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POST-EXCAVATION GROUNDWATER MONITORING LETTER REPORT FIRST EVENT FOR BUILDING 502 TANK 502 NAS CECIL FIELD FL
11/24/2010
TETRA TECH NUS

TETRA TECH

PITT-11-10-065

November 24, 2010

Project Number 112G00378

Mr. David Grabka
Remedial Project Manager
Technical Review/Federal Facilities
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Reference: CLEAN IV Contract Number N62467-04-D-0055
Contract Task Order 0025

Subject: Post-Excavation Groundwater Monitoring Report, First Event
Building 502, Tank 502
Naval Air Station Cecil Field
Jacksonville, Florida

Dear Mr. Grabka:

Tetra Tech NUS, Inc. (Tetra Tech) is pleased to submit this Groundwater Monitoring Report for the referenced Contract Task Order for Building 502, Tank 502. This Post-Excavation Groundwater Monitoring Report was prepared for Naval Facilities Engineering Command Southeast (NAVFAC SE) under the Comprehensive Long-Term Environmental Action Navy (CLEAN) Contract Number N62467-04-D-0055.

The primary objective of current activities at this site is to conduct sampling of groundwater associated with the intermediate zone of the surficial aquifer. This First Post-Excavation Groundwater Sampling event was conducted based on Meeting Minute No. 2638 with Decision No. 788 from the Base Realignment and Closure (BRAC) Cleanup Team (BCT) August 11, 2010 meeting.

This Post-Excavation Groundwater Monitoring Report summarizes the field operations and analytical results for the subject site for the sampling event conducted on September 15 and 16, 2010.

BACKGROUND

Building 502, Tank 502 is located in the main base area of the former Naval Air Station Cecil Field as shown in Figure 1. Tank 502, a 1,000-gallon fuel oil tank, was removed in 1997, and a subsequent site assessment was performed in 1998 by Harding Lawson Associates, Inc. (HLA). HLA recommended a soil source removal in the area immediately surrounding the former location of the fuel tank. The source removal was conducted in January 1999, and the following items were noted in the report by CH2M Hill Constructors, Inc. (CH2M Hill):

- The contaminated soil associated with Tank 502 was removed.

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- No free product was encountered in the excavation.
- Three monitoring wells (CEF-502-1S, CEF-502-2S, and CEF-502-5D) were abandoned because they were within the limits of the excavation.

In April 1999, a follow-up Site Assessment Report (SAR) recommended that No Further Action (NFA) be conducted with regard to soils at the site. The SAR recommended that groundwater monitoring only for natural attenuation take place because benzene, ethylbenzene, xylenes, naphthalene, and total petroleum hydrocarbons (TPH) were previously detected in excess of Florida Department of Environmental Protection (FDEP) Groundwater Cleanup Target Levels (GCTLs). The SAR noted that wells CEF-502-2S and CEF-502-5D had been abandoned, and it recommended that those wells be replaced and monitored along with CEF-502-4S. The FDEP responded in July 1999 with a Monitoring Only Plan (MOP) approval letter that required semi-annual sampling of monitoring wells CEF-502-1S, CEF-502-2S, CEF-502-4S, and CEF-502-5D. HLA replaced abandoned wells CEF-502-2S and CEF-502-5D with CEF-502-6S and CEF-502-7D, respectively, before conducting the first semi-annual event in August 1999. Following the second semi-annual sampling event in March 2000, the FDEP agreed that groundwater monitoring should continue. However, the FDEP required that a monitoring well be installed in the former location of CEF-502-1S, and stipulated that samples from the well should be collected and analyzed for benzene, toluene, ethylbenzene, and total xylenes using United States Environmental Protection Agency (USEPA) Method 602; Polynuclear Aromatic Hydrocarbons (PAHs) using USEPA Method 8310; and TPH using the Florida Petroleum Range Organics (FL-PRO) method.

During March and April 2001, Tetra Tech conducted a supplemental site assessment in response to the FDEP recommendations regarding the 1999 SAR. Tetra Tech personnel supervised the installation of a replacement well for CEF-502-1S (designated CEF-502-1SR), and sampled that well, along with CEF-502-4S, CEF-502-6S, and CEF-502-7D for volatile organic compounds (VOCs), PAHs, and TPH as required in the MOP. The Supplemental SAR recommended several modifications to the monitoring program, including the installation and sampling of an additional well (CEF-502-8S), and sampling of an additional existing well (CEF-502-3S). The recommendations were approved by the FDEP on August 3, 2001, and were implemented during the next semi-annual sampling event in December 2001.

Four semi-annual groundwater monitoring events were conducted from June 6, 2002, through January 28, 2004. The Second Semi-Annual, Fourth Year Groundwater Monitoring Report indicated that concentrations of benzene, ethylbenzene, and total xylenes were less than their respective milestone objectives for Year 4. However, the concentrations of naphthalene and TPH in well CEF-502-1SR were greater than the Year 4 milestone objectives.

Because the concentrations of naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, and TPH continued to exceed GCTLs in monitoring well CEF-502-1SR, Tetra Tech recommended that semi-annual monitoring of existing wells be continued and also recommended additional characterization of a potential source of contamination contributing to CEF-502-1SR. This recommendation was discussed and approved at the December 2005 BCT meeting. In November 2006, Tetra Tech installed a total of ten soil borings in the vicinity of CEF-502-1SR. Based on the field screening results and visual observations, one soil sample was collected from each location and analyzed for PAHs using USEPA Method SW-846 8310 and for TPH using the FL-PRO method. In addition, one round of groundwater samples was collected from the six existing groundwater monitoring wells (CEF-502-1SR, CEF-502-3S, CEF-502-4S, CEF-502-6S, CEF-502-7D, and CEF-502-8S) at the time of the soil sampling. The samples were analyzed for VOCs using USEPA Method SW-846 8260B; PAHs including 1-methylnaphthalene and 2-methylnaphthalene using USEPA Method SW-846 8310; and TPH using FL-PRO.

During the November 2006 sampling event, TPH was detected in excess of its Soil Cleanup Target Level (SCTL) at soil borings CEF-502-SB06 [collected at 5 feet (ft) below ground surface (bgs)], CEF-502-SB07 (collected at 5 ft bgs), CEF-502-SB09 (collected at 3 ft bgs), and CEF-502-SB10 (collected at 5 ft bgs). Also during the November 2006 sampling event, 1-methylnaphthalene and 2-methylnaphthalene were

detected in monitoring well CEF-502-1SR at concentrations exceeding their respective GCTLs. Isopropylbenzene was also detected at levels greater than the GCTL in groundwater from wells CEF-502-1SR and CEF-502-4S. Based on these sampling results, Tetra Tech prepared a SAR Addendum (SARA), submitted May 11, 2007, recommending source removal in the vicinity of the soil borings in which TPH was detected at concentrations greater than the SCTL. The details of the excavation activities were further outlined in the Dig and Haul Package, Building 502, Tank 502, prepared by Tetra Tech and submitted on September 11, 2007.

Prior to the submittal of the SARA, the first semi-annual, sixth year sampling event was conducted in February 2007. Groundwater samples were collected from monitoring wells CEF-502-1SR, CEF-502-3S, CEF-502-4S, CEF-502-6S, CEF-502-7D, and CEF-502-8S. All samples were analyzed for VOCs using USEPA Method SW-846 8260B; PAHs using USEPA Method SW-846 8310; and TPH using the FL-PRO method. During this event, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene were detected in monitoring well CEF-502-1SR at concentrations exceeding their respective GCTLs. All other analytes were either not detected or were detected at levels less than their respective GCTLs at CEF-502-1SR. The analytical results for the remaining wells (CEF-502-3S, CEF-502-4S, CEF-502-6S, CEF-502-7D, and CEF-502-8S) indicated that all analytes were either not detected or were detected at levels less than their respective GCTLs.

Based on the excavation details outlined in the Dig and Haul Package, an Excavation of Petroleum Contaminated Soil at Building 502 and 290A Work Plan was prepared by CH2M Hill and submitted in March 2010. Subsequent excavation activities were conducted in June 2010, removing approximately 90 cubic yards of contaminated soil in the vicinity of the soil boring locations where contamination was detected at levels greater than SCTLs during the November 2006 sampling event. A Source Removal Report detailing these activities was submitted by CH2M Hill in November 2010. Following excavation and site restoration by CH2M Hill, Tetra Tech installed monitoring well CEF-502-9S to replace monitoring well CEF-502-1SR, which was abandoned during excavation activities. The well completion log and field log sheets can be found in Attachment A.

FIELD OPERATIONS

Groundwater samples were collected from monitoring wells CEF-502-3S, CEF-502-4S, CEF-502-6S, CEF-502-7D, and CEF-502-9S, on September 15 and 16, 2010 as identified in Decision No. 788 from the BCT August 11, 2010 meeting . Monitoring well locations are provided on Figure 2. The samples were placed on ice and shipped, via FedEx under chain of custody to Empirical Laboratories, Inc., in Nashville, Tennessee. The laboratory analyzed the samples for VOCs using USEPA Method SW-846 8260B; PAHs using USEPA Method SW-846 8270C; and TPH using the FL-PRO method.

Prior to obtaining groundwater samples, synoptic water levels and total well depths were measured and recorded on a site-specific groundwater measurement sheet for the sample wells. On September 15, 2010, depth to water ranged from 4.89 feet below top of casing (btoc) (CEF-502-3S) to 5.86 feet btoc (CEF-502-9S). Depth to water measurements, top of casing elevations, and groundwater elevations are presented in Table 1. General sampling protocols were in accordance with FDEP Standard Operating Procedures (SOPs) and Tetra Tech SOP SA-1.1.

RESULTS

The groundwater elevation data indicated that groundwater flow is to the west-southwest, which is consistent with the range of historical groundwater flow directions reported for this site. Table 1 provides the groundwater elevation data. A groundwater elevation contour map generated from September 2010 data is provided in Figure 3.

The analytical results for this event are summarized in Table 2, and the laboratory report is provided as Attachment B. The results indicate that all analytes were either not detected or detected at concentrations less than their respective GCTLs. Dibenzo(a,h)anthracene had an estimated result of 0.0271 J µg/L in monitoring well CEF-502-6S, which exceeds the FDEP GCTL; however, this value is below the practical quantitation limit (PQL) of 0.2 µg/L, the acceptable cleanup target level (CTL) as identified in the "Guidance for the Selection of Analytical Methods for Evaluation of Practical Quantitation Limits" (FDEP, 2004). Figure 4 presents the analytical results for this event. Table 3 presents the analytical results by monitoring well, including results from previous sampling events.

CONCLUSIONS AND RECOMMENDATIONS

Prior to excavation activities conducted in June 2010, contaminant levels of some select PAHs in groundwater at monitoring well CEF-502-1SR were consistently greater than their respective GCTLs. However, during the First Post-Excavation monitoring event after the excavation of contaminated soil at Building 502 and subsequent replacement of monitoring well CEF-502-1SR by CEF-502-9S, contaminant levels for all analytes in this well were either not detected or detected at levels less than their respective GCTLs. Furthermore, all analytes were either not detected or were detected at concentrations less than their respective GCTLs at all other monitoring wells sampled during this event (CEF-502-3S, CEF-502-4S, CEF-502-6S, and CEF-502-7D) as well.

It was recommended and agreed upon by the BCT on November 3, 2010 (Decision No. 791) that the Second Post-Excavation monitoring event be conducted in December 2010. This event shall consist of sampling monitoring wells CEF-502-3S, CEF-502-4S, CEF-502-6S, and CEF-502-9S. Groundwater samples will be analyzed for VOCs using USEPA Method SW-846 8260B; TPH using the FL-PRO method; and PAHs using USEPA Method SW-846 8270C. If the analytical results for the Second Post-Excavation monitoring event indicate that all analytes are at concentrations less than their respective GCTLs, a Site Rehabilitation Completion Report requesting NFA will be prepared.

If you have any questions regarding this submittal, please feel free to contact me at (412) 921-8163, or via e-mail at Robert.Simcik@tetratech.com or Kara Wimble at (904) 730-4669 ext. 217.

Sincerely,

Robert Simcik, P.E.
Task Order Manager
P.E. Number 61263

RS/clm

Enclosures (4)

c: A. Sanford, NAVFAC SE (1 copy)
M. Davidson, NAVFAC SE (electronic copy)
M. Halil, CH2M Hill (electronic only)
S. Martin, NAVFAC Atlantic (electronic copy)
D. Humbert, Tetra Tech (electronic copy)
K. Wimble, Tetra Tech (1 copy)
M. Jonnet, Tetra Tech (electronic copy)
J. Johnson, Tetra Tech (1 copy for Information Repository)
CTO 0025 Project File (1 copy, unbound)

CERTIFICATION

The information contained herein is based on the investigation data and information obtained from previously submitted reports. If conditions are determined to exist that differ from those described, the undersigned engineer should be notified to evaluate the effects of any additional information on the information described in this report. This Post-Excavation Groundwater Monitoring Report, First Event (September 2010) was developed for Building 502, Tank 502 at the Former Naval Air Station Cecil Field, Jacksonville, Florida, and should not be construed to apply to any other site.

November 24, 2010
Robert Simek, P.E.
P.E. License Number 61263

REFERENCES

BCT (Base Realignment and Closure Cleanup Team), 2010. Minutes of Meeting. Minutes Reference No. 2638, Decision No. 788, August 11.

BCT, 2010. Minutes of Meeting. Minutes Reference No. 2648, Decision No. 791, November 3.

CH2M Hill (CH2M Hill Constructors, Inc.), 1999, Source Removal Report, Rev 1, UST 502, Naval Air Station Cecil Field, Jacksonville, Florida.

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FDEP (Florida Department of Environmental Protection), 2004. Guidance for the Selection of Analytical Methods and for the Evaluation of Practical Quantitation Limits, prepared by the Division of Resource Assessment and Management for the Division of Waste Management Cleanup Program. October.

HLA (Harding Lawson Associates), 1997, Sampling and Analysis Report, Building 502, Zone H, Aviation Ordnance Area Group VII, Naval Air Station Cecil Field, Jacksonville, Florida.

HLA, 1997, Sampling and Analysis Report, Building 502, Tank 502, Underground Storage Tank and Aboveground Storage Tank Grey Sites, Naval Air Station Cecil Field, Jacksonville, Florida.

Tetra Tech (Tetra Tech NUS, Inc.), 2001, Site Assessment Report Addendum for Building 502, Tank 502, Naval Air Station Cecil Field, Jacksonville, Florida.

Tetra Tech, 2007, Final Quarterly Groundwater Monitoring Report, First Quarter, Sixth Year, Building 502, Tank 502, Naval Air Station Cecil Field, Jacksonville, Florida.

Tetra Tech, 2007, Final Dig and Haul Package, Building 502, Tank 502, Naval Air Station Cecil Field, Jacksonville, Florida.

Tetra Tech, 2007, Final Site Assessment Report Addendum, Building 502, Tank 502, Naval Air Station Cecil Field, Jacksonville, Florida.

TABLES

TABLE 1
GROUNDWATER ELEVATION AND MONITORING WELL CONSTRUCTION DATA
POST-EXCAVATION GROUNDWATER MONITORING REPORT
FIRST EVENT (SEPTEMBER 2010)
BUILDING 502, TANK 502
NAS CECIL FIELD
JACKSONVILLE, FLORIDA

Well Number	Total Depth (ft bgs)	Top of Casing Elevation (ft NAVD)	April 9, 2001		December 11, 2001		March 4, 2002		June 6, 2002	
			Depth to Water (ft btoc)	Water Elevation (ft above msl)	Depth to Water (ft btoc)	Water Elevation (ft above msl)	Depth to Water (ft btoc)	Water Elevation (ft above msl)	Depth to Water (ft btoc)	Water Elevation (ft above msl)
CEF-502-1SR	12.48	82.16	6.31	75.85	5.27	76.89	4.65	77.51	8.38	73.78
CEF-502-3S	12.22	80.68	5.03	75.65	3.77	76.91	3.03	77.65	7.14	73.54
CEF-502-4S	12.36	80.68	5.07	75.61	3.73	76.95	3.02	77.66	7.18	73.5
CEF-502-6S	14.8	81.7	5.72	75.98	5.2	76.50	4.64	77.06	7.9	73.8
CEF-502-7D	29.95	81.65	6.00	75.65	4.87	76.78	4.21	77.44	7.84	73.81
CEF-502-8S	13.57	81.75	NM	NA	4.83	76.92	4.14	77.61	8	73.75

Well Number	Total Depth (ft bgs)	Top of Casing Elevation (ft NAVD)	December 20, 2002		June 24, 2003		January 28, 2004		November 20, 2006	
			Depth to Water (ft btoc)	Water Elevation (ft above msl)	Depth to Water (ft btoc)	Water Elevation (ft above msl)	Depth to Water (ft btoc)	Water Elevation (ft above msl)	Depth to Water (ft btoc)	Water Elevation (ft above msl)
CEF-502-1SR	12.48	82.16	4.77	77.39	5.62	76.54	8.36	73.8	9.4	72.76
CEF-502-3S	12.22	80.68	3.52	77.16	4.44	76.24	7.07	73.61	8.46	72.22
CEF-502-4S	12.36	80.68	3.54	77.14	5.45	75.23	7.17	73.51	8.6	72.08
CEF-502-6S	14.8	81.7	4.29	77.41	5.00	76.70	7.96	73.74	9.44	72.26
CEF-502-7D	29.95	81.65	4.62	77.03	5.41	76.24	7.98	73.67	9.59	72.06
CEF-502-8S	13.57	81.75	4.47	77.28	5.30	76.45	8.02	73.73	9.33	72.42

Well Number	Total Depth (ft bgs)	Top of Casing Elevation (ft NAVD)	February 7, 2007		September 15, 2010	
			Depth to Water (ft btoc)	Water Elevation (ft above msl)	Depth to Water (ft btoc)	Water Elevation (ft above msl)
CEF-502-1SR(9S)[(1)]	12.48	82.16	9.11	73.05	5.86	76.3
CEF-502-3S	12.22	80.68	7.79	72.89	4.89	75.79
CEF-502-4S	12.36	80.68	7.87	72.81	4.95	75.73
CEF-502-6S	14.8	81.7	8.75	72.95	5.38	76.32
CEF-502-7D	29.95	81.65	8.78	72.87	5.81	75.84
CEF-502-8S	13.57	81.75	8.74	73.01	NM	NA

1 Well CEF-502-1SR was abanoned during June 2010 excavation activities and was replaced by well CEF-502-9S in September 2010

bgs = Below ground surface.

btoc = Below top of casing.

ft = Feet.

msl = Mean sea level.

NAVD = North American Vertical Datum, 1988.

NA = Not applicable.

NM = Not measured.

TABLE 2
GROUNDWATER ANALYTICAL DATA
POST-EXCAVATION GROUNDWATER MONITORING REPORT
FIRST EVENT (SEPTEMBER 2010)
BUILDING 502, TANK 502
NAS CECIL FIELD
JACKSONVILLE, FLORIDA

CONSTITUENTS	FDEP GCTL	CEF -502-						
		MW-9S		MW-3S	MW-4S	MW-6S	MW-7D	MW-8S
		Sample	Duplicate					
		09/16/10	09/16/10	09/16/10	09/16/10	09/15/10	09/15/10	NS
VOLATILE ORGANICS (μg/L)								
1,2,4-TRIMETHYLBENZENE	10	0.415 J	0.440 J	0.3 U	0.3 U	0.3 U	0.3 U	NS
1,3,5-TRIMETHYLBENZENE	10	0.396 J	0.418 J	0.3 U	0.3 U	0.3 U	0.3 U	NS
BENZENE	1	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NS
ETHYLBENZENE	30	0.745 J	0.787 J	0.3 U	0.3 U	0.3 U	0.3 U	NS
ISOPROPYLBENZENE	0.8	0.376 J	0.408 J	0.3 U	0.3 U	0.3 U	0.3 U	NS
TOTAL XYLENES	20	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NS
SEMIVOLATILE ORGANICS (μg/L)								
1-METHYLNAPHTHALENE	28	2.03	1.60	0.519	0.0546 J	0.727	0.0187 U	NS
2-METHYLNAPHTHALENE	28	1.67	1.25	0.0547 J	0.907	0.829	0.0187 U	NS
ACENAPHTHENE	20	0.0185 U	0.0187 U	0.0614 J	0.0296 J	1.09	0.0187 U	NS
ANTHRACENE	2100	0.0185 U	0.0187 U	0.0185 U	0.0187 U	0.0185 U	0.0187 U	NS
DIBENZO(a,h)ANTHRACENE	0.005	0.0185 U	0.0187 U	0.0185 U	0.0187 U	0.0271 J*	0.0187 U	NS
FLUORENE	280	0.0185 U	0.0187 U	0.0185 U	0.0320 J	0.0185 U	0.0187 U	NS
NAPHTHALENE	14	0.879	0.695	0.0711 J	0.120	0.0185 U	0.0187 U	NS
PHENANTHRENE	210	0.0185 U	0.459	0.0185 U	0.0195 J	0.0185 U	0.0302 J	NS
TOTAL PETROLEUM HYDROCARBONS (mg/L)								
TPH (C08-C40)	5	2.36	2.26	0.330	0.0794 U	0.652	0.787 U	NS

* "Guidance for the Selection of Analytical Methods for the Evaluation of Practical Quantitation Limits" (FDEP, 2004) identifies a PQL for Dibenzo(a,h)anthracene of 0.2 μg/L. This alternate CTL is used for comparison of the estimated value.

CTL = Cleanup target level.
J = Estimated concentration.
NS = Not sampled.
μg/L = Micrograms per liter.
mg/L = Milligrams per liter.
PQL = Practical Quatitation Limit.
U = Not detected at associated detection limit.

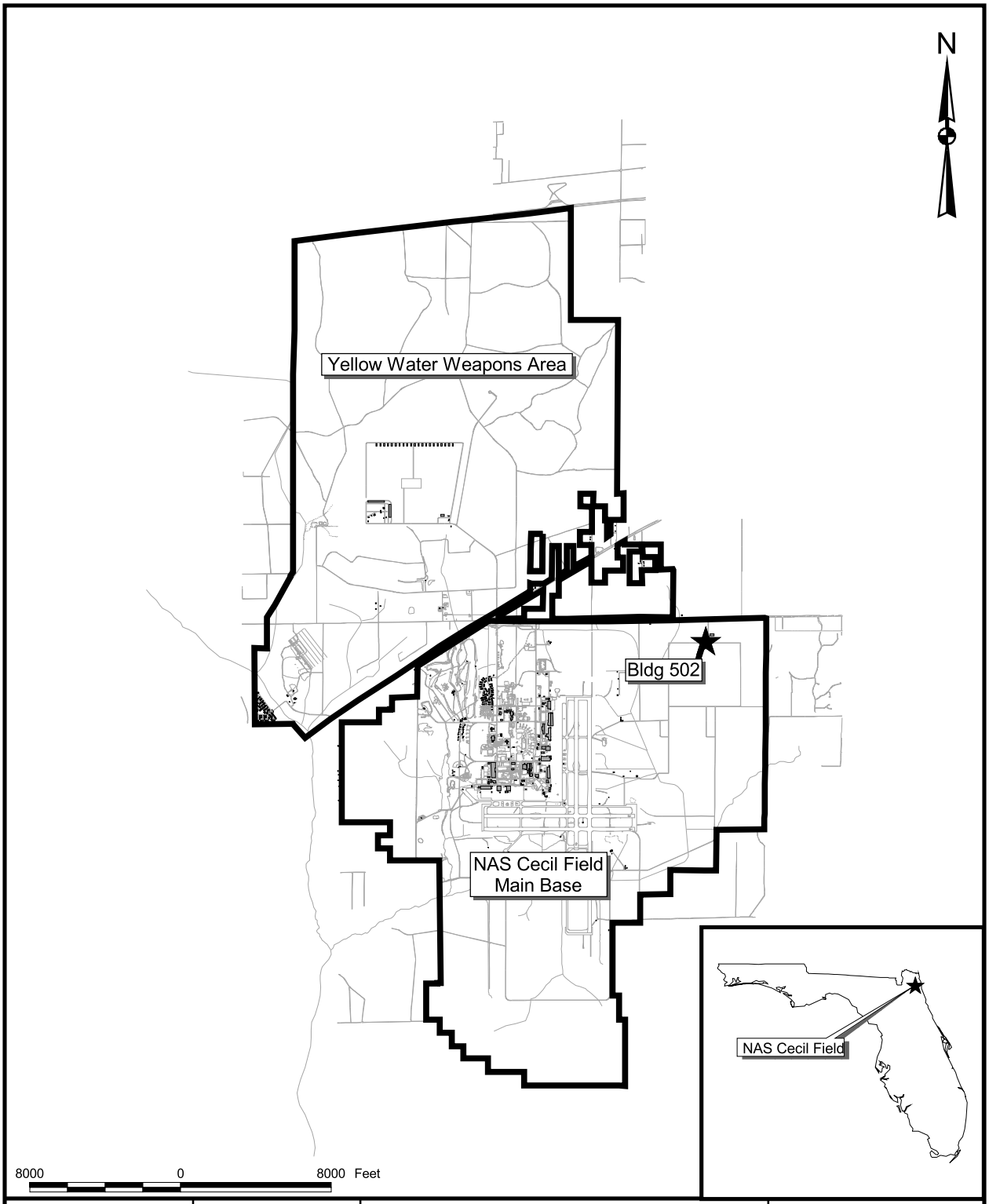
TABLE 3
GROUNDWATER ANALYTICAL DATA BY WELLS
POST-EXCAVATION GROUNDWATER MONITORING REPORT
FIRST EVENT (SEPTEMBER 2010)
BUILDING 502, TANK 502
NAS CECIL FIELD
JACKSONVILLE, FLORIDA

CONSTITUENTS	FDEP GCTL	MW-1SR				MW-9S		MW-3S				MW-4S				MW-6S				MW-7D				MW-8S			
		01/28/04	11/21/06	Sample 02/07/07	Duplicate 02/07/07	Sample 09/16/10	Duplicate 09/16/10	01/28/04	11/21/06	02/07/07	09/16/10	01/28/04	11/21/06	02/07/07	09/16/10	01/28/04	11/21/06	02/07/07	09/15/10	01/28/04	11/21/06	02/07/07	09/15/10	01/28/04	Sample 11/21/06	Duplicate 11/21/06	02/07/07
VOLATILE ORGANICS (µg/L)																											
1,2,4-TRIMETHYLBENZENE	10	NS	6.9	NS	NS	0.415 J	0.440 J	NS	0.5 J	NS	0.3 U	NS	0.6 J	NS	0.3 U	NS	0.2 U	NS	0.3 U	NS	0.2 U	NS	0.3 U	NS	0.2 U	0.2 U	NS
1,3,5-TRIMETHYLBENZENE	10	NS	2.8	NS	NS	0.396 J	0.418 J	NS	0.2 U	NS	0.3 U	NS	0.6 J	NS	0.3 U	NS	0.2 U	NS	0.3 U	NS	0.2 U	NS	0.3 U	NS	0.2 U	0.2 U	NS
BENZENE	1	0.5 U	0.2 U	0.50 U	0.50 U	0.3 U	0.3 U	0.5 U	0.2 U	0.50 U	0.3 U	0.5 U	0.3 J	0.50 U	0.3 U	0.5 U	0.2 U	0.50 U	0.3 U	0.5 U	0.2 U	0.50 U	0.3 U	0.5 U	0.2 U	0.2 U	0.50 U
ETHYLBENZENE	30	7.9	**2.5**	3.3	3.2	0.745 J	0.787 J	0.5 U	0.3 U	0.5 U	0.3 U	0.76 J	2.2	3.7	0.3 U	1.2	0.3 J	0.5 U	0.3 U	0.5 U	0.3 U	0.5	0.3 U	0.5 U	0.3 U	0.3 U	0.5 U
ISOPROPYLBENZENE	0.8	NS	**2.7**	NS	NS	0.376 J	0.408 J	NS	0.1 U	NS	0.3 U	NS	**1.2**	NS	0.3 U	NS	0.4 J	NS	0.3 U	NS	0.1 U	NS	0.3 U	NS	0.1 U	0.1 U	NS
TOTAL XYLENES	20	1.8 J	0.3 U	1.0 U	1.0 U	0.3 U	0.3 U	1.0 U	0.3 U	1.0 U	0.3 U	1.0 U	0.9 J	1.0 U	0.3 U	1.0 U	0.3 U	1.0 U	0.3 U	1.0 U	0.3 U	1.0 U	0.3 U	1.0 U	0.3 U	0.3 U	1.0 U
SEMIVOLATILE ORGANICS (µg/L)																											
1-METHYLNAPHTHALENE	28	**49.9**	**52.8 D**	**40.4**	**42.8**	2.03	1.60	1.2 J	6.46	0.49 U	0.519	0.55 U	1.48	1	0.0546 J	4	1.95	1.5	0.727	0.53 U	0.02 U	0.5 U	0.0187 U	0.55 U	0.02 U	0.02 U	0.49 U
2-METHYLNAPHTHALENE	28	**105**	**110 D**	**64.3**	**67.2**	1.67	1.25	0.51 U	4.92	0.49 U	0.0547 J	1.8 J	8.37	8.2	0.907	16.4	3.75	2.9	0.829	0.53 U	0.02 U	0.5 U	0.0187 U	0.55 U	0.02 U	0.02 U	0.49 U
ACENAPHTHENE	20	1.1 U	1.72	3.5	2.8	0.0185 U	0.0187 U	1.0 U	0.39	0.98 U	0.0614 J	1.1 U	0.29	1 U	0.0296 J	1.1 U	1.11	0.97 U	1.09	1.1 U	0.02 U	0.99 U	0.0187 U	1.1 U	0.02 U	0.02 U	0.99 U
ANTHRACENE	2100	1.1 U	0.07 J	0.98 U	0.98 U	0.0185 U	0.0187 U	1.0 U	0.02 U	0.98 U	0.0185 U	1.1 U	0.02 U	1.0 U	0.0187 U	1.1 U	0.02 U	0.97 U	0.0185 U	1.1 U	0.02 U	0.99 U	0.0187 U	1.1 U	0.02 U	0.02 U	0.98 U
DIBENZO(a,h)ANTHRACENE	0.005	0.11 U	0.02 U	0.049 U	0.049 U	0.0185 U	0.0187 U	0.1 U	0.02 U	0.049 U	0.0185 U	0.11 U	0.02 U	0.052 U	0.0187 U	0.11 U	0.02 U	0.049 U	0.0271 J*	0.11 U	0.02 U	0.050 U	0.0187 U	0.11 U	0.02 U	0.02 U	0.049 U
FLUORENE	280	5	2.78	3.9	4	0.0185 U	0.0187 U	1.0 U	0.58	0.98 U	0.0185 U	1.1 U	0.22	1 U	0.0320 J	2.1 J	2.16	1.9	0.0185 U	1.1 U	0.02 U	0.99 U	0.0187 U	1.1 U	0.02 U	0.02 U	0.99 U
NAPHTHALENE	14	**40.4**	11.2	**21.1**	**17.1**	0.879	0.695	0.92	0.92	0.98 U	0.0711 J	0.55 U	2.69	4.3	0.120	2.5	0.43	0.97	0.0185 U	0.53 U	0.02 U	0.99 U	0.0187 U	0.55 U	0.02 U	0.02 U	0.99 U
PHENANTHRENE	210	6.1	2.4	3.1	3.8	0.0185 U	0.459	1.0 U	0.13	0.98 U	0.0185 U	1.1 U	0.02 U	1 U	0.0195 J	1.1 U	0.08 J	0.97	0.0185 U	1.1 U	0.02 U	0.99 U	0.0302 J	1.1 U	0.02 U	0.02 U	0.99 U
TOTAL PETROLEUM HYDROCARBONS (mg/L)																											
TPH (C08-C40)	5	**7.42**	2.11	3.93	4.65	2.36	2.26	0.617	0.166 J	0.526	0.330	0.667	0.496	1.07	0.0794 U	0.815	0.33	0.794	0.652	0.27 U	0.094 U	0.16 U	0.787 U	0.303	0.094 U	0.094 U	0.17 U

* "Guidance for the Selection of Analytical Methods for the Evaluation of Practical Quantitation Limits" (FDEP, 2004) identifies a PQL for Dibenzo(a,h)anthracene of 0.2 µg/L. This alternate CTL is used for comparison of the estimated value.

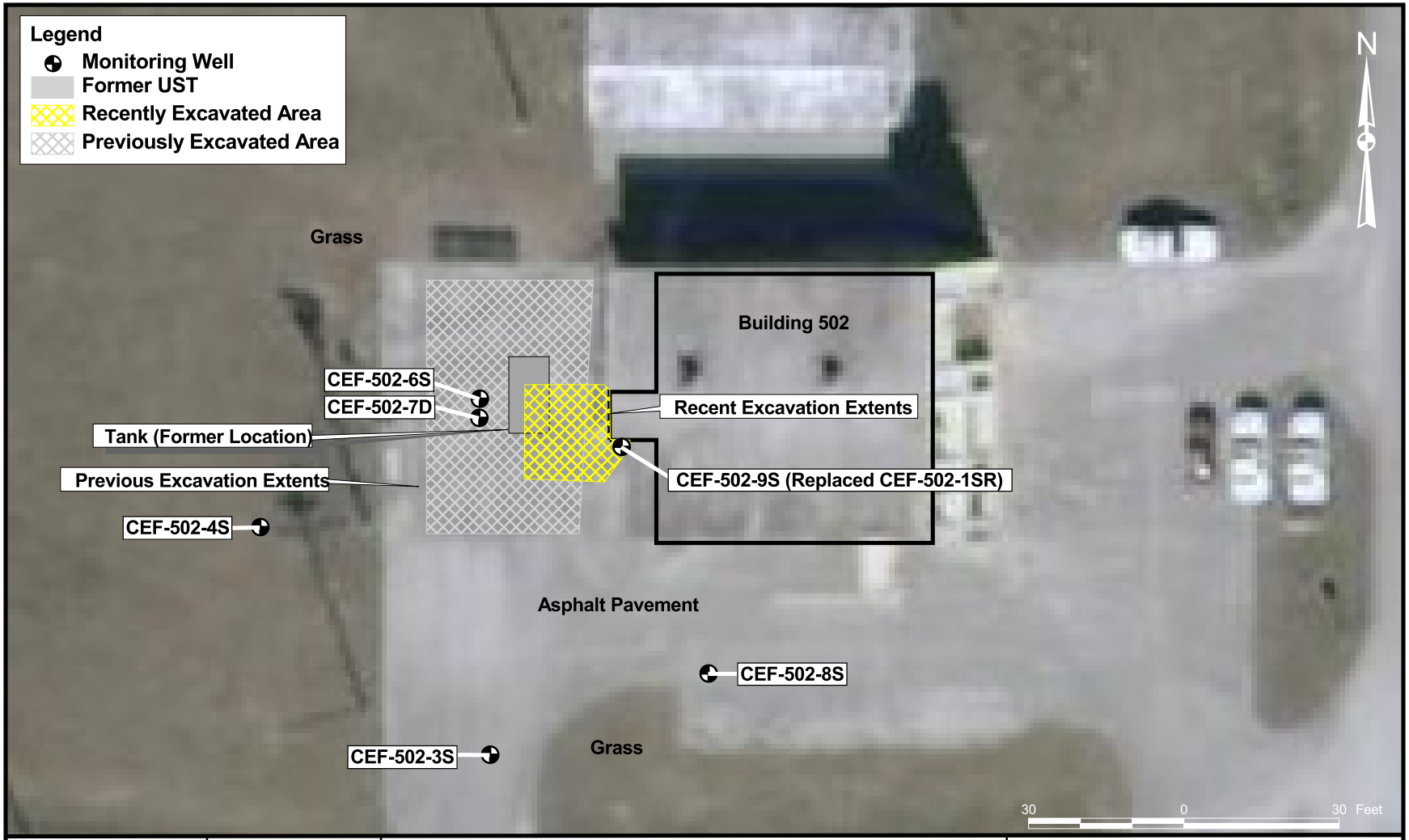
Concentration exceeds criterion.
CTL = Cleanup target level.
D = Data reported from a dilution.
J = Estimated concentration.
NS = Not sampled.
µg/L = Micrograms per liter.

FIGURES



DRAWN BY MJJ	DATE 12Nov10	GENERAL LOCATION MAP BUILDING 502 NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 0025
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 1 / REV 0

:\GIS\CECIL\Bldg0502.apr 19Nov10 MJJ Layout01



DRAWN BY MJJ	DATE 12Nov10	MONITORING WELL LOCATION MAP BUILDING 502 NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 0025
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 2 / REV 0

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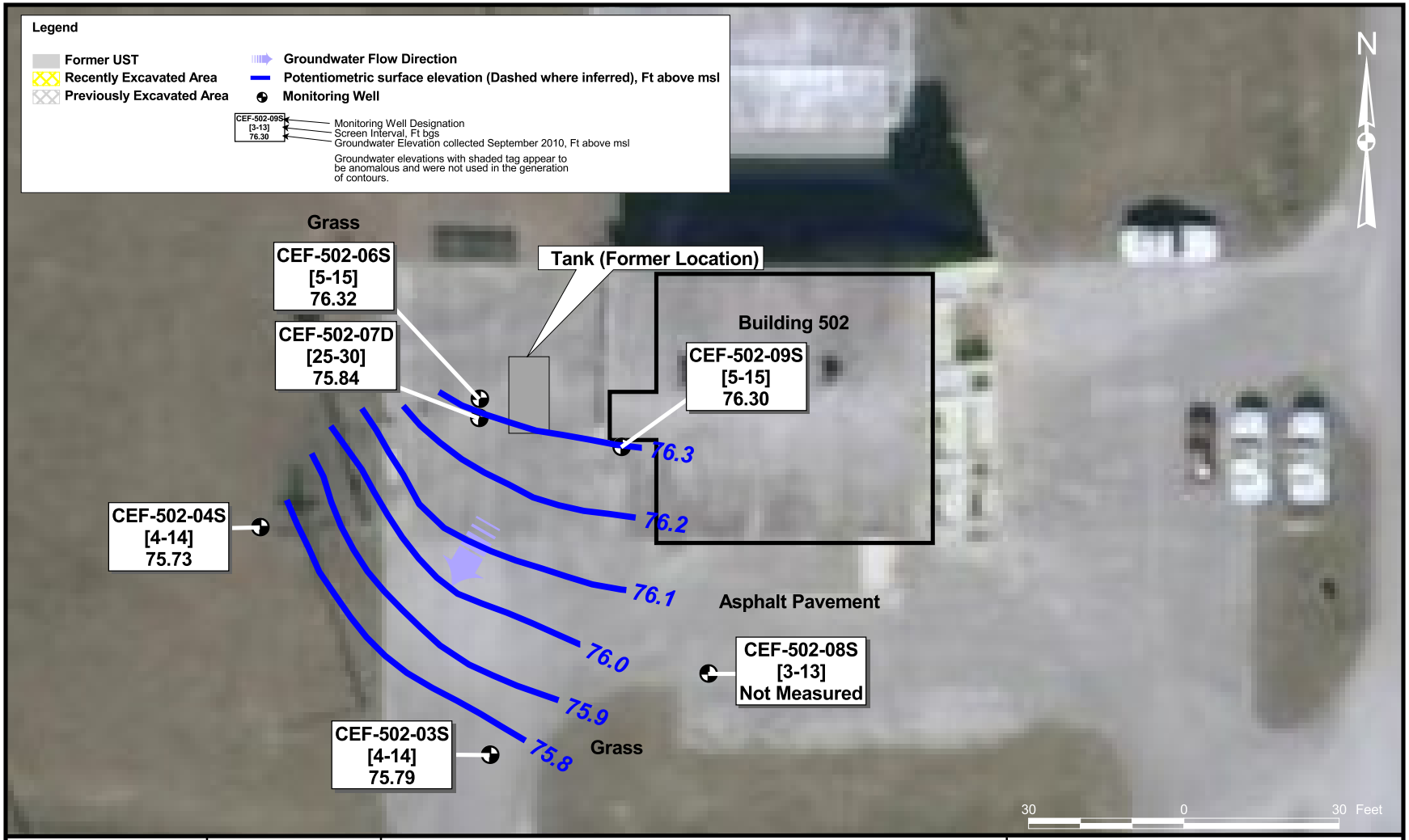
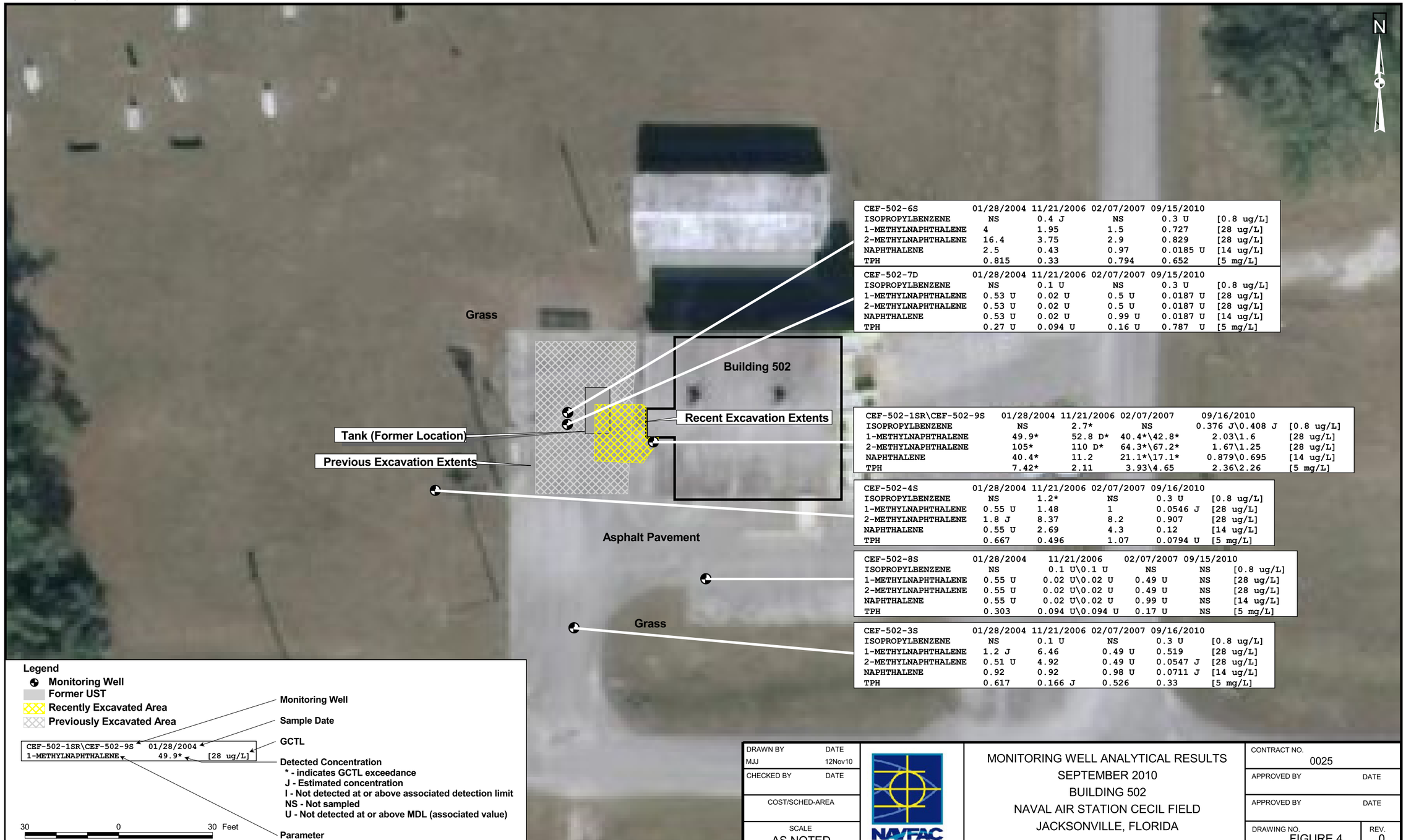


DRAWN BY MJJ	DATE 12Nov10	POTENTIOMETRIC SURFACE ELEVATION MAP SEPTEMBER 2010 BUILDING 502 NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 0025
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 3 / REV 0

:\GIS\CECIL\Bldg0502.apr 19Nov10 MJJ Layout05

:\GIS\CECIL\Bldg0502.apr 19Nov10 MJJ Layout04



CEF-502-6S	01/28/2004	11/21/2006	02/07/2007	09/15/2010	
ISOPROPYLBENZENE	NS	0.4 J	NS	0.3 U	[0.8 ug/L]
1-METHYLNAPHTHALENE	4	1.95	1.5	0.727	[28 ug/L]
2-METHYLNAPHTHALENE	16.4	3.75	2.9	0.829	[28 ug/L]
NAPHTHALENE	2.5	0.43	0.97	0.0185 U	[14 ug/L]
TPH	0.815	0.33	0.794	0.652	[5 mg/L]

CEF-502-7D	01/28/2004	11/21/2006	02/07/2007	09/15/2010	
ISOPROPYLBENZENE	NS	0.1 U	NS	0.3 U	[0.8 ug/L]
1-METHYLNAPHTHALENE	0.53 U	0.02 U	0.5 U	0.0187 U	[28 ug/L]
2-METHYLNAPHTHALENE	0.53 U	0.02 U	0.5 U	0.0187 U	[28 ug/L]
NAPHTHALENE	0.53 U	0.02 U	0.99 U	0.0187 U	[14 ug/L]
TPH	0.27 U	0.094 U	0.16 U	0.787 U	[5 mg/L]

CEF-502-1SR\CEF-502-9S	01/28/2004	11/21/2006	02/07/2007	09/16/2010	
ISOPROPYLBENZENE	NS	2.7*	NS	0.376 J\0.408 J	[0.8 ug/L]
1-METHYLNAPHTHALENE	49.9*	52.8 D*	40.4*\42.8*	2.03\1.6	[28 ug/L]
2-METHYLNAPHTHALENE	105*	110 D*	64.3*\67.2*	1.67\1.25	[28 ug/L]
NAPHTHALENE	40.4*	11.2	21.1*\17.1*	0.879\0.695	[14 ug/L]
TPH	7.42*	2.11	3.93\4.65	2.36\2.26	[5 mg/L]

CEF-502-4S	01/28/2004	11/21/2006	02/07/2007	09/16/2010	
ISOPROPYLBENZENE	NS	1.2*	NS	0.3 U	[0.8 ug/L]
1-METHYLNAPHTHALENE	0.55 U	1.48	1	0.0546 J	[28 ug/L]
2-METHYLNAPHTHALENE	1.8 J	8.37	8.2	0.907	[28 ug/L]
NAPHTHALENE	0.55 U	2.69	4.3	0.12	[14 ug/L]
TPH	0.667	0.496	1.07	0.0794 U	[5 mg/L]

CEF-502-8S	01/28/2004	11/21/2006	02/07/2007	09/15/2010	
ISOPROPYLBENZENE	NS	0.1 U\0.1 U	NS	NS	[0.8 ug/L]
1-METHYLNAPHTHALENE	0.55 U	0.02 U\0.02 U	0.49 U	NS	[28 ug/L]
2-METHYLNAPHTHALENE	0.55 U	0.02 U\0.02 U	0.49 U	NS	[28 ug/L]
NAPHTHALENE	0.55 U	0.02 U\0.02 U	0.99 U	NS	[14 ug/L]
TPH	0.303	0.094 U\0.094 U	0.17 U	NS	[5 mg/L]

CEF-502-3S	01/28/2004	11/21/2006	02/07/2007	09/16/2010	
ISOPROPYLBENZENE	NS	0.1 U	NS	0.3 U	[0.8 ug/L]
1-METHYLNAPHTHALENE	1.2 J	6.46	0.49 U	0.519	[28 ug/L]
2-METHYLNAPHTHALENE	0.51 U	4.92	0.49 U	0.0547 J	[28 ug/L]
NAPHTHALENE	0.92	0.92	0.98 U	0.0711 J	[14 ug/L]
TPH	0.617	0.166 J	0.526	0.33	[5 mg/L]

DRAWN BY MJJ	DATE 12Nov10	MONITORING WELL ANALYTICAL RESULTS SEPTEMBER 2010 BUILDING 502 NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NO. 0025
CHECKED BY	DATE		APPROVED BY / DATE
COST/SCHED-AREA			APPROVED BY / DATE
SCALE AS NOTED	NAVFAC		DRAWING NO. FIGURE 4 / REV. 0

ATTACHMENT A

WELL COMPLETION LOG AND FIELD LOG SHEETS

Tetra Tech NUS, Inc.

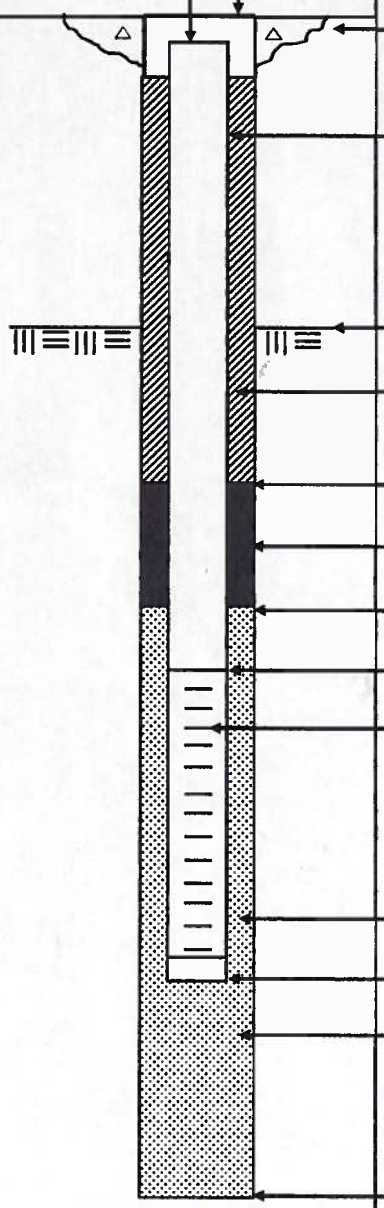
WELL No.: CCF-502-09S

MONITORING WELL SHEET

PROJECT NAS Cecil Field Site 502	DRILLING Co.: Groundwater Protection	BORING No.:	1
PROJECT No. 2G00746	DRILLER: Kevin	DATE COMPLETED:	9/13/10
SITE: 502	DRILLING METHOD: Sonic	NORTHING:	30°14.602' ~~30°12.601'~~
GEOLOGIST: Jeff Krom	DEV. METHOD:	EASTING:	81°51.281' ~~081°53.08~~

Ground Elevation =

Datum:



Not to Scale

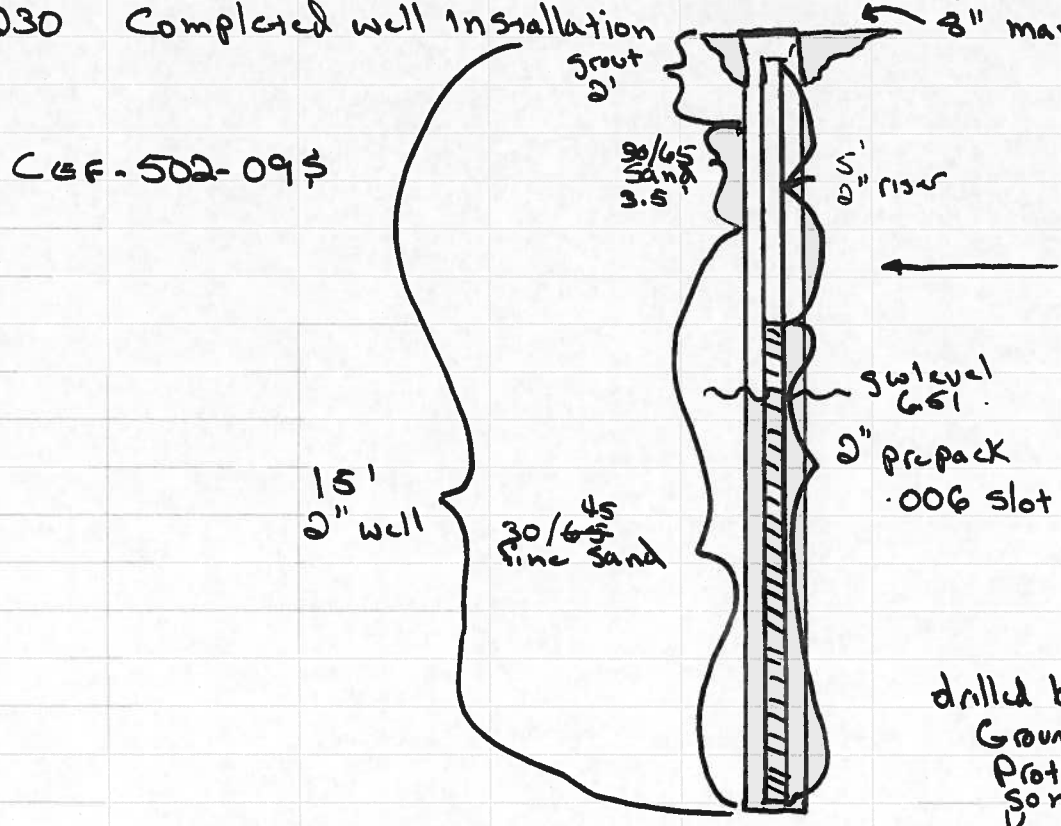
Elevation / Depth of Top of Riser:	/
Elevation / Height of Top of Surface Casing:	/
I.D. of Surface Casing:	8"
Type of Surface Casing:	8" manhole / Steel
Type of Surface Seal:	8" m Groot 2 1/2
I.D. of Riser:	2"
Type of Riser:	PVC
Borehole Diameter:	6"
Elevation / Depth Top of Rock:	/
Type of Backfill:	Portland Cement 1/2
Elevation / Depth of Seal:	2 / 3.5
Type of Seal:	fine sand 30/45 .5
Elevation / Depth of Top of Filter Pack:	3.5 / 15
Elevation / Depth of Top of Screen:	/ 5
Type of Screen:	2" Pre pack
Slot Size x Length:	.006
I.D. of Screen:	2"
Type of Filter Pack:	~~Pre pack~~ 30/45 3.5
Elevation / Depth of Bottom of Screen:	/ 15
Elevation / Depth of Bottom of Filter Pack:	/ 15
Type of Backfill Below Well:	none
Elevation / Total Depth of Borehole:	/ 15

Pure sold lube

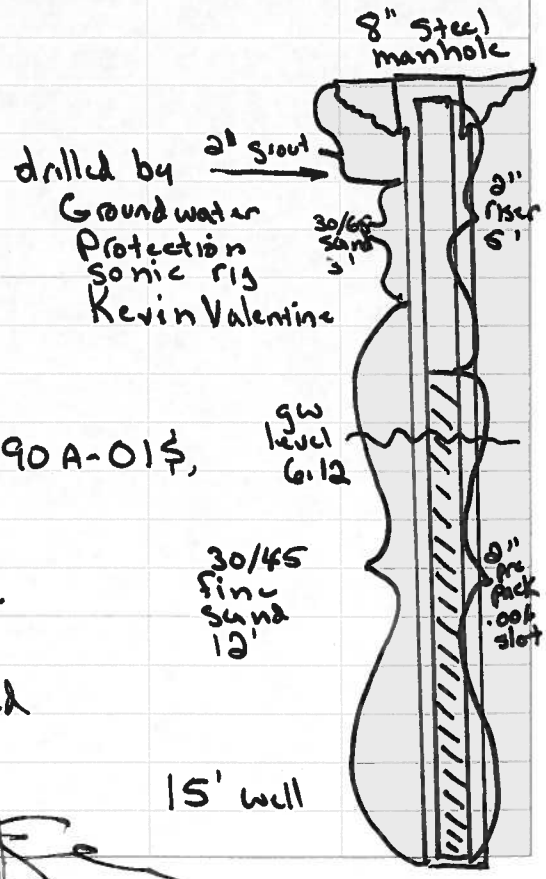
NAS Cecil Field CTO 076 112600746 Site SD2 290A Well Install 13 Sep 10

Personnel: Jeff Krone, Kevin Valentino, Robert Crandall, David Longino
Truck: 2006 F-250 and Groundwater Protection Vehicles
PPE: Level D
Weather: Partly Cloudy 88°
Objective: Well installation

0800 Departed office for Cecil Field
0900 On site awaiting well installers
1015 Well installers on site, obtained Contractor Passes.
1120 On site, obtained dig permit to proceed with well installations
1155 Began installation of well CEF-SD2-09$, see figure (below)
1230 Completed well installation



1250 Completed grouting
1350 arrived at Site 290 A
1409 Commenced drilling for well CEF-290A-01$, see figure (right)
1530 completed well and grouted
1630 Completed drilling operations, Groundwater protection crew departed Site
1700 Turned Contractor Passes and departed Cecil Field.



NAS Cecil Field CTO 076 112600746 Site 502 & 290A well development

Personnel: Jeff Krone (TtNUS) and Ricky Cisneros (GW Pro)
Truck: 2006 F-250 and GW Protection truck
PPE: Level D
Weather: Partly Cloudy 90°
Objective: Development of new wells 502-9S and 290A-1S

0830	Departed office for Cecil Field
0940	Onsite, GW Protection crewman delayed due to mechanical problems.
1215	GW rep on site
1220	On well 502-9S, commenced purge
1240	Purged 40 gal, turbidity 10.97 NTU
1245	Purged 45 gal, turbidity 6.77 NTUs
1300	Purged 50 gal, turbidity 5.02 NTUs
1310	commenced purge of well 290A-01S, purged dry
1330	Purged 40 gal, turbidity 1428 NTUs
1345	Purged 50 gal, turbidity 777 NTUs, switched to drum 290A-5
1355	purged dry again, allowed to recharge and resumed
1605	Purged 100 gal turbidity 120, Stopped purge
1630	Departed Cecil Field

ATTACHMENT B

GROUNDWATER ANALYTICAL REPORT
SEPTEMBER 2010

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**R. SIMCIK**	**DATE:**	**NOVEMBER 18, 2010**
FROM:	**MICHELLE ALLEN**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – VOC/PAH/PET**
CTO 0025 ~~CTO-JM09~~, NAS CECIL FIELD
SDG CTOJM09CF_008

SAMPLES: 9/Aqueous /VOC

CEF-290A-01S-20100915	CEF-290A-DUP-20100915	CEF-502-6S-20100915
CEF-502-07D-20100915	CEF-502-TB-20100915	CEF-502-9S-20100915
CEF-502-3S-20100916	CEF-502-DUP-02-20100916	CEF-502-4S-20100916

8/Aqueous/PAH/PET

CEF-290A-01S-20100915	CEF-290A-DUP-20100915	CEF-502-6S-20100915
CEF-502-07D-20100915	CEF-502-9S-20100915	CEF-502-3S-20100916
CEF-502-DUP-02-20100916	CEF-502-4S-20100916	

OVERVIEW

The sample set for CTO ~~JM09~~ 0025 NAS Cecil Field SDG CTOJM09CF_008 consisted of nine (9) aqueous environmental samples including one (1) aqueous trip blank sample. The samples were analyzed as indicated above for volatile organic compounds (VOC), polynuclear aromatic hydrocarbons (PAH), and petroleum extractables (PET). The trip blank sample was only analyzed for VOC. Two field duplicate pairs were associated with this Sample Delivery Group (SDG), CEF-290A-01S-20100915/CEF-290A-DUP-20100915 and CEF-502-9S-20100916/CEF-502-DUP-02-20100916.

The samples were collected by TetraTech NUS on September 15 and 16, 2010 and analyzed by Empirical Laboratories, LLC. All analyses were conducted in accordance with SW-846 Methods 8260B, 8270C, and Method FL-PRO analytical and reporting protocols.

The data contained in this SDG were validated with regard to the following parameters:

- * Data Completeness
- * Holding Times/Sample Preservation
- * Initial/Continuing Calibrations
- * Laboratory Method Blank Results
- Field Duplicate Results
- * Detection Limits

The symbol (*) indicates that quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified Analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

The text of this report is formatted to address only gross non-compliances resulting in the rejection of data and the elimination of false positives.

VOC

No issues were identified.

PAH

The compound phenanthrene was detected in sample CEF-502-9S-20100916, but not in the duplicate pair sample, CEF-502-DUP-02-20100916. The difference between the positive result and the non-detected result was greater than 2X the Reporting Limit (RL), therefore, the results for phenanthrene were qualified as estimated (J) and (UJ), respectively.

The Relative Percent Difference (%RPD) was greater than 30% for a few compounds in the field duplicate pair, CEF-290A-01S-20100915/CEF-290A-DUP-20100915. Additionally, several compounds were detected below the RL in sample CEF-290A-01S-20100915, but not detected in the duplicate pair sample, CEF-290A-DUP-20100915. No action was necessary since the difference between the positive results reported below the RL, and the difference between the positive and non-detected results did not exceed 2X the RL.

PET

No issues were identified.

NOTES

Positive results reported below the quantitation limit but above the method detection limit were qualified as estimated, (J).

EXECUTIVE SUMMARY

Laboratory Performance Issues: There were no laboratory issues.

Other Factors Affecting Data Quality: Field duplicate imprecision was noted for one PAH compound in one field duplicate pair. Positive results reported below the quantitation limit but above the method detection limit were qualified as estimated, (J).

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (10/99) and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (January 2006). The text of this report has been formulated to address only those problem areas affecting data quality.

Tetra Tech NUS
Michelle L. Allen
Chemist/Data Validator

TetraTech NUS

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

PROJ_NO: 02267	NSAMPLE	CEF-290A-01S-20100915			CEF-290A-DUP-20100915			CEF-502-07D-20100915			CEF-502-3S-20100916		
SDG: CTOJM09CF008	LAB_ID	1009134-01			1009134-02			1009134-04			1009134-08		
FRACTION: OV	SAMP_DATE	9/15/2010			9/15/2010			9/15/2010			9/16/2010		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF				CEF-290A-01S-20100915								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,4-TRIMETHYLBENZENE		0.3	U		0.3	U		0.3	U		0.3	U	
1,3,5-TRIMETHYLBENZENE		0.3	U		0.3	U		0.3	U		0.3	U	
BENZENE		0.3	U		0.3	U		0.3	U		0.3	U	
ETHYLBENZENE		0.3	U		0.3	U		0.3	U		0.3	U	
ISOPROPYLBENZENE		0.3	U		0.3	U		0.3	U		0.3	U	
TOLUENE		0.3	U		0.3	U		0.3	U		0.3	U	
TOTAL XYLENES		0.3	U		0.3	U		0.3	U		0.3	U	

PROJ_NO: 02267	NSAMPLE	CEF-502-4S-20100916			CEF-502-6S-20100915			CEF-502-9S-20100916			CEF-502-DUP-02-20100916		
SDG: CTOJM09CF008	LAB_ID	1009134-09			1009134-03			1009134-06			1009134-07		
FRACTION: OV	SAMP_DATE	9/16/2010			9/15/2010			9/16/2010			9/16/2010		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF										CEF-502-9S-20100916		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,4-TRIMETHYLBENZENE		0.3	U		0.3	U		0.415	J	P	0.44	J	P
1,3,5-TRIMETHYLBENZENE		0.3	U		0.3	U		0.396	J	P	0.418	J	P
BENZENE		0.3	U		0.3	U		0.3	U		0.3	U	
ETHYLBENZENE		0.3	U		0.3	U		0.745	J	P	0.787	J	P
ISOPROPYLBENZENE		0.3	U		0.3	U		0.376	J	P	0.408	J	P
TOLUENE		0.3	U		0.3	U		0.3	U		0.3	U	
TOTAL XYLENES		0.3	U		0.3	U		0.3	U		0.3	U	

PROJ_NO: 02267	NSAMPLE	CEF-502-TB-20100915		
SDG: CTOJM09CF008	LAB_ID	1009134-05		
FRACTION: OV	SAMP_DATE	9/15/2010		
MEDIA: WATER	QC_TYPE	NM		
	UNITS	UG/L		
	PCT_SOLIDS	0.0		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
1,2,4-TRIMETHYLBENZENE		0.3	U	
1,3,5-TRIMETHYLBENZENE		0.3	U	
BENZENE		0.3	U	
ETHYLBENZENE		0.3	U	
ISOPROPYLBENZENE		0.3	U	
TOLUENE		0.3	U	
TOTAL XYLENES		0.3	U	

PROJ_NO: 02267	NSAMPLE	CEF-290A-01S-20100915			CEF-290A-DUP-20100915			CEF-502-07D-20100915			CEF-502-3S-20100916		
SDG: CTOJM09CF008	LAB_ID	1009134-01			1009134-02			1009134-04			1009134-08		
FRACTION: PAH	SAMP_DATE	9/15/2010			9/15/2010			9/15/2010			9/16/2010		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF				CEF-290A-01S-20100915								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1-METHYLNAPHTHALENE		0.0187	U		0.0189	U		0.0187	U		0.519		
2-METHYLNAPHTHALENE		0.0189	J	P	0.0189	U		0.0187	U		0.0547	J	P
ACENAPHTHENE		0.0206	J	P	0.0189	U		0.0187	U		0.0614	J	P
ACENAPHTHYLENE		0.0187	U		0.0189	U		0.0187	U		0.0185	U	
ANTHRACENE		0.0284	J	P	0.0189	U		0.0187	U		0.0185	U	
BENZO(A)ANTHRACENE		0.0357	J	P	0.0189	U		0.0187	U		0.0185	U	
BENZO(A)PYRENE		0.0316	J	P	0.0189	U		0.0187	U		0.0185	U	
BENZO(B)FLUORANTHENE		0.0455	J	P	0.0189	U		0.0187	U		0.0185	U	
BENZO(G,H,I)PERYLENE		0.0465	J	P	0.0189	U		0.0187	U		0.0185	U	
BENZO(K)FLUORANTHENE		0.0427	J	P	0.0189	U		0.0187	U		0.0185	U	
CHRYSENE		0.0425	J	P	0.0189	U		0.019	J	P	0.0185	U	
DIBENZO(A,H)ANTHRACENE		0.044	J	P	0.0189	U		0.0187	U		0.0185	U	
FLUORANTHENE		0.0403	J	P	0.0196	J	P	0.0259	J	P	0.0218	J	P
FLUORENE		0.0268	J	P	0.0189	U		0.0187	U		0.0185	U	
INDENO(1,2,3-CD)PYRENE		0.0465	J	P	0.0189	U		0.0187	U		0.0185	U	
NAPHTHALENE		0.0187	U		0.0189	U		0.0187	U		0.0711	J	P
PHENANTHRENE		0.0454	J	P	0.025	J	P	0.0302	J	P	0.0185	U	
PYRENE		0.0421	J	P	0.0193	J	P	0.0289	J	P	0.0209	J	P

PROJ_NO: 02267	NSAMPLE	CEF-502-4S-20100916			CEF-502-6S-20100915			CEF-502-9S-20100916			CEF-502-DUP-02-20100916		
SDG: CTOJM09CF008	LAB_ID	1009134-09			1009134-03			1009134-06			1009134-07		
FRACTION: PAH	SAMP_DATE	9/16/2010			9/15/2010			9/16/2010			9/16/2010		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF										CEF-502-9S-20100916		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1-METHYLNAPHTHALENE		0.0546	J	P	0.727			2.03			1.6		
2-METHYLNAPHTHALENE		0.907			0.829			1.67			1.25		
ACENAPHTHENE		0.0296	J	P	1.09			0.0185	U		0.0187	U	
ACENAPHTHYLENE		0.0187	U		0.0185	U		0.0185	U		0.0187	U	
ANTHRACENE		0.0187	U		0.0185	U		0.0185	U		0.0187	U	
BENZO(A)ANTHRACENE		0.0187	U		0.0303	J	P	0.0185	U		0.0187	U	
BENZO(A)PYRENE		0.0187	U		0.0223	J	P	0.0185	U		0.0187	U	
BENZO(B)FLUORANTHENE		0.0187	U		0.0323	J	P	0.0185	U		0.0187	U	
BENZO(G,H,I)PERYLENE		0.0187	U		0.0263	J	P	0.0185	U		0.0187	U	
BENZO(K)FLUORANTHENE		0.0187	U		0.034	J	P	0.0185	U		0.0187	U	
CHRYSENE		0.0187	U		0.0288	J	P	0.0185	U		0.0187	U	
DIBENZO(A,H)ANTHRACENE		0.0187	U		0.0271	J	P	0.0185	U		0.0187	U	
FLUORANTHENE		0.0187	U		0.0433	J	P	0.0185	U		0.0187	U	
FLUORENE		0.032	J	P	0.0185	U		0.0185	U		0.0187	U	
INDENO(1,2,3-CD)PYRENE		0.0187	U		0.0297	J	P	0.0185	U		0.0187	U	
NAPHTHALENE		0.12			0.0185	U		0.879			0.695		
PHENANTHRENE		0.0195	J	P	0.0185	U		0.0185	UJ	G	0.459	J	G
PYRENE		0.0187	U		0.0494	J	P	0.0185	U		0.0187	U	

PROJ_NO: 02267	NSAMPLE	CEF-290A-01S-20100915			CEF-290A-DUP-20100915			CEF-502-07D-20100915			CEF-502-3S-20100916		
SDG: CTOJM09CF008	LAB_ID	1009134-01			1009134-02			1009134-04			1009134-08		
FRACTION: PET	SAMP_DATE	9/15/2010			9/15/2010			9/15/2010			9/16/2010		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/L			MG/L			MG/L			MG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF				CEF-290A-01S-20100915								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
TPH (C08-C40)		0.0794	U		0.0787	U		0.0787	U		0.33		

PROJ_NO: 02267	NSAMPLE	CEF-502-4S-20100916			CEF-502-6S-20100915			CEF-502-9S-20100916			CEF-502-DUP-02-20100916		
SDG: CTOJM09CF008	LAB_ID	1009134-09			1009134-03			1009134-06			1009134-07		
FRACTION: PET	SAMP_DATE	9/16/2010			9/15/2010			9/16/2010			9/16/2010		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/L			MG/L			MG/L			MG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF										CEF-502-9S-20100916		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
TPH (C08-C40)		0.0794	U		0.652			2.36			2.26		

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

ANALYSIS DATA SHEET

CEF-290A-01S-20100915

Laboratory:	Empirical Laboratories, LLC			SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)			Project:	CTO JM09 BP Wells_2010
Matrix:	Ground Water	Laboratory ID:	1009134-01	File ID:	0913401.D
Sampled:	09/15/10 10:33	Prepared:	09/25/10 00:00	Analyzed:	09/25/10 20:23
Solids:		Preparation:	5030B	Dilution:	1

Batch: 0I25920 Sequence: 0I27008 Calibration: 0268001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		0.300	0.500	1.00	U
100-41-4	Ethylbenzene		0.300	0.500	1.00	U
98-82-8	Isopropylbenzene		0.300	0.500	1.00	U
108-88-3	Toluene		0.300	0.500	1.00	U
108-67-8	1,3,5-Trimethylbenzene		0.300	0.500	1.00	U
95-63-6	1,2,4-Trimethylbenzene		0.300	0.500	1.00	U
1330-20-7	Xylenes (total)		0.300	1.50	3.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	30.74	102	75 - 120	
Dibromofluoromethane	30.00	33.52	112	85 - 115	
1,2-Dichloroethane-d4	30.00	29.54	98.5	70 - 120	
Toluene-d8	30.00	28.20	94.0	85 - 120	

ANALYSIS DATA SHEET

CEF-290A-DUP-20100915

Laboratory:	Empirical Laboratories, LLC			SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)			Project:	CTO JM09 BP Wells_2010
Matrix:	Ground Water	Laboratory ID:	1009134-02	File ID:	0913402.D
Sampled:	09/15/10 00:00	Prepared:	09/25/10 00:00	Analyzed:	09/25/10 20:54
Solids:		Preparation:	5030B	Dilution:	1

Batch: 0I25920 Sequence: 0I27008 Calibration: 0268001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		0.300	0.500	1.00	U
100-41-4	Ethylbenzene		0.300	0.500	1.00	U
98-82-8	Isopropylbenzene		0.300	0.500	1.00	U
108-88-3	Toluene		0.300	0.500	1.00	U
108-67-8	1,3,5-Trimethylbenzene		0.300	0.500	1.00	U
95-63-6	1,2,4-Trimethylbenzene		0.300	0.500	1.00	U
1330-20-7	Xylenes (total)		0.300	1.50	3.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	30.80	103	75 - 120	
Dibromofluoromethane	30.00	33.25	111	85 - 115	
1,2-Dichloroethane-d4	30.00	30.99	103	70 - 120	
Toluene-d8	30.00	28.51	95.0	85 - 120	

ANALYSIS DATA SHEET

CEF-502-6S-20100915

Laboratory:	Empirical Laboratories, LLC			SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)			Project:	CTO JM09 BP Wells_2010
Matrix:	Ground Water	Laboratory ID:	1009134-03	File ID:	0913403.D
Sampled:	09/15/10 13:23	Prepared:	09/25/10 00:00	Analyzed:	09/25/10 21:24
Solids:		Preparation:	5030B	Dilution:	1

Batch: 0I25920 Sequence: 0I27008 Calibration: 0268001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		0.300	0.500	1.00	U
100-41-4	Ethylbenzene		0.300	0.500	1.00	U
98-82-8	Isopropylbenzene		0.300	0.500	1.00	U
108-88-3	Toluene		0.300	0.500	1.00	U
108-67-8	1,3,5-Trimethylbenzene		0.300	0.500	1.00	U
95-63-6	1,2,4-Trimethylbenzene		0.300	0.500	1.00	U
1330-20-7	Xylenes (total)		0.300	1.50	3.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	30.95	103	75 - 120	
Dibromofluoromethane	30.00	33.62	112	85 - 115	
1,2-Dichloroethane-d4	30.00	31.11	104	70 - 120	
Toluene-d8	30.00	28.38	94.6	85 - 120	

ANALYSIS DATA SHEET

CEF-502-07D-20100915

Laboratory:	Empirical Laboratories, LLC			SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)			Project:	CTO JM09 BP Wells_2010
Matrix:	Ground Water	Laboratory ID:	1009134-04	File ID:	0913404.D
Sampled:	09/15/10 13:49	Prepared:	09/25/10 00:00	Analyzed:	09/25/10 21:55
Solids:		Preparation:	5030B	Dilution:	1

Batch: 0I25920 Sequence: 0I27008 Calibration: 0268001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		0.300	0.500	1.00	U
100-41-4	Ethylbenzene		0.300	0.500	1.00	U
98-82-8	Isopropylbenzene		0.300	0.500	1.00	U
108-88-3	Toluene		0.300	0.500	1.00	U
108-67-8	1,3,5-Trimethylbenzene		0.300	0.500	1.00	U
95-63-6	1,2,4-Trimethylbenzene		0.300	0.500	1.00	U
1330-20-7	Xylenes (total)		0.300	1.50	3.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	31.49	105	75 - 120	
Dibromofluoromethane	30.00	33.99	113	85 - 115	
1,2-Dichloroethane-d4	30.00	30.11	100	70 - 120	
Toluene-d8	30.00	28.73	95.8	85 - 120	

ANALYSIS DATA SHEET

CEF-502-TB-20100915

Laboratory:	Empirical Laboratories, LLC			SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)			Project:	CTO JM09 BP Wells_2010
Matrix:	Water	Laboratory ID:	1009134-05	File ID:	0913405.D
Sampled:	09/15/10 00:00	Prepared:	09/25/10 00:00	Analyzed:	09/25/10 22:25
Solids:		Preparation:	5030B	Dilution:	1

Batch: 0I25920 Sequence: 0I27008 Calibration: 0268001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		0.300	0.500	1.00	U
100-41-4	Ethylbenzene		0.300	0.500	1.00	U
98-82-8	Isopropylbenzene		0.300	0.500	1.00	U
108-88-3	Toluene		0.300	0.500	1.00	U
108-67-8	1,3,5-Trimethylbenzene		0.300	0.500	1.00	U
95-63-6	1,2,4-Trimethylbenzene		0.300	0.500	1.00	U
1330-20-7	Xylenes (total)		0.300	1.50	3.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	31.76	106	75 - 120	
Dibromofluoromethane	30.00	34.29	114	85 - 115	
1,2-Dichloroethane-d4	30.00	29.45	98.2	70 - 120	
Toluene-d8	30.00	28.69	95.6	85 - 120	

ANALYSIS DATA SHEET

CEF-502-9S-20100916

Laboratory:	Empirical Laboratories, LLC			SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)			Project:	CTO JM09 BP Wells_2010
Matrix:	Ground Water	Laboratory ID:	1009134-06	File ID:	0913406.D
Sampled:	09/16/10 11:45	Prepared:	09/25/10 00:00	Analyzed:	09/25/10 22:56
Solids:		Preparation:	5030B	Dilution:	1

Batch: 0I25920 Sequence: 0I27008 Calibration: 0268001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		0.300	0.500	1.00	U
100-41-4	Ethylbenzene	0.745	0.300	0.500	1.00	I
98-82-8	Isopropylbenzene	0.376	0.300	0.500	1.00	I
108-88-3	Toluene		0.300	0.500	1.00	U
108-67-8	1,3,5-Trimethylbenzene	0.396	0.300	0.500	1.00	I
95-63-6	1,2,4-Trimethylbenzene	0.415	0.300	0.500	1.00	I
1330-20-7	Xylenes (total)		0.300	1.50	3.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	31.22	104	75 - 120	
Dibromofluoromethane	30.00	33.34	111	85 - 115	
1,2-Dichloroethane-d4	30.00	30.67	102	70 - 120	
Toluene-d8	30.00	28.55	95.2	85 - 120	

ANALYSIS DATA SHEET

CEF-502-DUP-02-20100916

Laboratory:	Empirical Laboratories, LLC			SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)			Project:	CTO JM09 BP Wells_2010
Matrix:	Ground Water	Laboratory ID:	1009134-07	File ID:	0913407.D
Sampled:	09/16/10 00:00	Prepared:	09/25/10 00:00	Analyzed:	09/25/10 23:26
Solids:		Preparation:	5030B	Dilution:	1

Batch: 0I25920 Sequence: 0I27008 Calibration: 0268001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		0.300	0.500	1.00	U
100-41-4	Ethylbenzene	0.787	0.300	0.500	1.00	I
98-82-8	Isopropylbenzene	0.408	0.300	0.500	1.00	I
108-88-3	Toluene		0.300	0.500	1.00	U
108-67-8	1,3,5-Trimethylbenzene	0.418	0.300	0.500	1.00	I
95-63-6	1,2,4-Trimethylbenzene	0.440	0.300	0.500	1.00	I
1330-20-7	Xylenes (total)		0.300	1.50	3.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	31.65	105	75 - 120	
Dibromofluoromethane	30.00	33.00	110	85 - 115	
1,2-Dichloroethane-d4	30.00	30.28	101	70 - 120	
Toluene-d8	30.00	28.78	95.9	85 - 120	

ANALYSIS DATA SHEET

CEF-502-3S-20100916

Laboratory:	Empirical Laboratories, LLC			SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)			Project:	CTO JM09 BP Wells_2010
Matrix:	Ground Water	Laboratory ID:	1009134-08	File ID:	0913408.D
Sampled:	09/16/10 12:45	Prepared:	09/27/10 00:00	Analyzed:	09/27/10 12:06
Solids:		Preparation:	5030B	Dilution:	1

Batch: 0I27002 Sequence: 0I27013 Calibration: 0268001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		0.300	0.500	1.00	U
100-41-4	Ethylbenzene		0.300	0.500	1.00	U
98-82-8	Isopropylbenzene		0.300	0.500	1.00	U
108-88-3	Toluene		0.300	0.500	1.00	U
108-67-8	1,3,5-Trimethylbenzene		0.300	0.500	1.00	U
95-63-6	1,2,4-Trimethylbenzene		0.300	0.500	1.00	U
1330-20-7	Xylenes (total)		0.300	1.50	3.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	32.15	107	75 - 120	
Dibromofluoromethane	30.00	34.04	113	85 - 115	
1,2-Dichloroethane-d4	30.00	30.64	102	70 - 120	
Toluene-d8	30.00	28.94	96.5	85 - 120	

ANALYSIS DATA SHEET

CEF-502-4S-20100916

Laboratory:	Empirical Laboratories, LLC			SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)			Project:	CTO JM09 BP Wells_2010
Matrix:	Ground Water	Laboratory ID:	1009134-09	File ID:	0913409.D
Sampled:	09/16/10 13:35	Prepared:	09/27/10 00:00	Analyzed:	09/27/10 12:37
Solids:		Preparation:	5030B	Dilution:	1

Batch: 0I27002 Sequence: 0I27013 Calibration: 0268001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		0.300	0.500	1.00	U
100-41-4	Ethylbenzene		0.300	0.500	1.00	U
98-82-8	Isopropylbenzene		0.300	0.500	1.00	U
108-88-3	Toluene		0.300	0.500	1.00	U
108-67-8	1,3,5-Trimethylbenzene		0.300	0.500	1.00	U
95-63-6	1,2,4-Trimethylbenzene		0.300	0.500	1.00	U
1330-20-7	Xylenes (total)		0.300	1.50	3.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	31.98	107	75 - 120	
Dibromofluoromethane	30.00	33.67	112	85 - 115	
1,2-Dichloroethane-d4	30.00	28.85	96.2	70 - 120	
Toluene-d8	30.00	29.44	98.1	85 - 120	

ANALYSIS DATA SHEET

CEF-290A-01S-20100915

Laboratory:	Empirical Laboratories, LLC			SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)			Project:	CTO JM09 BP Wells_2010
Matrix:	Ground Water	Laboratory ID:	1009134-01	File ID:	0913401.D
Sampled:	09/15/10 10:33	Prepared:	09/20/10 10:45	Analyzed:	09/24/10 14:57
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 0I20006 Sequence: 0I26707 Calibration: 0237003 Instrument: MS-BNA4

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
83-32-9	Acenaphthene	0.0206	0.0187	0.0374	0.0935	I
208-96-8	Acenaphthylene		0.0187	0.0374	0.0935	U
120-12-7	Anthracene	0.0284	0.0187	0.0374	0.0935	I
56-55-3	Benzo(a)anthracene	0.0357	0.0187	0.0374	0.0935	N I
50-32-8	Benzo(a)pyrene	0.0316	0.0187	0.0374	0.0935	I
205-99-2	Benzo(b)fluoranthene	0.0455	0.0187	0.0374	0.0935	N I
191-24-2	Benzo(g,h,i)perylene	0.0465	0.0187	0.0374	0.0935	N I
207-08-9	Benzo(k)fluoranthene	0.0427	0.0187	0.0374	0.0935	N I
218-01-9	Chrysene	0.0425	0.0187	0.0374	0.0935	N I
53-70-3	Dibenz(a,h)anthracene	0.0440	0.0187	0.0374	0.0935	N I
206-44-0	Fluoranthene	0.0403	0.0187	0.0374	0.0935	I
86-73-7	Fluorene	0.0268	0.0187	0.0374	0.0935	I
193-39-5	Indeno(1,2,3-cd)pyrene	0.0465	0.0187	0.0374	0.0935	I
90-12-0	1-Methylnaphthalene		0.0187	0.0374	0.0935	U
91-57-6	2-Methylnaphthalene	0.0189	0.0187	0.0374	0.0935	I
91-20-3	Naphthalene		0.0187	0.0374	0.0935	U
85-01-8	Phenanthrene	0.0454	0.0187	0.0374	0.0935	I
129-00-0	Pyrene	0.0421	0.0187	0.0374	0.0935	I

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	46.73	26.03	55.7	34 - 167	
Terphenyl-d14	46.73	17.94	38.4	34 - 167	

ANALYSIS DATA SHEET

CEF-290A-DUP-20100915

Laboratory:	Empirical Laboratories, LLC			SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)			Project:	CTO JM09 BP Wells_2010
Matrix:	Ground Water	Laboratory ID:	1009134-02	File ID:	0913402.D
Sampled:	09/15/10 00:00	Prepared:	09/20/10 10:45	Analyzed:	09/24/10 15:26
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 0I20006 Sequence: 0I26707 Calibration: 0237003 Instrument: MS-BNA4

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
83-32-9	Acenaphthene		0.0189	0.0377	0.0943	U
208-96-8	Acenaphthylene		0.0189	0.0377	0.0943	U
120-12-7	Anthracene		0.0189	0.0377	0.0943	U
56-55-3	Benzo(a)anthracene		0.0189	0.0377	0.0943	U
50-32-8	Benzo(a)pyrene		0.0189	0.0377	0.0943	U
205-99-2	Benzo(b)fluoranthene		0.0189	0.0377	0.0943	U
191-24-2	Benzo(g,h,i)perylene		0.0189	0.0377	0.0943	U
207-08-9	Benzo(k)fluoranthene		0.0189	0.0377	0.0943	U
218-01-9	Chrysene		0.0189	0.0377	0.0943	U
53-70-3	Dibenz(a,h)anthracene		0.0189	0.0377	0.0943	U
206-44-0	Fluoranthene	0.0196	0.0189	0.0377	0.0943	I
86-73-7	Fluorene		0.0189	0.0377	0.0943	U
193-39-5	Indeno(1,2,3-cd)pyrene		0.0189	0.0377	0.0943	U
90-12-0	1-Methylnaphthalene		0.0189	0.0377	0.0943	U
91-57-6	2-Methylnaphthalene		0.0189	0.0377	0.0943	U
91-20-3	Naphthalene		0.0189	0.0377	0.0943	U
85-01-8	Phenanthrene	0.0250	0.0189	0.0377	0.0943	I
129-00-0	Pyrene	0.0193	0.0189	0.0377	0.0943	I

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	47.17	30.74	65.2	34 - 167	
Terphenyl-d14	47.17	32.70	69.3	34 - 167	

ANALYSIS DATA SHEET

CEF-502-07D-20100915

Laboratory:	Empirical Laboratories, LLC			SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)			Project:	CTO JM09 BP Wells_2010
Matrix:	Ground Water	Laboratory ID:	1009134-04	File ID:	0913404.D
Sampled:	09/15/10 13:49	Prepared:	09/20/10 10:45	Analyzed:	09/24/10 16:23
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 0I20006 Sequence: 0I26707 Calibration: 0237003 Instrument: MS-BNA4

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
83-32-9	Acenaphthene		0.0187	0.0374	0.0935	U
208-96-8	Acenaphthylene		0.0187	0.0374	0.0935	U
120-12-7	Anthracene		0.0187	0.0374	0.0935	U
56-55-3	Benzo(a)anthracene		0.0187	0.0374	0.0935	U
50-32-8	Benzo(a)pyrene		0.0187	0.0374	0.0935	U
205-99-2	Benzo(b)fluoranthene		0.0187	0.0374	0.0935	U
191-24-2	Benzo(g,h,i)perylene		0.0187	0.0374	0.0935	U
207-08-9	Benzo(k)fluoranthene		0.0187	0.0374	0.0935	U
218-01-9	Chrysene	0.0190	0.0187	0.0374	0.0935	I
53-70-3	Dibenz(a,h)anthracene		0.0187	0.0374	0.0935	U
206-44-0	Fluoranthene	0.0259	0.0187	0.0374	0.0935	I
86-73-7	Fluorene		0.0187	0.0374	0.0935	U
193-39-5	Indeno(1,2,3-cd)pyrene		0.0187	0.0374	0.0935	U
90-12-0	1-Methylnaphthalene		0.0187	0.0374	0.0935	U
91-57-6	2-Methylnaphthalene		0.0187	0.0374	0.0935	U
91-20-3	Naphthalene		0.0187	0.0374	0.0935	U
85-01-8	Phenanthrene	0.0302	0.0187	0.0374	0.0935	I
129-00-0	Pyrene	0.0289	0.0187	0.0374	0.0935	I

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	46.73	25.59	54.8	34 - 167	
Terphenyl-d14	46.73	29.46	63.0	34 - 167	

ANALYSIS DATA SHEET

CEF-502-3S-20100916

Laboratory:	Empirical Laboratories, LLC			SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)			Project:	CTO JM09 BP Wells_2010
Matrix:	Ground Water	Laboratory ID:	1009134-08	File ID:	0913408.D
Sampled:	09/16/10 12:45	Prepared:	09/20/10 10:45	Analyzed:	09/24/10 17:49
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 0I20006 Sequence: 0I26707 Calibration: 0237003 Instrument: MS-BNA4

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
83-32-9	Acenaphthene	0.0614	0.0185	0.0370	0.0926	I
208-96-8	Acenaphthylene		0.0185	0.0370	0.0926	U
120-12-7	Anthracene		0.0185	0.0370	0.0926	U
56-55-3	Benzo(a)anthracene		0.0185	0.0370	0.0926	U
50-32-8	Benzo(a)pyrene		0.0185	0.0370	0.0926	U
205-99-2	Benzo(b)fluoranthene		0.0185	0.0370	0.0926	U
191-24-2	Benzo(g,h,i)perylene		0.0185	0.0370	0.0926	U
207-08-9	Benzo(k)fluoranthene		0.0185	0.0370	0.0926	U
218-01-9	Chrysene		0.0185	0.0370	0.0926	U
53-70-3	Dibenz(a,h)anthracene		0.0185	0.0370	0.0926	U
206-44-0	Fluoranthene	0.0218	0.0185	0.0370	0.0926	I
86-73-7	Fluorene		0.0185	0.0370	0.0926	U
193-39-5	Indeno(1,2,3-cd)pyrene		0.0185	0.0370	0.0926	U
90-12-0	1-Methylnaphthalene	0.519	0.0185	0.0370	0.0926	
91-57-6	2-Methylnaphthalene	0.0547	0.0185	0.0370	0.0926	I
91-20-3	Naphthalene	0.0711	0.0185	0.0370	0.0926	I
85-01-8	Phenanthrene		0.0185	0.0370	0.0926	U
129-00-0	Pyrene	0.0209	0.0185	0.0370	0.0926	I

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	46.30	26.32	56.9	34 - 167	
Terphenyl-d14	46.30	27.42	59.2	34 - 167	

ANALYSIS DATA SHEET

CEF-502-4S-20100916

Laboratory:	Empirical Laboratories, LLC			SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)			Project:	CTO JM09 BP Wells_2010
Matrix:	Ground Water	Laboratory ID:	1009134-09	File ID:	0913409.D
Sampled:	09/16/10 13:35	Prepared:	09/20/10 10:45	Analyzed:	09/24/10 18:17
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 0I20006 Sequence: 0I26707 Calibration: 0237003 Instrument: MS-BNA4

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
83-32-9	Acenaphthene	0.0296	0.0187	0.0374	0.0935	I
208-96-8	Acenaphthylene		0.0187	0.0374	0.0935	U
120-12-7	Anthracene		0.0187	0.0374	0.0935	U
56-55-3	Benzo(a)anthracene		0.0187	0.0374	0.0935	U
50-32-8	Benzo(a)pyrene		0.0187	0.0374	0.0935	U
205-99-2	Benzo(b)fluoranthene		0.0187	0.0374	0.0935	U
191-24-2	Benzo(g,h,i)perylene		0.0187	0.0374	0.0935	U
207-08-9	Benzo(k)fluoranthene		0.0187	0.0374	0.0935	U
218-01-9	Chrysene		0.0187	0.0374	0.0935	U
53-70-3	Dibenz(a,h)anthracene		0.0187	0.0374	0.0935	U
206-44-0	Fluoranthene		0.0187	0.0374	0.0935	U
86-73-7	Fluorene	0.0320	0.0187	0.0374	0.0935	I
193-39-5	Indeno(1,2,3-cd)pyrene		0.0187	0.0374	0.0935	U
90-12-0	1-Methylnaphthalene	0.0546	0.0187	0.0374	0.0935	I
91-57-6	2-Methylnaphthalene	0.907	0.0187	0.0374	0.0935	
91-20-3	Naphthalene	0.120	0.0187	0.0374	0.0935	
85-01-8	Phenanthrene	0.0195	0.0187	0.0374	0.0935	I
129-00-0	Pyrene		0.0187	0.0374	0.0935	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	46.73	32.36	69.2	34 - 167	
Terphenyl-d14	46.73	34.51	73.8	34 - 167	

ANALYSIS DATA SHEET

CEF-502-6S-20100915

Laboratory:	Empirical Laboratories, LLC			SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)			Project:	CTO JM09 BP Wells_2010
Matrix:	Ground Water	Laboratory ID:	1009134-03	File ID:	0913403.D
Sampled:	09/15/10 13:23	Prepared:	09/20/10 10:45	Analyzed:	09/24/10 15:55
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 0I20006 Sequence: 0I26707 Calibration: 0237003 Instrument: MS-BNA4

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
83-32-9	Acenaphthene	1.09	0.0185	0.0370	0.0926	
208-96-8	Acenaphthylene		0.0185	0.0370	0.0926	U
120-12-7	Anthracene		0.0185	0.0370	0.0926	U
56-55-3	Benzo(a)anthracene	0.0303	0.0185	0.0370	0.0926	I
50-32-8	Benzo(a)pyrene	0.0223	0.0185	0.0370	0.0926	I
205-99-2	Benzo(b)fluoranthene	0.0323	0.0185	0.0370	0.0926	I
191-24-2	Benzo(g,h,i)perylene	0.0263	0.0185	0.0370	0.0926	I
207-08-9	Benzo(k)fluoranthene	0.0340	0.0185	0.0370	0.0926	I
218-01-9	Chrysene	0.0288	0.0185	0.0370	0.0926	I
53-70-3	Dibenz(a,h)anthracene	0.0271	0.0185	0.0370	0.0926	I
206-44-0	Fluoranthene	0.0433	0.0185	0.0370	0.0926	I
86-73-7	Fluorene		0.0185	0.0370	0.0926	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.0297	0.0185	0.0370	0.0926	I
90-12-0	1-Methylnaphthalene	0.727	0.0185	0.0370	0.0926	
91-57-6	2-Methylnaphthalene	0.829	0.0185	0.0370	0.0926	
91-20-3	Naphthalene		0.0185	0.0370	0.0926	U
85-01-8	Phenanthrene		0.0185	0.0370	0.0926	U
129-00-0	Pyrene	0.0494	0.0185	0.0370	0.0926	I

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	46.30	25.78	55.7	34 - 167	
Terphenyl-d14	46.30	31.49	68.0	34 - 167	

ANALYSIS DATA SHEET

CEF-502-9S-20100916

Laboratory:	Empirical Laboratories, LLC			SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)			Project:	CTO JM09 BP Wells_2010
Matrix:	Ground Water	Laboratory ID:	1009134-06	File ID:	0913406.D
Sampled:	09/16/10 11:45	Prepared:	09/20/10 10:45	Analyzed:	09/24/10 16:52
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 0I20006 Sequence: 0I26707 Calibration: 0237003 Instrument: MS-BNA4

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
83-32-9	Acenaphthene		0.0185	0.0370	0.0926	U
208-96-8	Acenaphthylene		0.0185	0.0370	0.0926	U
120-12-7	Anthracene		0.0185	0.0370	0.0926	U
56-55-3	Benzo(a)anthracene		0.0185	0.0370	0.0926	U
50-32-8	Benzo(a)pyrene		0.0185	0.0370	0.0926	U
205-99-2	Benzo(b)fluoranthene		0.0185	0.0370	0.0926	U
191-24-2	Benzo(g,h,i)perylene		0.0185	0.0370	0.0926	U
207-08-9	Benzo(k)fluoranthene		0.0185	0.0370	0.0926	U
218-01-9	Chrysene		0.0185	0.0370	0.0926	U
53-70-3	Dibenz(a,h)anthracene		0.0185	0.0370	0.0926	U
206-44-0	Fluoranthene		0.0185	0.0370	0.0926	U
86-73-7	Fluorene		0.0185	0.0370	0.0926	U
193-39-5	Indeno(1,2,3-cd)pyrene		0.0185	0.0370	0.0926	U
90-12-0	1-Methylnaphthalene	2.03	0.0185	0.0370	0.0926	
91-57-6	2-Methylnaphthalene	1.67	0.0185	0.0370	0.0926	
91-20-3	Naphthalene	0.879	0.0185	0.0370	0.0926	
85-01-8	Phenanthrene		0.0185	0.0370	0.0926	U
129-00-0	Pyrene		0.0185	0.0370	0.0926	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	46.30	32.38	69.9	34 - 167	
Terphenyl-d14	46.30	31.72	68.5	34 - 167	

ANALYSIS DATA SHEET

CEF-502-DUP-02-20100916

Laboratory:	Empirical Laboratories, LLC			SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)			Project:	CTO JM09 BP Wells_2010
Matrix:	Ground Water	Laboratory ID:	1009134-07	File ID:	0913407.D
Sampled:	09/16/10 00:00	Prepared:	09/20/10 10:45	Analyzed:	09/24/10 17:20
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 0I20006 Sequence: 0I26707 Calibration: 0237003 Instrument: MS-BNA4

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
83-32-9	Acenaphthene		0.0187	0.0374	0.0935	U
208-96-8	Acenaphthylene		0.0187	0.0374	0.0935	U
120-12-7	Anthracene		0.0187	0.0374	0.0935	U
56-55-3	Benzo(a)anthracene		0.0187	0.0374	0.0935	U
50-32-8	Benzo(a)pyrene		0.0187	0.0374	0.0935	U
205-99-2	Benzo(b)fluoranthene		0.0187	0.0374	0.0935	U
191-24-2	Benzo(g,h,i)perylene		0.0187	0.0374	0.0935	U
207-08-9	Benzo(k)fluoranthene		0.0187	0.0374	0.0935	U
218-01-9	Chrysene		0.0187	0.0374	0.0935	U
53-70-3	Dibenz(a,h)anthracene		0.0187	0.0374	0.0935	U
206-44-0	Fluoranthene		0.0187	0.0374	0.0935	U
86-73-7	Fluorene		0.0187	0.0374	0.0935	U
193-39-5	Indeno(1,2,3-cd)pyrene		0.0187	0.0374	0.0935	U
90-12-0	1-Methylnaphthalene	1.60	0.0187	0.0374	0.0935	
91-57-6	2-Methylnaphthalene	1.25	0.0187	0.0374	0.0935	
91-20-3	Naphthalene	0.695	0.0187	0.0374	0.0935	
85-01-8	Phenanthrene	0.459	0.0187	0.0374	0.0935	
129-00-0	Pyrene		0.0187	0.0374	0.0935	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	46.73	27.64	59.1	34 - 167	
Terphenyl-d14	46.73	31.77	68.0	34 - 167	

ANALYSIS DATA SHEET

CEF-290A-01S-20100915

Laboratory:	Empirical Laboratories, LLC			SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)			Project:	CTO JM09 BP Wells_2010
Matrix:	Ground Water	Laboratory ID:	1009134-01	File ID:	010B1001.D
Sampled:	09/15/10 10:33	Prepared:	09/20/10 11:47	Analyzed:	09/22/10 16:10
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 0I20004 Sequence: 0I26608 Calibration: 0244001 Instrument: GL-GCFID

CAS NO.	COMPOUND	CONC. (mg/L)	DL	LOD	LOQ	Q
.	Petroleum Range Organics		0.0794	0.159	0.318	U

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	0.04673	0.03888	83.2	50 - 150	
o-Terphenyl	0.04673	0.03155	67.5	82 - 142	*

ANALYSIS DATA SHEET

CEF-290A-DUP-20100915

Laboratory:	Empirical Laboratories, LLC			SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)			Project:	CTO JM09 BP Wells_2010
Matrix:	Ground Water	Laboratory ID:	1009134-02	File ID:	013B1301.D
Sampled:	09/15/10 00:00	Prepared:	09/20/10 11:47	Analyzed:	09/22/10 17:54
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 0I20004 Sequence: 0I26608 Calibration: 0244001 Instrument: GL-GCFID

CAS NO.	COMPOUND	CONC. (mg/L)	DL	LOD	LOQ	Q
	Petroleum Range Organics		0.0787	0.157	0.315	U

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	0.04630	0.03731	80.6	50 - 150	
o-Terphenyl	0.04630	0.03112	67.2	82 - 142	*

ANALYSIS DATA SHEET

CEF-502-07D-20100915

Laboratory:	Empirical Laboratories, LLC			SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)			Project:	CTO JM09 BP Wells_2010
Matrix:	Ground Water	Laboratory ID:	1009134-04	File ID:	015B1501.D
Sampled:	09/15/10 13:49	Prepared:	09/20/10 11:47	Analyzed:	09/22/10 19:02
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 0I20004 Sequence: 0I26608 Calibration: 0244001 Instrument: GL-GCFID

CAS NO.	COMPOUND	CONC. (mg/L)	DL	LOD	LOQ	Q
	Petroleum Range Organics		0.0787	0.157	0.315	U

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	0.04630	0.03984	86.1	50 - 150	
o-Terphenyl	0.04630	0.04272	92.3	82 - 142	

ANALYSIS DATA SHEET

CEF-502-3S-20100916

Laboratory:	Empirical Laboratories, LLC			SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)			Project:	CTO JM09 BP Wells_2010
Matrix:	Ground Water	Laboratory ID:	1009134-08	File ID:	018B1801.D
Sampled:	09/16/10 12:45	Prepared:	09/20/10 11:47	Analyzed:	09/22/10 20:44
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 0I20004 Sequence: 0I26608 Calibration: 0244001 Instrument: GL-GCFID

CAS NO.	COMPOUND	CONC. (mg/L)	DL	LOD	LOQ	Q
	Petroleum Range Organics	0.330	0.0787	0.157	0.315	

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	0.04630	0.04436	95.8	50 - 150	
o-Terphenyl	0.04630	0.04594	99.2	82 - 142	

ANALYSIS DATA SHEET

CEF-502-4S-20100916

Laboratory:	Empirical Laboratories, LLC			SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)			Project:	CTO JM09 BP Wells_2010
Matrix:	Ground Water	Laboratory ID:	1009134-09	File ID:	021B2101.D
Sampled:	09/16/10 13:35	Prepared:	09/20/10 11:47	Analyzed:	09/22/10 22:26
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 0I20004 Sequence: 0I26608 Calibration: 0244001 Instrument: GL-GCFID

CAS NO.	COMPOUND	CONC. (mg/L)	DL	LOD	LOQ	Q
	Petroleum Range Organics		0.0794	0.159	0.318	U

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	0.04673	0.03947	84.5	50 - 150	
o-Terphenyl	0.04673	0.03790	81.1	82 - 142	*

ANALYSIS DATA SHEET

CEF-502-6S-20100915

Laboratory:	Empirical Laboratories, LLC			SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)			Project:	CTO JM09 BP Wells_2010
Matrix:	Ground Water	Laboratory ID:	1009134-03	File ID:	014B1401.D
Sampled:	09/15/10 13:23	Prepared:	09/20/10 11:47	Analyzed:	09/22/10 18:28
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 0I20004 Sequence: 0I26608 Calibration: 0244001 Instrument: GL-GCFID

CAS NO.	COMPOUND	CONC. (mg/L)	DL	LOD	LOQ	Q
	Petroleum Range Organics	0.652	0.0787	0.157	0.315	

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	0.04630	0.04357	94.1	50 - 150	
o-Terphenyl	0.04630	0.04492	97.0	82 - 142	

ANALYSIS DATA SHEET

CEF-502-9S-20100916

Laboratory:	Empirical Laboratories, LLC			SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)			Project:	CTO JM09 BP Wells_2010
Matrix:	Ground Water	Laboratory ID:	1009134-06	File ID:	016B1601.D
Sampled:	09/16/10 11:45	Prepared:	09/20/10 11:47	Analyzed:	09/22/10 19:37
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 0I20004 Sequence: 0I26608 Calibration: 0244001 Instrument: GL-GCFID

CAS NO.	COMPOUND	CONC. (mg/L)	DL	LOD	LOQ	Q
	Petroleum Range Organics	2.36	0.0787	0.157	0.315	

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	0.04630	0.03906	84.4	50 - 150	
o-Terphenyl	0.04630	0.04560	98.5	82 - 142	

ANALYSIS DATA SHEET

CEF-502-DUP-02-20100916

Laboratory:	Empirical Laboratories, LLC		SDG:	CTOJM09CF_008	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	CTO JM09 BP Wells_2010	
Matrix:	Ground Water	Laboratory ID:	1009134-07	File ID:	017B1701.D
Sampled:	09/16/10 00:00	Prepared:	09/20/10 11:47	Analyzed:	09/22/10 20:10
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 0I20004 Sequence: 0I26608 Calibration: 0244001 Instrument: GL-GCFID

CAS NO.	COMPOUND	CONC. (mg/L)	DL	LOD	LOQ	Q
	Petroleum Range Organics	2.26	0.0787	0.157	0.315	

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	0.04630	0.03894	84.1	50 - 150	
o-Terphenyl	0.04630	0.04629	100	82 - 142	

APPENDIX C

SUPPORT DOCUMENTATION

SDG CTOJM09CF_

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OV	UG/L	CEF-502-DUP-02-201009	1009134-07	NM	09/16/2010	09/25/2010	09/25/2010	9	0	9
OV	UG/L	CEF-290A-01S-20100915	1009134-01	NM	09/15/2010	09/25/2010	09/25/2010	10	0	10
OV	UG/L	CEF-502-TB-20100915	1009134-05	NM	09/15/2010	09/25/2010	09/25/2010	10	0	10
OV	UG/L	CEF-502-9S-20100916	1009134-06	NM	09/16/2010	09/25/2010	09/25/2010	9	0	9
OV	UG/L	CEF-502-6S-20100915	1009134-03	NM	09/15/2010	09/25/2010	09/25/2010	10	0	10
OV	UG/L	CEF-502-4S-20100916	1009134-09	NM	09/16/2010	09/27/2010	09/27/2010	11	0	11
OV	UG/L	CEF-502-3S-20100916	1009134-08	NM	09/16/2010	09/27/2010	09/27/2010	11	0	11
OV	UG/L	CEF-502-07D-20100915	1009134-04	NM	09/15/2010	09/25/2010	09/25/2010	10	0	10
OV	UG/L	CEF-290A-DUP-20100915	1009134-02	NM	09/15/2010	09/25/2010	09/25/2010	10	0	10
SIM	UG/L	CEF-502-4S-20100916	1009134-09	NM	09/16/2010	09/20/2010	09/24/2010	4	4	8
SIM	UG/L	CEF-290A-01S-20100915	1009134-01	SUR	09/15/2010	09/20/2010	09/24/2010	5	4	9
SIM	UG/L	CEF-290A-DUP-20100915	1009134-02	NM	09/15/2010	09/20/2010	09/24/2010	5	4	9
SIM	UG/L	CEF-290A-DUP-20100915	1009134-02	SUR	09/15/2010	09/20/2010	09/24/2010	5	4	9
SIM	UG/L	CEF-502-07D-20100915	1009134-04	NM	09/15/2010	09/20/2010	09/24/2010	5	4	9
SIM	UG/L	CEF-502-07D-20100915	1009134-04	SUR	09/15/2010	09/20/2010	09/24/2010	5	4	9

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	UG/L	CEF-290A-01S-20100915	1009134-01	NM	09/15/2010	09/20/2010	09/24/2010	5	4	9
SIM	UG/L	CEF-502-DUP-02-201009	1009134-07	NM	09/16/2010	09/20/2010	09/24/2010	4	4	8
SIM	UG/L	CEF-502-3S-20100916	1009134-08	NM	09/16/2010	09/20/2010	09/24/2010	4	4	8
SIM	UG/L	CEF-502-DUP-02-201009	1009134-07	SUR	09/16/2010	09/20/2010	09/24/2010	4	4	8
SIM	UG/L	CEF-502-3S-20100916	1009134-08	SUR	09/16/2010	09/20/2010	09/24/2010	4	4	8
SIM	UG/L	CEF-502-9S-20100916	1009134-06	SUR	09/16/2010	09/20/2010	09/24/2010	4	4	8
SIM	UG/L	CEF-502-9S-20100916	1009134-06	NM	09/16/2010	09/20/2010	09/24/2010	4	4	8
SIM	UG/L	CEF-502-6S-20100915	1009134-03	SUR	09/15/2010	09/20/2010	09/24/2010	5	4	9
SIM	UG/L	CEF-502-6S-20100915	1009134-03	NM	09/15/2010	09/20/2010	09/24/2010	5	4	9
SIM	UG/L	CEF-502-4S-20100916	1009134-09	SUR	09/16/2010	09/20/2010	09/24/2010	4	4	8
TPH	MG/L	CEF-502-DUP-02-201009	1009134-07	NM	09/16/2010	09/20/2010	09/22/2010	4	2	6
TPH	MG/L	CEF-290A-DUP-20100915	1009134-02	NM	09/15/2010	09/20/2010	09/22/2010	5	2	7
TPH	MG/L	CEF-502-07D-20100915	1009134-04	NM	09/15/2010	09/20/2010	09/22/2010	5	2	7
TPH	MG/L	CEF-502-3S-20100916	1009134-08	NM	09/16/2010	09/20/2010	09/22/2010	4	2	6
TPH	MG/L	CEF-502-4S-20100916	1009134-09	NM	09/16/2010	09/20/2010	09/22/2010	4	2	6
TPH	MG/L	CEF-502-6S-20100915	1009134-03	NM	09/15/2010	09/20/2010	09/22/2010	5	2	7
TPH	MG/L	CEF-502-9S-20100916	1009134-06	NM	09/16/2010	09/20/2010	09/22/2010	4	2	6
TPH	MG/L	CEF-290A-01S-20100915	1009134-01	NM	09/15/2010	09/20/2010	09/22/2010	5	2	7

Sample Delivery Group Case Narrative

Receipt Information
The samples were received within the preservation guidelines for the associated methods. The information associated with sample receipt and the Sample Delivery Group (SDG) are included within section 4 of this package, which also provides information on the link between the client sample ID listed on the COC and laboratory's assigned unique sample ID or WorkOrder #. The sample is tracked through the laboratory for all analysis via the assigned WorkOrder #.

All samples that were received were analyzed and none of the samples were placed on hold without analyses. There were no subcontracted analyses for this SDG.

Changes to the Revision
This is an original submittal of the final report package.

Analytical Information
All samples were prepped (where applicable) and analyzed within the standard allowed holding times, unless noted within the exceptions listed below. The laboratory analyzed all samples within the program and method guidelines. The following information is provided specific to individual methods:

Chromatographic Flags for Manual Integration:
The following letters are used to denote manual integrations on the laboratory's raw data in association with chromatographic integrations:

A: The peak was manually integrated as it was not integrated in the original chromatogram.
B: The peak was manually integrated due to resolution or coelution issues in the original chromatogram.
C: The peak was manually integrated to correct the baseline from the original chromatogram.
D: The peak was manually integrated to identify the correct peak as the wrong peak was identified in the original chromatogram.
E: The peak was manually integrated to include the entire peak as the original chromatogram only integrated part of the peak.

SW8260B:
No anomalies or deviations are noted.

SW8270C PAH:
The matrix spikes associated to sample 1009134-01 exceeded criteria for Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(k)fluoranthene, Chrysene and Dibenz(a,h)anthracene.

No additional anomalies or deviations are noted and the data is properly qualified.

FLPRO:
The surrogate o-Terphenyl exceeded criteria in samples 1009134-01, -01MS, -01MSD, -02, and -09.

The retention time for the surrogates o-Terphenyl and/or 2-Fluorobiphenyl exceeded the retention time window in 0I20004-BLK1, 1009134-01, -02, -04, -06, -07, -08, -08MS, -08MSD, and -09. Sample results biased due to the retention time shift were determined to be negligible.

No additional anomalies or deviations are noted and the data is properly qualified.

Data Qualifiers
As applicable and where required, the following general qualifiers are associated with the sample results. Additional qualifiers will be specified within the reporting sections of the data package or within the body of the Case Narrative.

Analytical Report Terms and Qualifiers

MDL: The method detection limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The MDL is determined from analysis of a sample containing the analyte in a given matrix. For DoD QSM 4.1 reporting purposes, this definition is also applied to the reported Detection Limit (DL).

LOD: The Limit of Detection is an estimate of the minimum amount of a substance that an analytical process can reliably detect. An LOD is analyte- and matrix-specific and may be laboratory-dependent. This definition is further clarified in the DoD QSM 4.1 revisions as the smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99%). At the LOD, the false negative rate (Type II error) is 1%.

LOQ: The Limit of Quantitation is the minimum level, concentration, or quantity of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. This term is further clarified within the DoD QSM 4.1 as the lowest concentration that produces a quantitative result within specified limits of precision and bias.

*: An exceeding quality control criteria is associated with the reported result.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero. **For Florida DEP reports this qualifier is "V".**

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound. **For Florida DEP reports this qualifier is "L".**

H1: The result was analyzed outside of the EPA recommended holding time.

H2: The result was extracted outside of the EPA recommended holding time

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the EQL. One should feel confident that the result is greater than zero and less than the EQL. **For Florida DEP reports this qualifier is "I".**

M: Indicates that the sample matrix interfered with the quantitation of the analyte. In dual column analysis the result is reported from the column with the lower concentration. In inorganics, it indicates that the parameters MDL/RL has been raised.

N: The MS/MSD accuracy and/or precision are outside criteria. The predigested spike recovery is not within control limits for the associated parameter.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported unless matrix interference is obvious or for HPLC analysis where the primary column is reported.

Q: The RPD and/or percent recovery exceeded limits in the associated Blank Spike and/or Blank Spike Duplicate.

S: The associated internal standard failed criteria.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the DL.

X: The parameter shows a potential positive bias on a reported concentration due to an ICV or CCV exceeding the upper control limit on the high side.

Y: The parameter shows a potential negative bias on a reported concentration due to an ICV or CCV exceeding the lower control limit on the low side.

LIMS Definitions / Naming Conventions:
The following are general naming conventions that are used throughout the laboratory; however, on a method by method basis, there are additional QAQC items that are named in a consistent format.

BLK: LIMS assigns a unique identifier to the Method Blank by naming it as the letters BLK appended to the Batch ID. A Method Blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The Method Blank is used to assess for possible contamination during preparation and/or analysis steps. Method Blanks within

a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally.

BS: LIMS assigns a unique identifier to the Blank Spike by naming it as the letters BS appended to the Batch ID. The Blank Spike or Lab Control Sample is a controlled analyte-free matrix, which is spiked with known and verified concentrations of target analytes. Spiking concentrations can be referenced in the method SOP. The BS is used to evaluate the viability of analytes taken through the entire prep (when applicable) and analytical process. Blank Spikes within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally. A duplicate Blank Spike will be designated as a BSD.

MS: The LIMS assigns each Client sample with a unique identifier. The Matrix Spike is designated with a MS at the end of the sample's unique identifier. The Matrix Spike sample is used to assess the effect of the sample matrix on the precision and accuracy of the results generated using the selected method. A duplicate Matrix Spike will be designated as a MSD.

IDs: The LIMS assigns each Client sample with a unique identifier. The letter "RE" may potentially be appended to the end of the LIMS Sample ID. And "**RE**" implies that the sample was either re-prepped, re-analyzed straight, or re-analyzed at a dilution. Subsequent re-analysis for the sample will be appended with a numerical value beginning with 1 that will increase incrementally. Eg: RE1, RE2, RE3, etc.

Statement of Data Authenticity:
I certify that, based upon my inquiry of those individuals immediately responsible for obtaining the information and to the best of my knowledge, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in this Case Narrative, as verified by my signature below. During absences, Ms. Marcia K. McGinnity is authorized to sign this Statement of Data Authenticity.

Mr. Rick D. Davis
Laboratory Technical Director / VP Operations

TETRA TECH NUS, INC. CHAIN OF CUSTODY NUMBER № 2083 PAGE 1 OF 2

PROJECT NO: 112600746	FACILITY: Cecil Field Site 502 & 290A	PROJECT MANAGER: Rob Simcik	PHONE NUMBER: 4129218163
LABORATORY NAME AND CONTACT: Empirical Laboratories / Kim Kosteer			
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER: Jeff Kronc	PHONE NUMBER: 904 699-7473
ADDRESS: 621 Mainstream Dr Suite 270			
		CARRIER/WAYBILL NUMBER: FEDEX Airbill 8660 1730 2171	CITY, STATE: Nashville, TN 37228

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2010	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	BTEX (8260B)	Naphthalene (8260B)	PAH (8270C)	TRPH (FL PRO)					COMMENTS
CONTAINER TYPE PLASTIC (P) or GLASS (G)									G	G	G						
PRESERVATIVE USED									HCl	—	HCl	H_2SO_4					
TYPE OF ANALYSIS																	1009134
9/15	1033	CEF-290A-01S-20100915				GW	G	21	X	X	X						MS/MSD -01
9/15	0000	CEF-290A-DUP-20100915				GW	G	7	X	X	X						Cool to 4°C -02
9/15	1323	CEF-502-6S-20100915				GW	G	7	X	X	X						-03
9/15	1349	CEF-502-07D-20100915				GW	G	7	X	X	X						-04
9/15	1000	CEF-502-TB-20100915				QC	G	2	X								-05

1. RELINQUISHED BY	DATE 9/16/10	TIME 1700	1. RECEIVED BY	DATE	TIME
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE 9/17/10	TIME 08:45

COMMENTS 2.6°C

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

CTOJM09CF_008

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TETRA TECH NUS, INC. CHAIN OF CUSTODY NUMBER No. 2089 PAGE 2 OF 2

PROJECT NO: 112G00746	FACILITY: Cecil Field SHe 502 & 290A	PROJECT MANAGER: Rob Simcik	PHONE NUMBER: 4129218163
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER: Jeff Klonk	PHONE NUMBER: 904699-7423
		CARRIER/WAYBILL NUMBER: Fedex Airbill 8660 1730 2171	

LABORATORY NAME AND CONTACT: Empirical Labs / Kim Koszer
ADDRESS: 621 Mainstream Drive Suite 270
CITY, STATE: Nashville, TN 37228

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

CONTAINER TYPE PLASTIC (P) or GLASS (G): G G G
PRESERVATIVE USED: HCl — H2SO4
TYPE OF ANALYSIS: BTEX (SW8260B) Naphthalene (8260B) Isopropylbenzene 135 — QAH (8270C) — TRPH (FLPRO)

1009134

DATE YEAR 2010	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	BTEX	Naphthalene	Isopropylbenzene	QAH	TRPH					COMMENTS
9/16	1145	CEF-502-9$-20100916				GW	G	7	X	X	X							Cool to 4°C -06
9/16	0000	CEF-502-DUP-02-20100916				GW	G	7	X	X	X							-07
9/16	1245	CEF-502-3$-20100916				GW	G	21	X	X	X							MS/MSD -08
9/16	1335	CEF-502-4$-20100916				GW	G	7	X	X	X							-09

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	9/16/10	1700	1. RECEIVED BY		
2. RELINQUISHED BY			2. RECEIVED BY		
3. RELINQUISHED BY			3. RECEIVED BY	9/17/10	08:45

COMMENTS: 2.6°C

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

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CTOJM09CF_008

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 1009134 Number of Coolers: 1 of 7

Client: JTNUS Project: Cecil Field Sites 502+290A

Date/Time Received: 9/17/10 08:45 Date cooler(s) opened: 9/17/10

Opened By (print): Will Schwab (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
   EL Courier Other: _____

If applicable, enter airbill number here: 6440

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 1 Seal date: 9/16/10 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 2-6 °C

Dates samples were logged-in: 9/17/10

9. Initial this form to acknowledge login of sample(s): (Name): Will Schwab (Initial): WS
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A pH < 2 for all FL-PRO's
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____ CAR#: _____

1 1L Amber (UNP) broken in shipment for CEF-502-35-20100916. 1 1L Amber (H_2SO_4) for CEF-502-45-20100916 broken in shipment.

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 1009134 Number of Coolers: 5 of 7

Client: ITNOS Project: Cecil Field Site 5024 290A

Date/Time Received: 9/17/10 08:45 Date cooler(s) opened: 9/17/10

Opened By (print): Will Schwab (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
   EL Courier Other: _____

If applicable, enter airbill number here: 6439

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 1 Seal date: 9/16/10 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 2.3 °C

~~Dates samples were logged in: 9/17/10~~

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

See Page 1 of 7

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 1009134 Number of Coolers: 6 of 7

Client: TTNUS Project: Cecil Field Sites 5042904

Date/Time Received: 9/17/10 08:45 Date cooler(s) opened: 9/17/10

Opened By (print): Will Schwab (signature): [illegible]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
   EL Courier Other: _____

If applicable, enter airbill number here: 6406

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 1 Seal date: 9/16/10 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 2.0 °C

~~Dates samples were logged in: 9/17/10~~

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

See Page 1 of 7

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 1009134 Number of Coolers: 7 of 7

Client: JTNUS Project: Cecil Field Sites 5024-290A

Date/Time Received: **9/17/10** **08:45** Date cooler(s) opened: **9/17/10**

Opened By (print): Will Schwab (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 6450

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 1 Seal date: 9/16/10 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 1.1 °C

~~Dates samples were logged in: 9/17/10~~

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

See Page 1 of 7

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 1009134 Number of Coolers: 4 of 7

Client: ITNOS Project: Cecil Field Site SOL+2904

Date/Time Received: 9/17/10 08:45 Date cooler(s) opened: 9/17/10

Opened By (print): Will Schwab (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
   EL Courier Other: _____

If applicable, enter airbill number here: 2171

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 1 Seal date: 9/16/10 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 4.2 °C

~~Dates samples were logged in: 9/17/10~~

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

Housed trip Blank

See Page 1 of 7

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 1009134 Number of Coolers: 3 of 7

Client: ITNOS Project: Cecil Field Sites 504+290A

Date/Time Received: 9/17/10 08:45 Date cooler(s) opened: 9/17/10

Opened By (print): Will Schwab (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
   EL Courier Other: _____

If applicable, enter airbill number here: 6417

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 1 Seal date: 9/16/10 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 3.3 °C

~~Dates samples were logged in: 9/17/10~~

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

See Page 1 of 7

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 1009134 Number of Coolers: 2 of 7

Client: ITNUS Project: Cecil Field Site 504-2904

Date/Time Received: 9/17/10 08:45 Date cooler(s) opened: 9/17/10

Opened By (print): Will Schwab (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
   EL Courier Other: _____

If applicable, enter airbill number here: 6428

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 1 Seal date: 9/16/10 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 0-6 °C

~~Dates samples were logged in: 9/17/10~~

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

See Page 1 of 7

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

HOLDING TIME SUMMARY
SW8260B

Laboratory: Empirical Laboratories, LLC SDG: CTOJM09CF_008

Client: Tetra Tech NUS, Inc. (T010) Project: CTO JM09 BP Wells_2010

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
CEF-290A-01S-20100915	09/15/10 10:33	09/17/10 08:45	09/25/10 00:00	N/A	14.00	09/25/10 20:23	10.45	14.00	
CEF-290A-DUP-20100915	09/15/10 00:00	09/17/10 08:45	09/25/10 00:00	N/A	14.00	09/25/10 20:54	10.91	14.00	
CEF-502-6S-20100915	09/15/10 13:23	09/17/10 08:45	09/25/10 00:00	N/A	14.00	09/25/10 21:24	10.38	14.00	
CEF-502-07D-20100915	09/15/10 13:49	09/17/10 08:45	09/25/10 00:00	N/A	14.00	09/25/10 21:55	10.38	14.00	
CEF-502-TB-20100915	09/15/10 00:00	09/17/10 08:45	09/25/10 00:00	N/A	14.00	09/25/10 22:25	10.98	14.00	
CEF-502-9S-20100916	09/16/10 11:45	09/17/10 08:45	09/25/10 00:00	N/A	14.00	09/25/10 22:56	9.51	14.00	
CEF-502-DUP-02-20100916	09/16/10 00:00	09/17/10 08:45	09/25/10 00:00	N/A	14.00	09/25/10 23:26	10.02	14.00	
CEF-502-3S-20100916	09/16/10 12:45	09/17/10 08:45	09/27/10 00:00	N/A	14.00	09/27/10 12:06	11.01	14.00	
CEF-502-4S-20100916	09/16/10 13:35	09/17/10 08:45	09/27/10 00:00	N/A	14.00	09/27/10 12:37	11.00	14.00	

PREPARATION BATCH SUMMARY

SW8260B

Laboratory: Empirical Laboratories, LLC SDG: CTOJM09CF_008

Client: Tetra Tech NUS, Inc. (T010) Project: CTO JM09 BP Wells_2010

Batch: 0I25920 Batch Matrix: Water Preparation: 5030B

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
Blank	0I25920-BLK1	09/25/10 00:00	5.00	5.00
LCS	0I25920-BS1	09/25/10 00:00	5.00	5.00
CEF-290A-01S-20100915	0I25920-MS1	09/25/10 00:00	5.00	5.00
CEF-290A-01S-20100915	0I25920-MSD1	09/25/10 00:00	5.00	5.00
CEF-290A-01S-20100915	1009134-01	09/25/10 00:00	5.00	5.00
CEF-290A-DUP-20100915	1009134-02	09/25/10 00:00	5.00	5.00
CEF-502-6S-20100915	1009134-03	09/25/10 00:00	5.00	5.00
CEF-502-07D-20100915	1009134-04	09/25/10 00:00	5.00	5.00
CEF-502-TB-20100915	1009134-05	09/25/10 00:00	5.00	5.00
CEF-502-9S-20100916	1009134-06	09/25/10 00:00	5.00	5.00
CEF-502-DUP-02-20100916	1009134-07	09/25/10 00:00	5.00	5.00

PREPARATION BATCH SUMMARY

SW8260B

Laboratory: Empirical Laboratories, LLC SDG: CTOJM09CF_008

Client: Tetra Tech NUS, Inc. (T010) Project: CTO JM09 BP Wells_2010

Batch: 0I27002 Batch Matrix: Water Preparation: 5030B

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
Blank	0I27002-BLK1	09/27/10 00:00	5.00	5.00
LCS	0I27002-BS1	09/27/10 00:00	5.00	5.00
CEF-502-3S-20100916	0I27002-MS1	09/27/10 00:00	5.00	5.00
CEF-502-3S-20100916	0I27002-MSD1	09/27/10 00:00	5.00	5.00
CEF-502-3S-20100916	1009134-08	09/27/10 00:00	5.00	5.00
CEF-502-4S-20100916	1009134-09	09/27/10 00:00	5.00	5.00

ANALYSIS SEQUENCE SUMMARY
SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)	Project:	CTO JM09 BP Wells_2010
Sequence:	0I26801	Instrument:	MS-VOA3
Calibration:	0268001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	0I26801-TUN1	SEQ-TUN1.D	09/23/10 08:49
Cal Standard	0I26801-CAL1	SEQ-CAL1.D	09/23/10 09:34
Cal Standard	0I26801-CAL2	SEQ-CAL2.D	09/23/10 10:05
Cal Standard	0I26801-CAL3	SEQ-CAL3.D	09/23/10 10:36
Cal Standard	0I26801-CAL4	SEQ-CAL4.D	09/23/10 11:06
Cal Standard	0I26801-CAL6	SEQ-CAL6.D	09/23/10 12:08
Cal Standard	0I26801-CAL7	SEQ-CAL7.D	09/23/10 12:39
Cal Standard	0I26801-CAL8	SEQ-CAL8.D	09/23/10 13:10
Cal Standard	0I26801-CAL9	SEQ-CAL9.D	09/23/10 13:40
Initial Cal Check	0I26801-ICV1	SEQ-ICV1.D	09/23/10 14:11

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)	Project:	CTO JM09 BP Wells_2010
Lab File ID:	SEQ-TUN1.D	Injection Date:	09/23/10
Instrument ID:	MS-VOA3	Injection Time:	08:49
Sequence:	0I26801	Lab Sample ID:	0I26801-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15 - 40% of 95	15.7	PASS
75	30 - 60% of 95	46.4	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	7.02	PASS
173	Less than 2% of 174	0	PASS
174	50 - 200% of 95	109	PASS
175	5 - 9% of 174	7.28	PASS
176	95 - 101% of 174	99.4	PASS
177	5 - 9% of 176	6.82	PASS

INITIAL CALIBRATION CHECK

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)	Project:	CTO JM09 BP Wells_2010
Instrument ID:	MS-VOA3	Calibration:	0268001
Lab File ID:	SEQ-ICV1.D	Calibration Date:	09/23/10 06:31
Sequence:	0I26801	Injection Date:	09/23/10
Lab Sample ID:	0I26801-ICV1	Injection Time:	14:11

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
Benzene	A	100.0	95.99	0.777743	0.7465904		-4.0	20
Ethylbenzene	Q	100.0	99.44	2.401782	2.070524		-0.6	20
Isopropylbenzene	A	100.0	87.24	2.155401	1.880459		-12.8	20
Toluene	A	100.0	91.80	1.241631	1.139788		-8.2	20
1,3,5-Trimethylbenzene	A	100.0	92.13	1.502416	1.38421		-7.9	20
1,2,4-Trimethylbenzene	A	100.0	92.22	1.552578	1.431838		-7.8	20
Xylenes (total)	Q	300.0	283.2	2.07955	1.650208		-5.6	20
Bromofluorobenzene	A	30.00	29.18	1.006847	0.9792466		-2.7	20
Dibromofluoromethane	A	30.00	29.85	0.3013951	0.2998407		-0.5	20
1,2-Dichloroethane-d4	A	30.00	30.90	5.822045E-02	5.996842E-02		3.0	20
Toluene-d8	A	30.00	29.32	2.167989	2.119043		-2.3	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

ANALYSIS SEQUENCE SUMMARY
SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)	Project:	CTO JM09 BP Wells_2010
Sequence:	0I27008	Instrument:	MS-VOA3
Calibration:	0268001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	0I27008-TUN1	SEQ-TUN1.D	09/25/10 12:33
Calibration Check	0I27008-CCV1	SEQ-CCV1.D	09/25/10 13:04
LCS	0I25920-BS1	V3LCS01.D	09/25/10 13:47
Blank	0I25920-BLK1	V3BLK01.D	09/25/10 15:17
CEF-290A-01S-20100915	1009134-01	0913401.D	09/25/10 20:23
CEF-290A-DUP-20100915	1009134-02	0913402.D	09/25/10 20:54
CEF-502-6S-20100915	1009134-03	0913403.D	09/25/10 21:24
CEF-502-07D-20100915	1009134-04	0913404.D	09/25/10 21:55
CEF-502-TB-20100915	1009134-05	0913405.D	09/25/10 22:25
CEF-502-9S-20100916	1009134-06	0913406.D	09/25/10 22:56
CEF-502-DUP-02-20100916	1009134-07	0913407.D	09/25/10 23:26
CEF-290A-01S-20100915	0I25920-MS1	0913401M.D	09/25/10 23:57
CEF-290A-01S-20100915	0I25920-MSD1	0913401S.D	09/26/10 00:27

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)	Project:	CTO JM09 BP Wells_2010
Lab File ID:	SEQ-TUN1.D	Injection Date:	09/25/10
Instrument ID:	MS-VOA3	Injection Time:	12:33
Sequence:	0I27008	Lab Sample ID:	0I27008-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15 - 40% of 95	17.8	PASS
75	30 - 60% of 95	55.7	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	7.38	PASS
173	Less than 2% of 174	0	PASS
174	50 - 200% of 95	120	PASS
175	5 - 9% of 174	7.64	PASS
176	95 - 101% of 174	97.3	PASS
177	5 - 9% of 176	5.64	PASS

CONTINUING CALIBRATION CHECK

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)	Project:	CTO JM09 BP Wells_2010
Instrument ID:	MS-VOA3	Calibration:	0268001
Lab File ID:	SEQ-CCV1.D	Calibration Date:	09/23/10 06:31
Sequence:	0I27008	Injection Date:	09/25/10
Lab Sample ID:	0I27008-CCV1	Injection Time:	13:04

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Benzene	A	100.0	93.57	0.777743	0.7277682		-6.4	20
Ethylbenzene	Q	100.0	100.6	2.401782	2.087921		0.6	20
Isopropylbenzene	A	100.0	92.28	2.155401	1.989022		-7.7	20
Toluene	A	100.0	83.92	1.241631	1.042048		-16.1	20
1,3,5-Trimethylbenzene	A	100.0	92.92	1.502416	1.396069		-7.1	20
1,2,4-Trimethylbenzene	A	100.0	95.54	1.552578	1.483322		-4.5	20
Xylenes (total)	Q	300.0	304.6	2.07955	1.750913		1.5	20
Bromofluorobenzene	A	30.00	31.08	1.006847	1.043097		3.6	20
Dibromofluoromethane	A	30.00	31.63	0.3013951	0.3178094		5.4	20
1,2-Dichloroethane-d4	A	30.00	28.15	5.822045E-02	0.0546318		-6.2	20
Toluene-d8	A	30.00	26.90	2.167989	1.944352		-10.3	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC SDG: CTOJM09CF_008

Client: Tetra Tech NUS, Inc. (T010) Project: CTO JM09 BP Wells_2010

Matrix: Laboratory ID: 0I25920-BLK1 File ID: V3BLK01.D

Sampled: Prepared: Analyzed: 09/25/10 15:17

Solids: Preparation: 5030B Dilution:

Batch: 0I25920 Sequence: 0I27008 Calibration: 0268001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		0.300	0.500	1.00	U
100-41-4	Ethylbenzene		0.300	0.500	1.00	U
98-82-8	Isopropylbenzene		0.300	0.500	1.00	U
108-88-3	Toluene		0.300	0.500	1.00	U
108-67-8	1,3,5-Trimethylbenzene		0.300	0.500	1.00	U
95-63-6	1,2,4-Trimethylbenzene		0.300	0.500	1.00	U
1330-20-7	Xylenes (total)		0.300	1.50	3.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	31.49	105	75 - 120	
Dibromofluoromethane	30.00	33.09	110	85 - 115	
1,2-Dichloroethane-d4	30.00	30.05	100	70 - 120	
Toluene-d8	30.00	30.03	100	85 - 120	

ANALYSIS SEQUENCE SUMMARY
SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)	Project:	CTO JM09 BP Wells_2010
Sequence:	0I27013	Instrument:	MS-VOA3
Calibration:	0268001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	0I27013-TUN1	SEQ-TUN1.D	09/27/10 06:01
Calibration Check	0I27013-CCV1	SEQ-CCV1.D	09/27/10 06:32
LCS	0I27002-BS1	V3LCS01.D	09/27/10 07:03
Blank	0I27002-BLK1	V3BLK01.D	09/27/10 08:32
CEF-502-3S-20100916	1009134-08	0913408.D	09/27/10 12:06
CEF-502-4S-20100916	1009134-09	0913409.D	09/27/10 12:37
CEF-502-3S-20100916	0I27002-MS1	0913408M.D	09/27/10 16:11
CEF-502-3S-20100916	0I27002-MSD1	0913408S.D	09/27/10 16:42

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)	Project:	CTO JM09 BP Wells_2010
Lab File ID:	SEQ-TUN1.D	Injection Date:	09/27/10
Instrument ID:	MS-VOA3	Injection Time:	06:01
Sequence:	0I27013	Lab Sample ID:	0I27013-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15 - 40% of 95	19.6	PASS
75	30 - 60% of 95	56.2	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	5.83	PASS
173	Less than 2% of 174	0.55	PASS
174	50 - 200% of 95	81.2	PASS
175	5 - 9% of 174	8.81	PASS
176	95 - 101% of 174	99.9	PASS
177	5 - 9% of 176	7.89	PASS

CONTINUING CALIBRATION CHECK

SW8260B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)	Project:	CTO JM09 BP Wells_2010
Instrument ID:	MS-VOA3	Calibration:	0268001
Lab File ID:	SEQ-CCV1.D	Calibration Date:	09/23/10 06:31
Sequence:	0I27013	Injection Date:	09/27/10
Lab Sample ID:	0I27013-CCV1	Injection Time:	06:32

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Benzene	A	100.0	94.72	0.777743	0.7366512		-5.3	20
Ethylbenzene	Q	100.0	96.53	2.401782	2.025081		-3.5	20
Isopropylbenzene	A	100.0	90.30	2.155401	1.946379		-9.7	20
Toluene	A	100.0	80.57	1.241631	1.000422		-19.4	20
1,3,5-Trimethylbenzene	A	100.0	94.45	1.502416	1.418994		-5.6	20
1,2,4-Trimethylbenzene	A	100.0	96.45	1.552578	1.497512		-3.5	20
Xylenes (total)	Q	300.0	290.6	2.07955	1.685648		-3.1	20
Bromofluorobenzene	A	30.00	30.02	1.006847	1.007453		0.06	20
Dibromofluoromethane	A	30.00	32.18	0.3013951	0.323353		7.3	20
1,2-Dichloroethane-d4	A	30.00	28.45	5.822045E-02	5.521963E-02		-5.2	20
Toluene-d8	A	30.00	26.26	2.167989	1.897458		-12.5	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

ANALYSIS DATA SHEET

Blank

Laboratory:	Empirical Laboratories, LLC			SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)			Project:	CTO JM09 BP Wells_2010
Matrix:		Laboratory ID:	0I27002-BLK1	File ID:	V3BLK01.D
Sampled:		Prepared:		Analyzed:	09/27/10 08:32
Solids:		Preparation:	5030B	Dilution:	

Batch: 0I27002 Sequence: 0I27013 Calibration: 0268001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
71-43-2	Benzene		0.300	0.500	1.00	U
100-41-4	Ethylbenzene		0.300	0.500	1.00	U
98-82-8	Isopropylbenzene		0.300	0.500	1.00	U
108-88-3	Toluene		0.300	0.500	1.00	U
108-67-8	1,3,5-Trimethylbenzene		0.300	0.500	1.00	U
95-63-6	1,2,4-Trimethylbenzene		0.300	0.500	1.00	U
1330-20-7	Xylenes (total)		0.300	1.50	3.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	30.71	102	75 - 120	
Dibromofluoromethane	30.00	32.46	108	85 - 115	
1,2-Dichloroethane-d4	30.00	30.44	101	70 - 120	
Toluene-d8	30.00	28.09	93.6	85 - 120	

HOLDING TIME SUMMARY
SW8270C

Laboratory: Empirical Laboratories, LLC SDG: CTOJM09CF_008

Client: Tetra Tech NUS, Inc. (T010) Project: CTO JM09 BP Wells_2010

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
CEF-290A-01S-20100915	09/15/10 10:33	09/17/10 08:45	09/20/10 10:45	5.05	7.00	09/24/10 14:57	4.18	40.00	
CEF-290A-DUP-20100915	09/15/10 00:00	09/17/10 08:45	09/20/10 10:45	5.49	7.00	09/24/10 15:26	4.20	40.00	
CEF-502-6S-20100915	09/15/10 13:23	09/17/10 08:45	09/20/10 10:45	4.93	7.00	09/24/10 15:55	4.22	40.00	
CEF-502-07D-20100915	09/15/10 13:49	09/17/10 08:45	09/20/10 10:45	4.91	7.00	09/24/10 16:23	4.23	40.00	
CEF-502-9S-20100916	09/16/10 11:45	09/17/10 08:45	09/20/10 10:45	4.00	7.00	09/24/10 16:52	4.25	40.00	
CEF-502-DUP-02-20100916	09/16/10 00:00	09/17/10 08:45	09/20/10 10:45	4.49	7.00	09/24/10 17:20	4.27	40.00	
CEF-502-3S-20100916	09/16/10 12:45	09/17/10 08:45	09/20/10 10:45	3.96	7.00	09/24/10 17:49	4.29	40.00	
CEF-502-4S-20100916	09/16/10 13:35	09/17/10 08:45	09/20/10 10:45	3.92	7.00	09/24/10 18:17	4.31	40.00	

PREPARATION BATCH SUMMARY

SW8270C

Laboratory: Empirical Laboratories, LLC SDG: CTOJM09CF_008

Client: Tetra Tech NUS, Inc. (T010) Project: CTO JM09 BP Wells_2010

Batch: 0I20006 Batch Matrix: Water Preparation: EXT_3510

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
Blank	0I20006-BLK1	09/20/10 10:45	1,000.00	1.00
LCS	0I20006-BS1	09/20/10 10:45	1,000.00	1.00
CEF-290A-01S-20100915	0I20006-MS1	09/20/10 10:45	1,070.00	1.00
CEF-502-3S-20100916	0I20006-MS2	09/20/10 10:45	1,080.00	1.00
CEF-290A-01S-20100915	0I20006-MSD1	09/20/10 10:45	1,070.00	1.00
CEF-502-3S-20100916	0I20006-MSD2	09/20/10 10:45	1,080.00	1.00
CEF-290A-01S-20100915	1009134-01	09/20/10 10:45	1,070.00	1.00
CEF-290A-DUP-20100915	1009134-02	09/20/10 10:45	1,060.00	1.00
CEF-502-6S-20100915	1009134-03	09/20/10 10:45	1,080.00	1.00
CEF-502-07D-20100915	1009134-04	09/20/10 10:45	1,070.00	1.00
CEF-502-9S-20100916	1009134-06	09/20/10 10:45	1,080.00	1.00
CEF-502-DUP-02-20100916	1009134-07	09/20/10 10:45	1,070.00	1.00
CEF-502-3S-20100916	1009134-08	09/20/10 10:45	1,080.00	1.00
CEF-502-4S-20100916	1009134-09	09/20/10 10:45	1,070.00	1.00

ANALYSIS SEQUENCE SUMMARY
SW8270C

Laboratory:	Empirical Laboratories, LLC	SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)	Project:	CTO JM09 BP Wells_2010
Sequence:	0H23613	Instrument:	MS-BNA4
Calibration:	0237003		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	0H23613-TUN1	SEQ-TUN1.D	08/23/10 10:58
Cal Standard	0H23613-CAL1	SEQ-CAL1.D	08/23/10 11:18
Cal Standard	0H23613-CAL2	SEQ-CAL2.D	08/23/10 11:46
Cal Standard	0H23613-CAL3	SEQ-CAL3.D	08/23/10 12:14
Cal Standard	0H23613-CAL4	SEQ-CAL4.D	08/23/10 12:43
Cal Standard	0H23613-CAL5	SEQ-CAL5.D	08/23/10 13:12
Cal Standard	0H23613-CAL6	SEQ-CAL6.D	08/23/10 13:41
Cal Standard	0H23613-CAL7	SEQ-CAL7.D	08/23/10 14:09
Cal Standard	0H23613-CAL8	SEQ-CAL8.D	08/23/10 14:38
Cal Standard	0H23613-CAL9	SEQ-CAL9.D	08/23/10 15:07
Cal Standard	0H23613-CALA	SEQ-CALA.D	08/23/10 15:35
Cal Standard	0H23613-CALB	SEQ-CALB.D	08/23/10 16:04
Initial Cal Check	0H23613-ICV1	SEQ-ICV1.D	08/23/10 16:33

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW8270C

Laboratory:	Empirical Laboratories, LLC	SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)	Project:	CTO JM09 BP Wells_2010
Lab File ID:	SEQ-TUN1.D	Injection Date:	08/23/10
Instrument ID:	MS-BNA4	Injection Time:	10:58
Sequence:	0H23613	Lab Sample ID:	0H23613-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	30 - 60% of 198	37.1	PASS
68	Less than 2% of 69	1.35	PASS
69	Less than 200% of 198	35.2	PASS
70	Less than 2% of 69	0.535	PASS
127	40 - 60% of 198	44.6	PASS
197	Less than 1% of 198	0.57	PASS
198	Base peak, 100% relative abundance	100	PASS
199	5 - 9% of 198	6.65	PASS
275	10 - 30% of 198	29.4	PASS
365	1 - 200% of 198	4.31	PASS
441	0.001 - 100% of 443	81.1	PASS
442	40 - 200% of 198	171	PASS
443	17 - 23% of 442	19.6	PASS

INITIAL CALIBRATION CHECK

SW8270C

Laboratory:	Empirical Laboratories, LLC	SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)	Project:	CTO JM09 BP Wells_2010
Instrument ID:	MS-BNA4	Calibration:	0237003
Lab File ID:	SEQ-ICV1.D	Calibration Date:	08/23/10 14:19
Sequence:	0H23613	Injection Date:	08/23/10
Lab Sample ID:	0H23613-ICV1	Injection Time:	16:33

		CONC. (ug/mL)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
Acenaphthene	A	5.000	5.459	0.8490211	0.9269866		9.2	20
Acenaphthylene	A	5.000	5.703	1.256297	1.432929		14.1	20
Anthracene	A	5.000	5.160	1.162297	1.199487		3.2	20
Benzo(a)anthracene	A	5.000	5.178	1.05022	1.087508		3.6	20
Benzo(a)pyrene	A	5.000	5.685	1.281052	1.456646		13.7	20
Benzo(b)fluoranthene	A	5.000	5.211	1.518281	1.582416		4.2	20
Benzo(g,h,i)perylene	A	5.000	5.197	1.255234	1.304654		3.9	20
Benzo(k)fluoranthene	A	5.000	5.510	1.472463	1.622768		10.2	20
Chrysene	A	5.000	5.161	1.036307	1.069754		3.2	20
Dibenz(a,h)anthracene	A	5.000	5.628	1.117366	1.257663		12.6	20
Fluoranthene	A	5.000	5.209	1.238826	1.290573		4.2	20
Fluorene	A	5.000	5.488	0.8096793	0.8887667		9.8	20
Indeno(1,2,3-cd)pyrene	A	5.000	5.500	1.182429	1.300687		10.0	20
1-Methylnaphthalene	A	5.000	5.971	0.7624406	0.9105566		19.4	20
2-Methylnaphthalene	A	5.000	5.658	0.8439543	0.9550044		13.2	20
Naphthalene	A	5.000	5.701	1.34026	1.528177		14.0	20
Phenanthrene	A	5.000	5.284	1.181841	1.249062		5.7	20
Pyrene	A	5.000	5.200	1.285122	1.336607		4.0	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

ANALYSIS SEQUENCE SUMMARY

SW8270C

Laboratory:	Empirical Laboratories, LLC	SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)	Project:	CTO JM09 BP Wells_2010
Sequence:	0I26707	Instrument:	MS-BNA4
Calibration:	0237003		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	0I26707-TUN1	SEQ-TUN1.D	09/24/10 09:36
Calibration Check	0I26707-CCV1	SEQ-CCV1.D	09/24/10 09:55
LCS	0I20006-BS1	I20006L1.D	09/24/10 14:00
Blank	0I20006-BLK1	I20006B1.D	09/24/10 14:29
CEF-290A-01S-20100915	1009134-01	0913401.D	09/24/10 14:57
CEF-290A-DUP-20100915	1009134-02	0913402.D	09/24/10 15:26
CEF-502-6S-20100915	1009134-03	0913403.D	09/24/10 15:55
CEF-502-07D-20100915	1009134-04	0913404.D	09/24/10 16:23
CEF-502-9S-20100916	1009134-06	0913406.D	09/24/10 16:52
CEF-502-DUP-02-20100916	1009134-07	0913407.D	09/24/10 17:20
CEF-502-3S-20100916	1009134-08	0913408.D	09/24/10 17:49
CEF-502-4S-20100916	1009134-09	0913409.D	09/24/10 18:17
CEF-290A-01S-20100915	0I20006-MS1	0913401M.D	09/24/10 18:45
CEF-290A-01S-20100915	0I20006-MSD1	0913401S.D	09/24/10 19:13
CEF-502-3S-20100916	0I20006-MS2	0913408M.D	09/24/10 19:40
CEF-502-3S-20100916	0I20006-MSD2	0913408S.D	09/24/10 20:08

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW8270C

Laboratory:	Empirical Laboratories, LLC	SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)	Project:	CTO JM09 BP Wells_2010
Lab File ID:	SEQ-TUN1.D	Injection Date:	09/24/10
Instrument ID:	MS-BNA4	Injection Time:	09:36
Sequence:	0I26707	Lab Sample ID:	0I26707-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	30 - 60% of 198	58.7	PASS
68	Less than 2% of 69	1.54	PASS
69	Less than 200% of 198	56.4	PASS
70	Less than 2% of 69	0.401	PASS
127	40 - 60% of 198	57	PASS
197	Less than 1% of 198	0.707	PASS
198	Base peak, 100% relative abundance	100	PASS
199	5 - 9% of 198	7.01	PASS
275	10 - 30% of 198	23.4	PASS
365	1 - 200% of 198	2.72	PASS
441	0.001 - 100% of 443	79.7	PASS
442	40 - 200% of 198	90.8	PASS
443	17 - 23% of 442	20	PASS

CONTINUING CALIBRATION CHECK

SW8270C

Laboratory:	Empirical Laboratories, LLC	SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)	Project:	CTO JM09 BP Wells_2010
Instrument ID:	MS-BNA4	Calibration:	0237003
Lab File ID:	SEQ-CCV1.D	Calibration Date:	08/23/10 14:19
Sequence:	0I26707	Injection Date:	09/24/10
Lab Sample ID:	0I26707-CCV1	Injection Time:	09:55

		CONC. (ug/mL)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Acenaphthene	A	5.000	4.446	0.8490211	0.7548814		-11.1	20
Acenaphthylene	A	5.000	4.416	1.256297	1.10953		-11.7	20
Anthracene	A	5.000	4.840	1.162297	1.125216		-3.2	20
Benzo(a)anthracene	A	5.000	4.862	1.05022	1.021165		-2.8	20
Benzo(a)pyrene	A	5.000	4.895	1.281052	1.254239		-2.1	20
Benzo(b)fluoranthene	A	5.000	4.915	1.518281	1.492521		-1.7	20
Benzo(g,h,i)perylene	A	5.000	4.545	1.255234	1.140965		-9.1	20
Benzo(k)fluoranthene	A	5.000	4.913	1.472463	1.446764		-1.7	20
Chrysene	A	5.000	5.063	1.036307	1.049442		1.3	20
Dibenz(a,h)anthracene	A	5.000	4.817	1.117366	1.076457		-3.7	20
Fluoranthene	A	5.000	4.973	1.238826	1.232085		-0.5	20
Fluorene	A	5.000	4.900	0.8096793	0.7934381		-2.0	20
Indeno(1,2,3-cd)pyrene	A	5.000	4.604	1.182429	1.088711		-7.9	20
1-Methylnaphthalene	A	5.000	4.501	0.7624406	0.6863228		-10.0	20
2-Methylnaphthalene	A	5.000	4.608	0.8439543	0.7778331		-7.8	20
Naphthalene	A	5.000	4.405	1.34026	1.180845		-11.9	20
Phenanthrene	A	5.000	4.832	1.181841	1.142114		-3.4	20
Pyrene	A	5.000	4.984	1.285122	1.281009		-0.3	20
2-Fluorobiphenyl	A	5.000	4.283	0.9978073	0.8546515		-14.3	20
Terphenyl-d14	A	5.000	5.143	0.9438304	0.9708986		2.9	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

ANALYSIS DATA SHEET

Blank

Laboratory:	Empirical Laboratories, LLC		SDG:	CTOJM09CF_008	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	CTO JM09 BP Wells_2010	
Matrix:		Laboratory ID:	0I20006-BLK1	File ID:	I20006B1.D
Sampled:		Prepared:		Analyzed:	09/24/10 14:29
Solids:		Preparation:	EXT_3510	Dilution:	

Batch: 0I20006 Sequence: 0I26707 Calibration: 0237003 Instrument: MS-BNA4

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
83-32-9	Acenaphthene		0.0200	0.0400	0.100	U
208-96-8	Acenaphthylene		0.0200	0.0400	0.100	U
120-12-7	Anthracene		0.0200	0.0400	0.100	U
56-55-3	Benzo(a)anthracene		0.0200	0.0400	0.100	U
50-32-8	Benzo(a)pyrene		0.0200	0.0400	0.100	U
205-99-2	Benzo(b)fluoranthene		0.0200	0.0400	0.100	U
191-24-2	Benzo(g,h,i)perylene		0.0200	0.0400	0.100	U
207-08-9	Benzo(k)fluoranthene		0.0200	0.0400	0.100	U
218-01-9	Chrysene		0.0200	0.0400	0.100	U
53-70-3	Dibenz(a,h)anthracene		0.0200	0.0400	0.100	U
206-44-0	Fluoranthene		0.0200	0.0400	0.100	U
86-73-7	Fluorene		0.0200	0.0400	0.100	U
193-39-5	Indeno(1,2,3-cd)pyrene		0.0200	0.0400	0.100	U
90-12-0	1-Methylnaphthalene		0.0200	0.0400	0.100	U
91-57-6	2-Methylnaphthalene		0.0200	0.0400	0.100	U
91-20-3	Naphthalene		0.0200	0.0400	0.100	U
85-01-8	Phenanthrene		0.0200	0.0400	0.100	U
129-00-0	Pyrene		0.0200	0.0400	0.100	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	50.00	32.00	64.0	34 - 167	
Terphenyl-d14	50.00	34.47	68.9	34 - 167	

HOLDING TIME SUMMARY
FLPRO

Laboratory: Empirical Laboratories, LLC SDG: CTOJM09CF_008

Client: Tetra Tech NUS, Inc. (T010) Project: CTO JM09 BP Wells_2010

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
CEF-290A-01S-20100915	09/15/10 10:33	09/17/10 08:45	09/20/10 11:47	5.09	7.00	09/22/10 16:10	2.18	40.00	
CEF-290A-DUP-20100915	09/15/10 00:00	09/17/10 08:45	09/20/10 11:47	5.53	7.00	09/22/10 17:54	2.25	40.00	
CEF-502-6S-20100915	09/15/10 13:23	09/17/10 08:45	09/20/10 11:47	4.98	7.00	09/22/10 18:28	2.28	40.00	
CEF-502-07D-20100915	09/15/10 13:49	09/17/10 08:45	09/20/10 11:47	4.96	7.00	09/22/10 19:02	2.30	40.00	
CEF-502-9S-20100916	09/16/10 11:45	09/17/10 08:45	09/20/10 11:47	4.04	7.00	09/22/10 19:37	2.33	40.00	
CEF-502-DUP-02-20100916	09/16/10 00:00	09/17/10 08:45	09/20/10 11:47	4.53	7.00	09/22/10 20:10	2.35	40.00	
CEF-502-3S-20100916	09/16/10 12:45	09/17/10 08:45	09/20/10 11:47	4.00	7.00	09/22/10 20:44	2.37	40.00	
CEF-502-4S-20100916	09/16/10 13:35	09/17/10 08:45	09/20/10 11:47	3.97	7.00	09/22/10 22:26	2.44	40.00	

PREPARATION BATCH SUMMARY

FLPRO

Laboratory: Empirical Laboratories, LLC SDG: CTOJM09CF_008

Client: Tetra Tech NUS, Inc. (T010) Project: CTO JM09 BP Wells_2010

Batch: 0I20004 Batch Matrix: Water Preparation: EXT_3510

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
Blank	0I20004-BLK1	09/20/10 11:47	1,000.00	2.00
LCS	0I20004-BS1	09/20/10 11:47	1,000.00	2.00
CEF-290A-01S-20100915	0I20004-MS1	09/20/10 11:47	1,070.00	2.00
CEF-502-3S-20100916	0I20004-MS2	09/20/10 11:47	1,080.00	2.00
CEF-290A-01S-20100915	0I20004-MSD1	09/20/10 11:47	1,080.00	2.00
CEF-502-3S-20100916	0I20004-MSD2	09/20/10 11:47	1,080.00	2.00
CEF-290A-01S-20100915	1009134-01	09/20/10 11:47	1,070.00	2.00
CEF-290A-DUP-20100915	1009134-02	09/20/10 11:47	1,080.00	2.00
CEF-502-6S-20100915	1009134-03	09/20/10 11:47	1,080.00	2.00
CEF-502-07D-20100915	1009134-04	09/20/10 11:47	1,080.00	2.00
CEF-502-9S-20100916	1009134-06	09/20/10 11:47	1,080.00	2.00
CEF-502-DUP-02-20100916	1009134-07	09/20/10 11:47	1,080.00	2.00
CEF-502-3S-20100916	1009134-08	09/20/10 11:47	1,080.00	2.00
CEF-502-4S-20100916	1009134-09	09/20/10 11:47	1,070.00	2.00

ANALYSIS SEQUENCE SUMMARY
FLPRO

Laboratory:	Empirical Laboratories, LLC	SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)	Project:	CTO JM09 BP Wells_2010
Sequence:	0I24408	Instrument:	GL-GCFID
Calibration:	0244001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	0I24408-CAL6	002B0201.D	08/31/10 10:50
Cal Standard	0I24408-CAL5	003B0301.D	08/31/10 11:25
Cal Standard	0I24408-CAL4	004B0401.D	08/31/10 11:59
Cal Standard	0I24408-CAL3	005B0501.D	08/31/10 12:34
Cal Standard	0I24408-CAL2	006B0601.D	08/31/10 13:08
Cal Standard	0I24408-CAL1	007B0701.D	08/31/10 13:43
Initial Cal Check	0I24408-ICV1	008B0901.D	08/31/10 14:56

INITIAL CALIBRATION STANDARDS

FLPRO

Laboratory:	Empirical Laboratories, LLC	SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)	Project:	CTO JM09 BP Wells_2010
Sequence:	0I24408	Instrument:	GL-GCFID
Calibration:	0244001		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
10H0857	Florida pro ICAL 85ppm	0I24408-CAL6	002B0201.D	08/31/10 10:50
10H0856	Florida pro ICAL 850ppm	0I24408-CAL5	003B0301.D	08/31/10 11:25
10H0855	Florida pro ICAL 2550ppm	0I24408-CAL4	004B0401.D	08/31/10 11:59
10H0854	Florida pro ICAL 4250ppm	0I24408-CAL3	005B0501.D	08/31/10 12:34
10H0853	Florida pro ICAL 5950ppm	0I24408-CAL2	006B0601.D	08/31/10 13:08
10H0852	Florida pro ICAL 8500ppm	0I24408-CAL1	007B0701.D	08/31/10 13:43

INITIAL CALIBRATION CHECK

FLPRO

Laboratory:	Empirical Laboratories, LLC	SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)	Project:	CTO JM09 BP Wells_2010
Instrument ID:	GL-GCFID	Calibration:	0244001
Lab File ID:	008B0901.D	Calibration Date:	08/31/10 00:00
Sequence:	0I24408	Injection Date:	08/31/10
Lab Sample ID:	0I24408-ICV1	Injection Time:	14:56

		CONC. (mg/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
Petroleum Range Organics	A	4000	3677	1345.229	1236.544		-8.1	25

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

ANALYSIS SEQUENCE SUMMARY
FLPRO

Laboratory:	Empirical Laboratories, LLC	SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)	Project:	CTO JM09 BP Wells_2010
Sequence:	0I26608	Instrument:	GL-GCFID
Calibration:	0244001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	0I26608-CCV1	007B0701.D	09/22/10 14:20
Blank	0I20004-BLK1	008B0801.D	09/22/10 15:01
LCS	0I20004-BS1	009B0901.D	09/22/10 15:36
CEF-290A-01S-20100915	1009134-01	010B1001.D	09/22/10 16:10
CEF-290A-01S-20100915	0I20004-MS1	011B1101.D	09/22/10 16:45
CEF-290A-01S-20100915	0I20004-MSD1	012B1201.D	09/22/10 17:20
CEF-290A-DUP-20100915	1009134-02	013B1301.D	09/22/10 17:54
CEF-502-6S-20100915	1009134-03	014B1401.D	09/22/10 18:28
CEF-502-07D-20100915	1009134-04	015B1501.D	09/22/10 19:02
CEF-502-9S-20100916	1009134-06	016B1601.D	09/22/10 19:37
CEF-502-DUP-02-20100916	1009134-07	017B1701.D	09/22/10 20:10
CEF-502-3S-20100916	1009134-08	018B1801.D	09/22/10 20:44
CEF-502-3S-20100916	0I20004-MS2	019B1901.D	09/22/10 21:18
CEF-502-3S-20100916	0I20004-MSD2	020B2001.D	09/22/10 21:52
CEF-502-4S-20100916	1009134-09	021B2101.D	09/22/10 22:26
Calibration Check	0I26608-CCV2	022B2201.D	09/23/10 09:35

CONTINUING CALIBRATION CHECK

FLPRO

Laboratory:	Empirical Laboratories, LLC	SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)	Project:	CTO JM09 BP Wells_2010
Instrument ID:	GL-GCFID	Calibration:	0244001
Lab File ID:	007B0701.D	Calibration Date:	08/31/10 00:00
Sequence:	0I26608	Injection Date:	09/22/10
Lab Sample ID:	0I26608-CCV1	Injection Time:	14:20

		CONC. (mg/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Petroleum Range Organics	A	4250	4254	1345.229	1346.602		0.1	25
2-Fluorobiphenyl	A	25.00	25.67	1813.167	1861.6		2.7	25
o-Terphenyl	A	25.00	25.70	2199.287	2261.12		2.8	25

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

ANALYSIS DATA SHEET

Blank

Laboratory:	Empirical Laboratories, LLC		SDG:	CTOJM09CF_008	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	CTO JM09 BP Wells_2010	
Matrix:		Laboratory ID:	0I20004-BLK1	File ID:	008B0801.D
Sampled:		Prepared:		Analyzed:	09/22/10 15:01
Solids:		Preparation:	EXT_3510	Dilution:	

Batch: 0I20004 Sequence: 0I26608 Calibration: 0244001 Instrument: GL-GCFID

CAS NO.	COMPOUND	CONC. (mg/L)	DL	LOD	LOQ	Q
	Petroleum Range Organics		0.0850	0.170	0.340	U

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	0.05000	0.04421	88.4	50 - 150	
o-Terphenyl	0.05000	0.04229	84.6	82 - 142	

CONTINUING CALIBRATION CHECK

FLPRO

Laboratory:	Empirical Laboratories, LLC	SDG:	CTOJM09CF_008
Client:	Tetra Tech NUS, Inc. (T010)	Project:	CTO JM09 BP Wells_2010
Instrument ID:	GL-GCFID	Calibration:	0244001
Lab File ID:	022B2201.D	Calibration Date:	08/31/10 00:00
Sequence:	0I26608	Injection Date:	09/23/10
Lab Sample ID:	0I26608-CCV2	Injection Time:	09:35

		CONC. (mg/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Petroleum Range Organics	A	4250	4293	1345.229	1358.767		1.0	25
2-Fluorobiphenyl	A	25.00	25.07	1813.167	1818.56		0.3	25
o-Terphenyl	A	25.00	25.79	2199.287	2268.44		3.1	25

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

METHOD DETECTION AND REPORTING LIMITS

Laboratory: Empirical Laboratories, LLC
SDG: CTOJM09CF_008
Client: Tetra Tech NUS, Inc. (T010)
Project: CTO JM09 BP Wells_2010
Matrix: Water
Instrument: GL-GCFID

Analyte	MDL	MRL	Units	Method
Petroleum Range Organics	0.0850	0.340	mg/L	FLPRO

FIELD DUPLICATE CALCULATIONS SDG: CTOJM09CF_008

PARAMETERS	ORIGINAL SAMPLE	DUPLICATE SAMPLE	RPD
	CEF-290A-01S-20100915	CEF-290A-DUP-20100915	%
ACENAPTHENE	0.0206 J	NON-DETECT	NA
ANTHRACENE	0.0284 J	NON-DETECT	NA
BENZO(A)ANTHRACENE	0.0357 J	NON-DETECT	NA
BENZO(A)PYRENE	0.0316 J	NON-DETECT	NA
BENZO(B)FLUORANTHENE	0.0455 J	NON-DETECT	NA
BENZO(G,H,I)PERYLENE	0.0465 J	NON-DETECT	NA
BENZO(K)FLUORANTHENE	0.0427 J	NON-DETECT	NA
CHRYSENE	0.0425 J	NON-DETECT	NA
DIBENZ(A,H)ANTHRACENE	0.044 J	NON-DETECT	NA
FLUORANTHENE	0.0403	0.0196	69.12
FLUORENE	0.0268 J	NON-DETECT	NA
INDENO(1,2,3-CD)PYRENE	0.0465 J	NON-DETECT	NA
2-METHYLNAPHTHALENE	0.0189 J	NON-DETECT	NA
PHENANTHRENE	0.0454	0.025	57.95
PYRENE	0.0421	0.0193	74.27
	ORIGINAL SAMPLE	DUPLICATE SAMPLE	RPD
	CEF-502-9S-20100916	CEF-502-DUP-01-20100916	%
ETHYLBENZENE	0.787	0.745	5.48
ISOPROPYLBENZENE	0.408	0.376	8.16
1,3,5-TRIMETHYLBENZENE	0.418	0.396	5.41
1,2,4-TRIMETHYLBENZENE	0.44	0.415	5.85
2-METHYLNAPHTHALENE	2.03	1.6	23.69
1-METHYLNAPHTHALENE	1.67	1.25	28.77
NAPHTHALENE	0.879	0.695	23.38
PHENANTHRENE	NON-DETECT	0.459	NA
PETROLEUM RANGE ORGANICS	2.36	2.26	4.33