83	69.68
7/2007	9.44	71.07		
10/7/2008	5.62	74.89		
CEF-271-10S	10/2003	81.18	6.95	74.23
	11/12/2003		9.91	71.27
	11/24/2003		9.16	72.02
	12/1/2003		8.86	72.32
	12/8/2003		9.03	72.15
	12/15/2003		10.28	70.9
	1/2004		9.55	71.63
	3/2004		10.86	70.32
	6/2004		9.98	71.2
	9/2004		4.63	76.55
	12/2004		7.65	73.53
	9/2005		6.29	74.89
	12/2005		7.70	73.48
	2/2006		6.92	74.26
	8/2006		11.16	70.02
	4/2007		11.64	69.54
7/2007	10.90	70.28		
10/7/2008	6.32	74.86		
CEF-271-12S	10/2003	80.19	6.30	73.89
	11/12/2003		8.66	71.53
	11/24/2003		8.20	71.99
	12/1/2003		8.08	72.11
	12/8/2003		8.18	72.01
	12/15/2003		8.58	71.61
	1/2004		8.92	71.27
	3/2004		9.36	70.83
	6/2004		9.21	70.98
	9/2004		3.71	76.48
	12/2004		6.56	73.63
	9/2005		5.41	74.78
	12/2005		6.83	73.36
	2/2006		6.55	73.64
	8/2006		10.29	69.9
	4/2007		11.31	68.88
7/2007	9.32	70.87		
10/7/2008	5.44	74.75		

NOTES: TOC = top of casing
AMSL = above mean sea level

**TABLE 2
FIELD ANALYTICAL RESULTS**

BUILDING 271
NAS CECIL FIELD JACKSONVILLE, FLORIDA

Well ID	Date Measured	Temperature (°C)	pH (S.U.)	Specific Conductance (µs/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (ntu)
CEF-271-07S	10/7/2008	26.89	7.67	681	0.26	-132	4
CEF-271-09S	10/7/2008	28.59	8.15	262	3.23	-45.9	69
CEF-271-10S	10/7/2008	27.24	7.06	438	5.25	58	5.54
CEF-271-12S	10/7/2008	23.65	6.44	368	3.56	61.9	30.7

- Notes: 1) mg/L = Micrograms per liter
 2) SU = Standard units
 3) mV = Millivolts
 4) mV = Millivolts mS/cm = MilliSiemens per centimeter
 5) NTU = Nephelometric turbidity unit
 6) °C = Degrees Celsius

**TABLE 3
LABORATORY ANALYTICAL RESULTS**

BUILDING 271
NAS CECIL FIELD
JACKSONVILLE, FLORIDA

WELL ID	SAMPLE DATE	VOLATILE ORGANIC COMPOUNDS (µg/L)					POLYCYCLIC AROMATIC HYDROCARBONS (µg/L)																	TRPH (C8-C40)		
		BENZENE	ETHYLBENZENE	METHYL TERT-BUTYL ETHER	TOTAL XYLENES	TOLUENE	1-METHYLNAPHTHALENE	2-METHYLNAPHTHALENE	ACENAPHTHENE	ACENAPHTHYLENE	ANTHRACENE	BENZO(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZO(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE		PYRENE	
GCTL (µg/L)		1	30	20	20	40	28	28	20	210	2100	0.05	0.2	0.05	210	0.5	4.8	0.005	280	280	0.05	14	210	210	5000	
CEF-271-07S	08/24/2001	89	520	11	3300	2900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<4100	
	10/28/2003	<188	<398	<50	<1690	<1180	<21.1	<58.9	<20	<117	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<10	<184	<4.19	<2	-	
	04/26/2004	324 J	<133	<25	17.2 J	16.7 J	37 J	<74	<50	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<25	<12.5	<476	<7.78	<5	-
	06/24/2004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6/24/2004**	165 J	<14	2.1 J	48.2 J	4.42 J	<44.5	<86.3	<20	<157	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<10	<5	<422	<2	<2	-
	09/24/2004	<32.2	<6.37	1.12 J	<58.2	3.65 J	<24.1	<43.6	<10	<90.3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.17 J	<2.5	<178	<4.31	<1	-
	02/15/2005	<5	<50	<50	2910 J	<123	93.4 J	83.6 J	<100	<266	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<25	<430	<10	<10	-
	09/03/2005	3.8	3.2	<1.1	-	18	2.1	1.8	0.19 I	<0.13	<0.08	<0.11	<0.094	<0.081	<0.092	<0.082	<0.06	<0.1	0.098 I	0.12 I	<0.15	5.4	0.22 I	<0.12	-	-
	12/04/2005	<0.21	<0.17	<0.35	-	<0.23	-	0.32 I	0.15 I	<0.13	<0.08	<0.11	<0.094	<0.081	<0.092	<0.082	<0.06	<0.1	0.13 I	0.12 I	<0.15	2	0.20 I	0.13 I	-	-
	02/26/2006	0.51 I	13	<0.35	-	15	-	25	1.2 I	<0.51	<0.32	<0.45	<0.38	<0.32	<0.37	<0.33	<0.24	<0.41	<0.34	0.76 I	<0.59	130	1 I	<0.48	-	-
	08/21/2006	<0.21	15	<0.35	-	8.3	-	11	1	<0.13	0.13 I	0.046 I	<0.023	0.028 I	<0.092	<0.082	<0.06	<0.047	0.20 I	0.53	<0.039	150	0.47	0.22 I	-	-
	11/18/2006	<0.63	5.8	<1.1	-	<0.69	-	9.2	0.65	<0.13	0.089 I	<0.029	<0.023	<0.025	<0.092	<0.082	<0.06	<0.047	0.27 I	0.46	<0.039	49	0.44	0.30 I	-	-
	04/18/2007	<0.63	11	<1	-	<0.69	-	52	2.5	<0.13	0.22 I	0.056 I	0.052 I	0.054 I	<0.092	<0.082	0.06 I	<0.047	0.52	1.6	<0.039	210	2.2	0.56	-	-
07/23/2007	<0.63	2.9	<1	16.8	<0.69	43	18	3.3	<0.13	0.69	0.087 I	0.061 I	0.056 I	0.13 I	<0.082	0.10 I	0.16 I	1.1	2.1	0.18 I	77	4.4	0.92	-	-	
10/7/2008	<0.4	<0.43	<0.26	<1.2	<0.35	0.47 I	<0.24	<0.48	<0.48	<0.48	<0.048	<0.048	<0.048	<0.048	<0.048	<0.096	<0.048	<0.24	<0.48	<0.048	1.5	<0.24	<0.24	414	-	
CEF-271-09S	08/24/2001	9.8	36	<10	1600	270	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1600	
	10/23/2003	<1.93	<25.8	<5	<98.5	<20.3	0.536 J	1.13 J	<1	3.05 J	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.25	5.89 J	<0.1	<0.1	-	
	04/26/2004	<0.5	<5	<5	3.06 J	<5	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.25	<0.25	<0.1	<0.1	-	
	4/26/2004**	<0.5	<5	<5	3.12 J	<5	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.25	<0.25	<0.1	<0.1	-	
	06/24/2004	<0.5	<5	<5	<10	<5	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.25	<0.25	<0.1	<0.1	-	
	09/24/2004	<0.5	<5	<5	<10	<5	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.25	<0.25	<0.1	<0.1	-	
	02/15/2005	<0.5	<5	<5	<10	<5	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.25	<0.25	<0.1	<0.1	-	
	09/03/2005	<0.21	<0.17	<0.35	-	<0.23	<0.12	<0.18	<0.13	<0.13	<0.081	<0.11	<0.095	<0.081	<0.093	<0.083	<0.06	<0.1	<0.085	<0.11	<0.15	<0.15	<0.1	<0.12	-	
	12/04/2005	<0.21	<0.17	<0.35	-	<0.23	-	<0.18	<0.13	<0.13	<0.08	<0.11	<0.094	<0.081	<0.092	<0.082	<0.06	<0.1	<0.084	<0.1	<0.15	<0.15	<0.1	<0.12	-	
	02/27/2006	<0.21	<0.17	<0.35	-	<0.23	-	<0.18	<0.13	<0.13	<0.08	<0.11	<0.094	<0.081	<0.092	<0.082	<0.06	<0.1	<0.084	<0.1	<0.15	<0.15	<0.1	<0.12	-	
	08/21/2006	<0.21	<0.17	<0.35	-	<0.23	-	<0.18	<0.13	<0.13	<0.08	0.041 I	0.026 I	0.029 I	<0.092	<0.082	<0.06	<0.047	<0.084	<0.1	<0.039	0.18 I	<0.1	<0.12	-	
	11/18/2006	<0.21	<0.17	<0.35	-	<0.23	-	<0.18	<0.13	<0.13	<0.08	<0.029	<0.023	<0.025	<0.092	<0.082	<0.06	<0.047	<0.084	<0.1	<0.039	<0.15	<0.1	<0.12	-	
	04/18/2007	<0.21	<0.17	<0.35	-	<0.23	-	<0.18	<0.13	<0.13	<0.08	<0.029	<0.023	<0.025	<0.092	<0.082	<0.06	<0.047	<0.084	<0.1	<0.039	<0.15	<0.1	<0.12	-	
07/23/2007	<0.21	<0.17	<0.35	<0.63	<0.23	<0.12	<0.18	<0.13	<0.13	<0.08	<0.029	<0.023	<0.025	<0.092	<0.082	<0.06	<0.047	<0.084	<0.1	<0.039	<0.15	<0.1	<0.12	-		
10/7/2008	<0.4	<0.43	<0.26	<1.2	<0.35	<0.24	<0.24	<0.48	<0.48	<0.48	<0.048	<0.048	<0.048	<0.048	<0.048	<0.048	<0.048	<0.24	<0.48	<0.048	<0.24	<0.24	<0.24	<160		

**TABLE 3
LABORATORY ANALYTICAL RESULTS**

BUILDING 271
NAS CECIL FIELD
JACKSONVILLE, FLORIDA

WELL ID	SAMPLE DATE	VOLATILE ORGANIC COMPOUNDS (µg/L)					POLYCYCLIC AROMATIC HYDROCARBONS (µg/L)																	TRPH (C8-C40)		
		BENZENE	ETHYLBENZENE	METHYL TERT-BUTYL ETHER	TOTAL XYLENES	TOLUENE	1-METHYLNAPHTHALENE	2-METHYLNAPHTHALENE	ACENAPHTHENE	ACENAPHTHYLENE	ANTHRACENE	BENZO(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	CHRYSENE	DIBENZO(A,H)ANTHRACENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE		PYRENE	
GCTL (µg/L)		1	30	20	20	40	28	28	20	210	2100	0.05	0.2	0.05	210	0.5	4.8	0.005	280	280	0.05	14	210	210	5000	
CEF-271-10S	08/24/2001	1.8	1.2	<10	8	6.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1000
	10/27/2003	0.50 U	<5	<5	<10	<5	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.25	<0.25	<0.1	<0.1	-
	04/27/2004	<0.5	<5	<5	<10	<5	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.25	<0.25	<0.1	<0.1	-
	6/24/2004**	<0.5	<5	<5	<10	<5	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.25	<0.25	<0.1	<0.1	-
	09/24/2004	<0.5	<5	<5	<10	<5	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.25	<0.25	<0.1	<0.1	-
	02/15/2005	<0.5	<5	<5	<10	<5	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.25	<0.25	<0.1	<0.1	-
	09/03/2005	<0.21	<0.17	<0.35	-	<0.23	<0.12	<0.18	<0.13	<0.13	<0.081	<0.11	<0.095	<0.081	<0.093	<0.083	<0.06	<0.1	<0.085	<0.11	<0.15	<0.15	<0.1	<0.12	-	
	12/04/2005	<0.21	<0.17	<0.35	-	<0.23	-	<0.18	<0.13	<0.13	<0.08	<0.11	<0.094	<0.081	<0.092	<0.082	<0.06	<0.1	<0.084	<0.1	<0.15	<0.15	<0.1	<0.12	-	
	02/26/2006	<0.21	<0.17	<0.35	-	<0.23	-	<0.18	<0.13	<0.13	<0.08	<0.11	<0.094	<0.081	<0.092	<0.082	<0.06	<0.1	<0.084	<0.1	<0.15	<0.15	<0.1	<0.12	-	
	08/24/2006	<0.21	<0.17	<0.35	-	<0.23	-	<0.18	<0.13	<0.13	<0.08	<0.029	<0.023	<0.025	<0.092	<0.082	<0.06	<0.047	<0.084	<0.1	<0.039	<0.15	<0.1	<0.12	-	
	11/18/2006	<0.21	<0.17	<0.35	-	<0.23	-	<0.18	<0.13	<0.13	<0.08	<0.029	<0.023	<0.025	<0.092	<0.082	<0.06	<0.047	<0.084	<0.1	<0.039	<0.15	<0.1	<0.12	-	
04/18/2007	<0.21	<0.17	<0.35	-	<0.23	-	<0.18	<0.13	<0.13	<0.08	<0.029	<0.023	<0.025	<0.092	<0.082	<0.06	<0.047	<0.084	<0.1	<0.039	<0.15	<0.1	<0.12	-		
07/23/2007	<0.21	<0.17	<0.35	<0.63	<0.23	<0.12	<0.18	<0.13	<0.13	<0.08	<0.029	<0.023	<0.025	<0.092	<0.082	<0.06	<0.047	<0.084	<0.1	<0.039	<0.15	<0.1	<0.12	-		
10/7/2008	<0.4	<0.43	<0.26	<1.2	<0.35	<0.24	<0.24	<0.48	<0.48	<0.048	<0.048	<0.048	<0.048	<0.048	<0.048	<0.048	<0.048	<0.24	<0.48	<0.048	<0.24	<0.24	<0.24	<160		
CEF-271-12S	08/23/2001	0.44 J	<1	<5	<2	0.35 J	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1000
	10/23/2003	<0.5	<5	<5	<10	<5	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.25	<0.25	<0.1	<0.1	-	
	04/27/2004	<0.5	<5	<5	<10	<5	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.25	<0.25	<0.1	<0.1	-	
	06/24/2004	<2.04	<5	0.281 J	<10	<5	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.25	<0.25	<0.1	<0.1	-	
	09/24/2004	<0.5	<5	<5	<10	<5	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.25	<0.25	<0.1	<0.1	-	
	02/15/2005	<0.5	<5	<5	<10	<5	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.25	<0.25	<0.1	<0.1	-	
	09/03/2005	<0.21	<0.17	<0.35	-	<0.23	<0.12	<0.18	<0.13	<0.13	<0.08	<0.11	<0.094	<0.081	<0.092	<0.082	<0.06	<0.1	<0.084	<0.1	<0.15	<0.15	<0.1	<0.12	-	
	12/04/2005	<0.21	<0.17	<0.35	-	<0.23	-	<0.18	<0.13	<0.13	<0.08	<0.11	<0.094	<0.081	<0.092	<0.082	<0.06	<0.1	<0.084	<0.1	<0.15	<0.15	<0.1	<0.12	-	
	02/26/2006	<0.21	<0.17	<0.35	-	<0.23	-	<0.18	<0.13	<0.13	<0.08	<0.11	<0.094	<0.081	<0.092	<0.082	<0.06	<0.1	<0.084	<0.1	<0.15	<0.15	<0.1	<0.12	-	
	08/24/2006	<0.21	<0.17	<0.35	-	<0.23	-	<0.18	<0.13	<0.13	<0.08	<0.029	<0.023	<0.025	<0.092	<0.082	<0.06	<0.047	<0.084	<0.1	<0.039	<0.15	<0.1	<0.12	-	
	11/18/2006	<0.21	<0.17	<0.35	-	<0.23	-	<0.18	<0.13	<0.13	<0.08	<0.029	<0.023	<0.025	<0.092	<0.082	<0.06	<0.047	<0.084	<0.1	<0.039	<0.15	<0.1	<0.12	-	
04/18/2007	<0.21	<0.17	<0.35	-	<0.23	-	<0.18	<0.13	<0.13	<0.08	<0.029	<0.023	<0.025	<0.092	<0.082	<0.06	<0.047	<0.084	<0.1	<0.039	<0.15	<0.1	<0.12	-		
07/23/2007	<0.21	<0.17	<0.35	0.63	<0.23	<0.12	<0.18	<0.13	<0.13	<0.08	<0.029	<0.023	<0.025	<0.092	<0.082	<0.06	<0.047	<0.084	<0.1	<0.039	<0.15	<0.1	<0.12	-		
10/7/2008	<0.4	<0.43	<0.26	<1.2	<0.35	<0.24	<0.24	<0.48	<0.48	<0.048	<0.048	<0.048	<0.048	<0.048	<0.048	<0.048	<0.048	<0.24	<0.48	<0.048	<0.24	<0.24	<0.24	164 I		

- NOTES: 1) Bold indicates values above the method detection limit.
2) J = Estimated Concentration
3) I = Result > = MDL but < RL
4) Shading indicates > GCTL
5) "-" indicates that results are not available.
6) ND = Not detected above the laboratory reporting limit.
7) GCTL - Groundwater Cleanup Target Level

APPENDIX A

GROUNDWATER SAMPLING LOGS

GROUNDWATER SAMPLING LOG

SITE NAME: GW Sampling at Building 271 Cecil Field	SITE LOCATION: Jacksonville
WELL NO: CEF-271-07S	SAMPLE ID: 8030.08A2.NAVF/1:CEF-271-07S/10/7/08
	DATE: 10/07/2008

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH (feet): 2.7 - 12.7	STATIC DEPTH TO WATER (feet): 5.07	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) = (12.70 feet - 5.07 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 14.70 feet) + 0.13 gallons = 0.17 gallons											
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10.70	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10.70	PURGING INITIATED AT: 10:01	PURGING ENDED AT: 10:18	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)
10:10		0.10	5.19	7.67	-129.00	27.19	694.00	0.32	5.01	clear	none
10:13	0.10	0.20	5.21	7.69	-143.00	27.19	687.00	0.31	4.96	clear	none
10:16	0.20	0.40	5.22	7.69	-141.20	27.15	682.00	0.27	4.00	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): .26	TEMP.(°C): 26.89	DO:	CO2:	DO High Range:	DO Low Range: 0.2		
SEC(uS/cm): 681	pH: 7.67	Alkalinity:	Ferrous Iron:	CO2 High Range:	DO Low Range:		
ORP(mV): -132	TURB(NTU): 4.0	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:		
Salinity:		Sulfate:	Sulfide:				
		Nitrate:					

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Burke Cathey		SAMPLER(S) SIGNATURES:		SAMPLING INITIATED AT: 10:18		SAMPLING ENDED AT: 10:32		
PUMP OR TUBING DEPTH IN WELL (feet): 10.70		SAMPLE PUMP FLOW RATE (mL per minute): 111.34		TUBING MATERIAL CODE: PPE				
FIELD DECONTAMINATION: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N		FIELD-FILTERED: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N		FILTER SIZE: NA		DUPLICATE: <input type="checkbox"/> Y <input checked="" type="checkbox"/> 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-271-07S	3	CG	40 ml	HCL	40 ml	7.67	VOCs	PP
CEF-271-07S	2	AG	1 L	None	1 L	7.67	SVOCs	PP
CEF-271-07S	2	AG	1 L	HCL	1 L	7.67	TRPH	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:**
- The above do not constitute all of the information required by Chapter 62-160, F.A.C.
 - 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 Building 271 Cecil Field	SITE LOCATION: Jacksonville
WELL NO: CEF-271-09S	SAMPLE ID: 8030.08A2.NAVF/1:CEF-271-09S/10/7/08
	DATE: 10/07/2008

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH (feet): 2.7 - 12.7	STATIC DEPTH TO WATER (feet): 5.64	PURGE PUMP TYPE OR SAMPLER: Peristaltic
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WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY
 (only fill out if applicable)
 = (12.70 feet - 5.64 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 14.70 feet) + 0.13 gallons = 0.17 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10.70	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10.70	PURGING INITIATED AT: 11:08	PURGING ENDED AT: 11:48	TOTAL VOLUME PURGED (gallons): 0.90
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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)
11:15		0.10	5.94	8.61	-61.00	28.40	266.00	3.84	133.00	turbid	none
11:21	0.15	0.25	5.99	8.52	-56.70	27.46	258.00	3.66	96.80	turbid	none
11:25	0.15	0.40	6.02	8.44	-58.60	27.19	253.00	3.52	111.00	turbid	none
11:30	0.10	0.50	6.04	8.37	-60.20	27.11	252.00	3.52	64.10		
11:35	0.10	0.60	6.05	8.32	-61.30	26.99	250.00	3.33	63.70		
11:40	0.20	0.80	6.05	8.19	-49.20	27.16	257.00	3.11	62.90		

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): 3.23 SEC(uS/cm): 262 ORP(mV): -45.9 Salinity:	TEMP.(°C): 28.59 pH: 8.15 TURB(NTU): 69.0	DO: CO2: Ferrous Iron: Maganese: Sulfide:
	Alkalinity: H2S: Sulfate: Nitrate:	DO High Range: 4 DO Low Range: CO2 High Range: Alkalinity High Range: Alkalinity Low Range:

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Leif Hazlewood	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 11:48	SAMPLING ENDED AT: 0:15
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PUMP OR TUBING DEPTH IN WELL (feet): 10.70	SAMPLE PUMP FLOW RATE (mL per minute): 85.17	TUBING MATERIAL CODE: PPE
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FIELD DECONTAMINATION: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	FIELD-FILTERED: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	FILTER SIZE: NA	DUPLICATE: <input type="checkbox"/> Y <input checked="" type="checkbox"/> 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-271-09S	2	AG	1 L	None	1 L	8.15	SVOCs	PP
CEF-271-09S	2	AG	1 L	HCL	1 L	8.15	TRPH	PP
CEF-271-09S	3	CG	40 ml	HCL	40 ml	8.15	VOCs	RFPP

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:**
- The above do not constitute all of the information required by Chapter 62-160, F.A.C.
 - 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 Building 271 Cecil Field	SITE LOCATION: Jacksonville
WELL NO: CEF-271-10S	SAMPLE ID: 8030.08A2.NAVF/1:CEF-271-10S/10/7/08
	DATE: 10/07/2008

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches): 0.38	WELL SCREEN INTERVAL DEPTH (feet): 3.1 - 13.1	STATIC DEPTH TO WATER (feet): 6.35	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) = (13.10 feet - 6.35 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 15.10 feet) + 0.13 gallons = 0.22 gallons											
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 11.10	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 11.10	PURGING INITIATED AT: 10:32	PURGING ENDED AT: 10:54	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)
10:40		0.40	6.65	7.03	44.50	26.93	441.00	5.38	19.60	clear	none
10:43	0.10	0.50	6.64	7.03	53.70	27.12	437.00	5.24	10.80	clear	none
10:47	0.20	0.70	6.62	7.06	58.00	27.24	438.00	5.25	5.54	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): 5.25 SEC(uS/cm): 438 ORP(mV): 58 Salinity:	TEMP.(°C): 27.24 pH: 7.06 TURB(NTU): 5.54	DO: CO2: Ferrous Iron: Maganese: Sulfide: Alkalinity High Range: DO Low Range: DO Low Range: Alkalinity Low Range:

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Josh Clay	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 10:54	SAMPLING ENDED AT: 11:07					
PUMP OR TUBING DEPTH IN WELL (feet): 11.10	SAMPLE PUMP FLOW RATE (mL per minute): 137.65	TUBING MATERIAL CODE: PPE						
FIELD DECONTAMINATION: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	FIELD-FILTERED: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	FILTER SIZE: NA	DUPLICATE: <input type="checkbox"/> Y <input checked="" type="checkbox"/> 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-271-10S	2	AG	1 L	HCL	1 L	7.06	TRPH	PP
CEF-271-10S	3	CG	40 ml	HCL	40 ml	7.06	VOCs	RFPP
CEF-271-10S	2	AG	1 L	None	1 L	7.06	SVOCs	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:**
- The above do not constitute all of the information required by Chapter 62-160, F.A.C.
 - 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 Building 271 Cecil Field	SITE LOCATION: Jacksonville
WELL NO: CEF-271-12S	SAMPLE ID: 8030.08A2.NAVF/1:CEF-271-12S/10/7/08
DATE: 10/07/2008	

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches): 0.38	WELL SCREEN INTERVAL DEPTH (feet): 3.1 - 13.1	STATIC DEPTH TO WATER (feet): 5.49	PURGE PUMP TYPE OR SAMPLER: Peristaltic
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WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY
 (only fill out if applicable) = (13.10 feet - 5.49 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 14.00 feet) + 0.13 gallons = 0.21 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10.00	PURGING INITIATED AT: 9:18	PURGING ENDED AT: 9:43	TOTAL VOLUME PURGED (gallons): 0.65
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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)
9:31		0.30	5.72	6.53	62.10	23.66	363.00	4.22	39.90	clear	none
9:36	0.10	0.40	4.72	6.47	61.90	23.68	365.00	3.95	35.50	clear	none
9:40	0.10	0.50	4.72	6.45	61.80	23.67	366.00	3.68	33.60	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): 3.56 SEC(uS/cm): 368 ORP(mV): 61.9 Salinity:	TEMP.(°C): 23.65 pH: 6.44 TURB(NTU): 30.7	DO: DO High Range: 4 CO2: CO2 High Range: Ferrous Iron: Maganese: Sulfide: Alkalinity High Range:
	Alkalinity: H2S: Sulfate: Nitrate:	DO Low Range: DO Low Range: Alkalinity Low Range:

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Josh Clay	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 9:43	SAMPLING ENDED AT: 10:18
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PUMP OR TUBING DEPTH IN WELL (feet): 10.00	SAMPLE PUMP FLOW RATE (mL per minute): 98.42	TUBING MATERIAL CODE: PPE
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FIELD DECONTAMINATION: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	FIELD-FILTERED: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	FILTER SIZE: NA	DUPLICATE: <input type="checkbox"/> Y <input checked="" type="checkbox"/> 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-271-12S	2	AG	1 L	HCL	1 L	6.44	TRPH	PP
CEF-271-12S	2	AG	1 L	None	1 L	6.44	SVOCs	PP
CEF-271-12S	3	CG	40 ml	HCL	40 ml	6.44	8260	RFPP

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:**
- The above do not constitute all of the information required by Chapter 62-160, F.A.C.
 - 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)

APPENDIX B

LABORATORY ANALYTICAL RESULTS AND CHAIN-OF-CUSTODY FORMS