N60200.AR.004986
NAS CECIL FIELD, FL
5090.3a

"FOURTH QUARTER SECOND YEAR GROUNDWATER MONITORING LETTER REPORT FOR BUILDING 81 TANKS 81 A, B AND C NAS CECIL FIELD FL"
3/12/2008
TETRA TECH NUS INC

Document Tracking Number 08JAX0008

March 12, 2008

Project Number 112G00746

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 0076

Subject: Groundwater Monitoring Report, 4th Quarter, 2nd Year - December 2007
Building 81, Tanks 81 A, B, and C
Naval Air Station Cecil Field
Jacksonville, Florida

Dear Mr. Grabka:

Tetra Tech NUS, Inc. (TtNUS) is pleased to submit this Quarterly Groundwater Monitoring Report for the referenced Contract Task Order for Building 81, Tanks 81 A, B, and C. This Groundwater Monitoring Report was prepared for Naval Facilities Engineering Command Southeast (NAVFAC SE) under the Comprehensive Long-Term Environmental Action Navy (CLEAN) IV Contract Number N62467-04-D-0055.

Quarterly monitoring of groundwater associated with the shallow and intermediate zones of the surficial aquifer is being conducted at the site in general accordance with the revised Natural Attenuation Monitoring Plan (NAMP) submitted to the Florida Department of Environmental Protection (FDEP) on November 21, 2007, based on Chapter 62-770.690, Florida Administrative Code. The parameters of the NAMP were discussed and agreed upon during the September 2007 Base Realignment and Closure (BRAC) Cleanup Team (BCT) meeting and were implemented during this sampling event. This report summarizes the field operations and analytical results for the subject site for the sampling event conducted during the week of December 17, 2007.

FIELD OPERATIONS

Field operations were performed in general accordance with FDEP Standard Operating Procedures (SOPs) under DEP-SOP-001/01 and Tetra Tech NUS SOPs. Groundwater samples were collected from existing wells CEF-081-04I, CEF-081-08SR, CEF-081-09S, CEF-081-14S, CEF-081-15S, CEF-081-16S, CEF-081-17S, CEF-081-18I, CEF-081-19I, CEF-081-21I, and CEF-081-22I from December 17 through 19, 2007. Monitoring well locations are presented on Figure 1. The samples were hand-delivered under chain of custody to Columbia Analytical Services in Jacksonville, Florida, for analysis. The laboratory analyzed the samples for isopropyl benzene using United States Environmental Protection Agency (USEPA) Method SW-846 8260B.

Prior to obtaining groundwater samples, synoptic water levels and total well depths were measured and recorded on a site-specific groundwater measurement sheet. On December 17, 2007, the depth to water ranged from 5.18 feet below top of casing (btoc) (CEF-081-12S) to 8.65 feet btoc (CEF-081-21I). Depth to water measurements, top of casing elevations, and groundwater elevations are presented in Table 1.

RESULTS

The groundwater elevation data and flow direction for the shallow zone are presented on Figure 2. Based on the data, shallow groundwater flow is generally to the north-northwest. The shallow groundwater flow direction is consistent with previous sampling events. Groundwater elevation data and flow direction for the intermediate zone are presented on Figure 3. Based on the data, intermediate groundwater flow shows variable flow components to the northwest, northeast, and southeast. The northern and southeastern flow components estimated during the December 2007 groundwater sampling event are consistent with previous sampling events.

The only constituent of concern (COC) listed in the recently submitted NAMP (see Attachment A) is isopropyl benzene. COC concentrations reported by the laboratory for the groundwater samples collected for this sampling event were compared to FDEP Groundwater Cleanup Target Levels (GCTLs) and Natural Attenuation Default Source Concentrations. The data and standards are presented in Table 2, and the results are presented on Figure 4. The laboratory data (see Attachment B) indicate that isopropyl benzene was detected at 1.6 micrograms per liter (μg/L) in CEF-081-04I and 3.3 μg/L in CEF-081-19I. These concentrations exceed the GCTL of 0.8 μg/L. In other wells, isopropyl benzene was either not detected or was detected at estimated concentrations less than its GCTL.

CONCLUSIONS AND RECOMMENDATIONS

The shallow groundwater flow direction to the north-northwest is consistent with previous sampling events. Intermediate zone groundwater flow showed northern and southeastern flow components during the December 2007 sampling event, which are consistent with other sampling events. However, in September 2007, the intermediate groundwater flow was determined to be to the north and northwest.

December 2007 concentrations of isopropyl benzene in groundwater exceeded its GCTL in only two (CEF-081-04I and CEF-081-19I) of the 11 monitoring wells being sampled under the revised NAMP (Attachment A). Isopropyl benzene concentrations in monitoring wells CEF-081-09S, CEF-081-15S, and CEF-081-18I decreased to less than the GCTL since the last sampling event (September 2007). The isopropyl benzene concentration increased slightly in CEF-081-19I since the last sampling event. The isopropyl benzene concentration in CEF-081-04I decreased slightly since the last sampling event but still exceeds the GCTL.

As identified in the November 2007 NAMP, quarterly groundwater sampling will be conducted for the first 2 years after the new wells were installed (in June 2007) followed by semi-annual sampling for the next 3 years. After 1 year of quarterly groundwater sampling, the sampling program will be evaluated and potentially optimized based on the results obtained. Based on the results of the December 2007 groundwater sampling event (third quarterly event since the new wells were installed and the revised sampling program was established), TtNUS recommends that quarterly sampling continue in accordance with the NAMP. If isopropyl benzene concentrations continue to decrease and/or continue to be less than the GCTL, recommendations for optimization of the current sampling program may be made. The next quarterly sampling event is scheduled for March 2008.

If you have any questions regarding this submittal, please feel free to contact Kara Wimble at (904) 730-4669, extension 214, or via e-mail at Kara.Wimble@tetratech.com.

Sincerely,

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

Kara F. Wimble
Project Scientist

Enclosures (8)

c: B. Nwokike, NAVFAC SE (Electronic only)
S. Naik, CH2M Hill (Electronic only)
M. Perry, TtNUS (unbound)
D. Humbert, TtNUS (letter only)
M. Speranza, TtNUS (letter only)
M. Jonnet, TtNUS (Cecil DMS)
K. Wimble, TtNUS
R. Simcik, TtNUS (Bookcase File)
J. Johnson, TtNUS (Information Repository)
CTO 0076 Project File

CERTIFICATION

The information contained herein is based on the geologic investigation and associated information detailed in the text and appended to this report. 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 Semi-Annual Groundwater Monitoring Report, 1st Semi-Annual, 3rd Year – November 2007 was developed for the North-South Apron Plume at Naval Air Station Cecil Field and should not be construed to apply to any other site.

March 12, 2008
Robert Simcik, P.E.
License Number 61263

ROBERT FRANK SIMCIK
LICENSE
No. 00061263
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

TABLES

Table 1
Groundwater Elevation Data

Groundwater Monitoring Report, 4th Quarter, 2nd Year - December 2007
Building 81, Tanks 81 A, B, and C
Naval Air Station Cecil Field
Jacksonville, Florida

Monitoring Well Identification	Well Depth (feet btoc)	TOC Elevation (feet above msl)	January 11, 2002		May 23, 2002		January 7, 2003	
			Depth to Water (feet	Water-Level Elevation (feet above msl)	Depth to Water (feet	Water-Level Elevation (feet above msl)	Depth to Water (feet	Water-Level Elevation (feet above msl)
CEF-80-3S	15.12	77.68	4.74	72.94	5.22	72.46	5.07	72.61
CEF-80-13S	14.90	78.17	4.96	73.21	5.48	72.69	5.51	72.66
CEF-81-2S	15.00	78.41	NM	NM	6.02	72.39	NM	NM
CEF-81-8SR	12.94	77.61	4.62	72.99	5.06	72.55	5.14	72.47
CEF-81-9S	12.74	77.72	4.73	72.99	5.19	72.53	5.16	72.56
CEF-81-10S	12.99	78.46	5.45	73.01	5.98	72.48	5.68	72.78
CEF-81-11S	12.88	78.47	5.46	73.01	5.97	72.50	5.56	72.91
CEF-81-12S	11.68	77.37	4.37	73.00	4.81	72.56	4.91	72.46
CEF-81-13S	12.14	77.91	4.92	72.99	5.36	72.55	5.27	72.64
CEF-81-14S	13.00	78.30	NI	NI	5.85	72.45	6.13	72.17
CEF-81-1I	29.25	77.73	4.77	72.96	4.77	72.96	5.65	72.08
CEF-P25-1S	12.00	77.57	NM	NM	5.17	72.40	6.00	71.57
CEF-81-2I	30.00	77.42	NI	NI	NI	NI	NI	NI
CEF-81-3I	30.00	77.78	NI	NI	NI	NI	NI	NI
CEF-81-4I	30.00	77.54	NI	NI	NI	NI	NI	NI
CEF-81-5I	30.00	77.84	NI	NI	NI	NI	NI	NI
CEF-81-1D	55.00	77.77	NI	NI	NI	NI	NI	NI
CEF-81-15S	15.00	78.03	NI	NI	NI	NI	NI	NI
CEF-81-16S	15.00	78.53	NI	NI	NI	NI	NI	NI
CEF-81-17S	15.00	78.35	NI	NI	NI	NI	NI	NI
CEF-81-18I	35.00	78.33	NI	NI	NI	NI	NI	NI
CEF-81-19I	35.00	78.15	NI	NI	NI	NI	NI	NI
CEF-81-20I	35.00	77.63	NI	NI	NI	NI	NI	NI
CEF-81-21I	35.00	78.78	NI	NI	NI	NI	NI	NI
CEF-81-22I	35.00	78.35	NI	NI	NI	NI	NI	NI

Table 1
Groundwater Elevation Data

Groundwater Monitoring Report, 4th Quarter, 2nd Year - December 2007
Building 81, Tanks 81 A, B, and C
Naval Air Station Cecil Field
Jacksonville, Florida

Monitoring Well Identification	Well Depth (feet btoc)	TOC Elevation (feet above msl)	February 18, 2005		January 5, 2007		February 5, 2007	
			Depth to Water (feet	Water-Level Elevation (feet above msl)	Depth to Water (feet	Water-Level Elevation (feet above msl)	Depth to Water (feet	Water-Level Elevation (feet above msl)
CEF-80-3S	15.12	77.68	6.61	71.07	NM	NM	NM	NM
CEF-80-13S	14.90	78.17	7.09	71.08	NM	NM	NM	NM
CEF-81-2S	15.00	78.41	7.34	71.07	9.84	68.57	NM	NM
CEF-81-8SR	12.94	77.61	6.57	71.04	8.97	68.64	8.44	69.17
CEF-81-9S	12.74	77.72	6.78	70.94	9.15	68.57	8.70	69.02
CEF-81-10S	12.99	78.46	7.52	70.94	9.83	68.63	NM	NM
CEF-81-11S	12.88	78.47	7.48	70.99	9.81	68.66	NM	NM
CEF-81-12S	11.68	77.37	6.21	71.16	9.65	67.72	6.77	70.60
CEF-81-13S	12.14	77.91	6.91	71.00	7.34	70.57	6.65	71.26
CEF-81-14S	13.00	78.30	7.41	70.89	9.79	68.51	9.44	68.86
CEF-81-1I	29.25	77.73	6.79	70.94	9.19	68.54	8.86	68.87
CEF-P25-1S	12.00	77.57	6.52	71.05	9.03	68.54	8.69	68.88
CEF-81-2I	30.00	77.42	6.54	70.88	8.94	68.48	8.62	68.80
CEF-81-3I	30.00	77.78	6.95	70.83	9.34	68.44	9.05	68.73
CEF-81-4I	30.00	77.54	6.74	70.80	9.09	68.45	8.77	68.77
CEF-81-5I	30.00	77.84	7.01	70.83	9.33	68.51	9.01	68.83
CEF-81-1D	55.00	77.77	6.83	70.94	NM	NM	8.97	68.80
CEF-81-15S	15.00	78.03	NI	NI	9.51	68.52	9.15	68.88
CEF-81-16S	15.00	78.53	NI	NI	10.05	68.48	9.73	68.80
CEF-81-17S	15.00	78.35	NI	NI	9.82	68.53	9.48	68.87
CEF-81-18I	35.00	78.33	NI	NI	9.79	68.54	9.50	68.83
CEF-81-19I	35.00	78.15	NI	NI	9.61	68.54	9.31	68.84
CEF-81-20I	35.00	77.63	NI	NI	9.09	68.54	8.77	68.86
CEF-81-21I	35.00	78.78	NI	NI	NI	NI	NI	NI
CEF-81-22I	35.00	78.35	NI	NI	NI	NI	NI	NI

Table 1
Groundwater Elevation Data

Groundwater Monitoring Report, 4th Quarter, 2nd Year - December 2007
Building 81, Tanks 81 A, B, and C
Naval Air Station Cecil Field
Jacksonville, Florida

Monitoring Well Identification	Well Depth (feet btoc)	TOC Elevation (feet above msl)	June 21, 2007		September 19, 2007		December 17, 2007	
			Depth to Water (feet btoc)	Water-Level Elevation (feet above msl)	Depth to Water (feet btoc)	Water-Level Elevation (feet above msl)	Depth to Water (feet btoc)	Water-Level Elevation (feet above msl)
CEF-80-3S	15.12	77.68	NM	NM	NM	NM	NM	NM
CEF-80-13S	14.90	78.17	NM	NM	NM	NM	NM	NM
CEF-81-2S	15.00	78.41	NM	NM	8.84	69.57	8.1	70.31
CEF-81-8SR	12.94	77.61	8.07	69.54	7.94	69.67	7.12	70.49
CEF-81-9S	12.74	77.72	8.35	69.37	8.15	69.57	7.34	70.38
CEF-81-10S	12.99	78.46	9.32	69.14	8.79	69.67	8.16	70.30
CEF-81-11S	12.88	78.47	NM	NM	8.79	69.68	8.14	70.33
CEF-81-12S	11.68	77.37	6.31	71.06	7.68	69.69	5.18	72.19
CEF-81-13S	12.14	77.91	8.66	69.25	6.19	71.72	5.41	72.50
CEF-81-14S	13.00	78.30	9.12	69.18	8.81	69.49	8.04	70.26
CEF-81-1I	29.25	77.73	8.58	69.15	8.23	69.50	7.52	70.21
CEF-P25-1S	12.00	77.57	NM	NM	8.05	69.52	7.31	70.26
CEF-81-2I	30.00	77.42	8.32	69.10	7.97	69.45	7.28	70.14
CEF-81-3I	30.00	77.78	NM	NM	8.40	69.38	7.64	70.14
CEF-81-4I	30.00	77.54	NM	NM	8.12	69.42	7.41	70.13
CEF-81-5I	30.00	77.84	8.73	69.11	8.37	69.47	7.67	70.17
CEF-81-1D	55.00	77.77	NM	NM	NM	NM	NM	NM
CEF-81-15S	15.00	78.03	NM	NM	8.51	69.52	7.75	70.28
CEF-81-16S	15.00	78.53	9.45	69.08	9.09	69.44	8.34	70.19
CEF-81-17S	15.00	78.35	9.20	69.15	8.87	69.48	8.1	70.25
CEF-81-18I	35.00	78.33	9.20	69.13	8.85	69.48	8.11	70.22
CEF-81-19I	35.00	78.15	9.02	69.13	8.65	69.50	7.98	70.17
CEF-81-20I	35.00	77.63	8.50	69.13	8.11	69.52	7.41	70.22
CEF-81-21I	35.00	78.78	9.73	69.05	9.40	69.38	8.65	70.13
CEF-81-22I	35.00	78.35	9.31	69.04	8.90	69.45	8.28	70.07

NM = Not measured. TOC - Top of casing. msl = Mean sea level. NI = Not installed

btoc = Below top of casing.

Table 2
Groundwater Analytical Data

Quarterly Groundwater Monitoring Report, 4th Quarter, 2nd Year - December 2007
Building 81, Tanks 81 A, B, and C
Naval Air Station Cecil Field
Jacksonville, Florida

Parameter	GCTL	NADSC	CEF-081-											
			01I			04I				08SR				
			02/18/05	02/05/07	06/06/07	02/18/05	09/19/07	12/17/07 Sample	12/17/07 Duplicate	02/18/05	02/05/07	06/07/07	09/20/07	12/19/07
VOCs (µg/L)														
Ethylbenzene	30	300	0.5 U	0.3 U	0.30 U	1.5	NA	NA	NA	0.5 U	0.3 U	0.20 U	NA	NA
Isopropylbenzene	0.8	8	0.69 J	0.36 J	0.10 U	**1.7**	**2.3**	**1.6**	**1.5**	0.5 U	0.1 U	**2.1**	0.21 U	0.093 U
Toluene	40	400	0.5 U	0.2 U	0.20 U	0.50 U	NA	NA	NA	0.5 U	0.2 U	0.29 J	NA	NA
Benzene	1	10	0.5 U	0.2 U	0.20 U	0.50 U	NA	NA	NA	0.5 U	0.2 U	0.20 U	NA	NA
MTBE	20	200	NA	0.2 U	0.20 U	NS	NA	NA	NA	NA	0.2 U	0.20 U	NA	NA
PAHs (µg/L)														
1-Methylnaphthalene	28	280	0.49 U	0.02 U	0.02 U	NS	NA	NA	NA	0.49 U	0.02 U	12.4	NA	NA
2-Methylnaphthalene	28	280	0.49 U	0.02 U	0.02 U	NS	NA	NA	NA	0.49 U	0.02 U	4.58	NA	NA
Acenaphthene	20	200	0.98 U	0.24	0.02 U	1.0 U	NA	NA	NA	0.98 U	0.02 U	0.38	NA	NA
Fluorene	280	2800	0.98 U	0.51	0.05 U	1.1	NA	NA	NA	0.98 U	0.02 U	0.94	NA	NA
Naphthalene	14	140	0.98 U	0.22	0.05 U	2.2	NA	NA	NA	0.98 U	0.02 U	0.95	NA	NA
Phenanthrene	210	2100	0.98 U	0.02 U	0.04 U	1.0 U	NA	NA	NA	0.98 U	0.02 U	0.13	NA	NA
Pyrene	210	2100	0.49 U	0.02 U	0.03 U	0.50 U	NA	NA	NA	0.49 U	0.02 U	0.03 U	NA	NA

Parameter	GCTL	NADSC	CEF-081-											
			09S					13S				14S		
			02/18/05	02/05/07	06/08/07	09/19/07	12/17/07	02/21/05	02/06/07	06/08/07 Sample	06/08/07 Duplicate	02/18/05	02/06/07	06/07/07
VOCs (µg/L)														
Ethylbenzene	30	300	0.6 J	0.3 U	0.30 U	NA	NA	0.5 U	0.3 U	0.30 U	0.30 U	0.5 U	0.3 U	0.30 U
Isopropylbenzene	0.8	8	**2.8**	**2.29**	0.10 U	**1.3**	0.67 J	0.5 U	0.1 U	0.10 U	0.10 U	**3.3**	**0.95 J**	0.21 J
Toluene	40	400	0.5 U	0.2 U	0.25 J	NA	NA	0.5 U	0.24 J	0.20 U	0.52 J	0.5 U	0.2 U	0.22 J
Benzene	1	10	0.5 U	0.2 U	0.20 U	NA	NA	0.5 U	0.2 U	0.20 U	0.20 U	0.5 U	0.2 U	0.20 U
MTBE	20	200	NA	0.2 U	0.20 U	NA	NA	NA	0.2 U	0.20 U	0.20 U	NA	0.2 U	0.20 U
PAHs (µg/L)														
1-Methylnaphthalene	28	280	9.2	0.47	0.02 U	NA	NA	0.48 U	0.02 U	0.02 U	0.02 U	9.9	0.02 U	0.02 U
2-Methylnaphthalene	28	280	5.7	0.07 J	0.02 U	NA	NA	0.48 U	0.02 U	0.02 U	0.02 U	6.2	0.02 U	0.02 U
Acenaphthene	20	200	0.99 U	0.07 J	0.02 U	NA	NA	0.96 U	0.02 U	0.02 U	0.02 U	0.97 U	0.02 U	0.02 U
Fluorene	280	2800	0.99 U	0.1	0.05 U	NA	NA	0.96 U	0.02 U	0.05 U	0.05 U	0.97 U	0.02 U	0.05 U
Naphthalene	14	140	4.2	0.16	0.05 U	NA	NA	0.96 U	0.02 U	0.05 U	0.05 U	7.8	0.16	0.05 U
Phenanthrene	210	2100	0.99 U	0.02 U	0.04 U	NA	NA	0.96 U	0.02 U	0.04 U	0.04 U	0.97 U	0.02 U	0.04 U
Pyrene	210	2100	0.5 U	0.02 U	0.03 U	NA	NA	0.48 U	0.02 U	0.03 U	0.03 U	0.49 U	0.02 U	0.03 U

Table 2
Groundwater Analytical Data

Quarterly Groundwater Monitoring Report, 4th Quarter, 2nd Year - December 2007
Building 81, Tanks 81 A, B, and C
Naval Air Station Cecil Field
Jacksonville, Florida

Parameter	GCTL	NADSC	CEF-081-											
			14S		15S					16S				
			09/20/07	12/18/07	11/21/06	02/06/07	06/07/07	09/19/07	12/18/07	11/21/06	02/06/07	06/07/07	09/20/07	12/18/07
VOCs (µg/L)														
Ethylbenzene	30	300	NA	NA	0.3 U	0.3 U	0.30 U	NA	NA	0.3 U	0.3 U	0.30 U	NA	NA
Isopropylbenzene	0.8	8	0.21 U	0.093 U	0.1 U	0.1 U	1.3	1.0	0.093 U	0.1 U	0.1 U	0.10 U	0.21 U	0.093 U
Toluene	40	400	NA	NA	0.2 U	0.21 J	0.33 J	NA	NA	0.2 U	0.2 U	0.20 U	NA	NA
Benzene	1	10	NA	NA	0.2 U	0.2 U	0.20 U	NA	NA	0.2 U	0.2 U	0.20 U	NA	NA
MTBE	20	200	NA	NA	0.2 U	0.2 U	0.20 U	NA	NA	0.2 U	0.2 U	0.20 U	NA	NA
PAHs (µg/L)														
1-Methylnaphthalene	28	280	NA	NA	0.02 U	0.02 U	0.02 U	NA	NA	0.02 U	0.02 U	0.02 U	NA	NA
2-Methylnaphthalene	28	280	NA	NA	0.02 U	0.02 U	0.02 U	NA	NA	0.02 U	0.02 U	0.02 U	NA	NA
Acenaphthene	20	200	NA	NA	0.02 U	0.02 U	0.02 U	NA	NA	0.02 U	0.02 U	0.02 U	NA	NA
Fluorene	280	2800	NA	NA	0.02 U	0.02 U	0.05 U	NA	NA	0.02 U	0.02 U	0.05 U	NA	NA
Naphthalene	14	140	NA	NA	0.55	0.06 J	0.05 U	NA	NA	0.02 U	0.02 U	0.05 U	NA	NA
Phenanthrene	210	2100	NA	NA	0.02 U	0.02 U	0.04 U	NA	NA	0.02 U	0.02 U	0.04 U	NA	NA
Pyrene	210	2100	NA	NA	0.02 U	0.02 U	0.03 U	NA	NA	0.02 U	0.02 U	0.03 U	NA	NA

Parameter	GCTL	NADSC	CEF-081-											
			16S		17S			18I						19I
			11/21/06	02/06/07	06/07/07	09/20/07	12/18/07	11/22/06		02/05/07		9/20/2007	12/17/2007	11/22/06
								Sample	Duplicate	Sample	Duplicate			
VOCs (µg/L)														
Ethylbenzene	30	300	0.3 U	0.3 U	0.30 U	NA	NA	0.3 U	0.3 U	0.3 U	0.3 U	NA	NA	0.7 J
Isopropylbenzene	0.8	8	0.1 U	0.1 U	0.10 U	0.21 U	0.093 U	1	1.2	1.26	1.19	1.5	0.92 J	2.8
Toluene	40	400	0.2 U	0.2 U	0.20 U	NA	NA	0.5 J	0.2 U	0.23 J	0.2 U	NA	NA	0.2 U
Benzene	1	10	0.2 U	0.2 U	0.20 U	NA	NA	0.2 U	0.5 U	0.2 U	0.20 U	NA	NA	0.2 U
MTBE	20	200	0.2 U	0.2 U	0.20 U	NA	NA	0.2 U	NA	0.2 U	0.20 U	NA	NA	0.2 U
PAHs (µg/L)														
1-Methylnaphthalene	28	280	0.02 U	0.02 U	0.02 U	NA	NA	0.09 J	0.08 J	0.02 U	0.02 U	NA	NA	6.5
2-Methylnaphthalene	28	280	0.02 U	0.02 U	0.02 U	NA	NA	0.02 U	0.02 U	0.02 U	0.02 U	NA	NA	4.31
Acenaphthene	20	200	0.02 U	0.02 U	0.24	NA	NA	0.16	0.18	0.16	0.14	NA	NA	0.28
Fluorene	280	2800	0.02 U	0.02 U	0.43	NA	NA	0.23	0.27	0.23	0.2	NA	NA	0.65
Naphthalene	14	140	0.02 U	0.02 U	0.31	NA	NA	0.26	0.29	0.31	0.2	NA	NA	1.01
Phenanthrene	210	2100	0.02 U	0.02 U	0.04 U	NA	NA	0.02 U	0.02 U	0.02 U	0.02 U	NA	NA	0.1
Pyrene	210	2100	0.02 U	0.02 U	0.03 U	NA	NA	0.02 U	0.02 U	0.06 J	0.02 U	NA	NA	0.02 U

Table 2
Groundwater Analytical Data

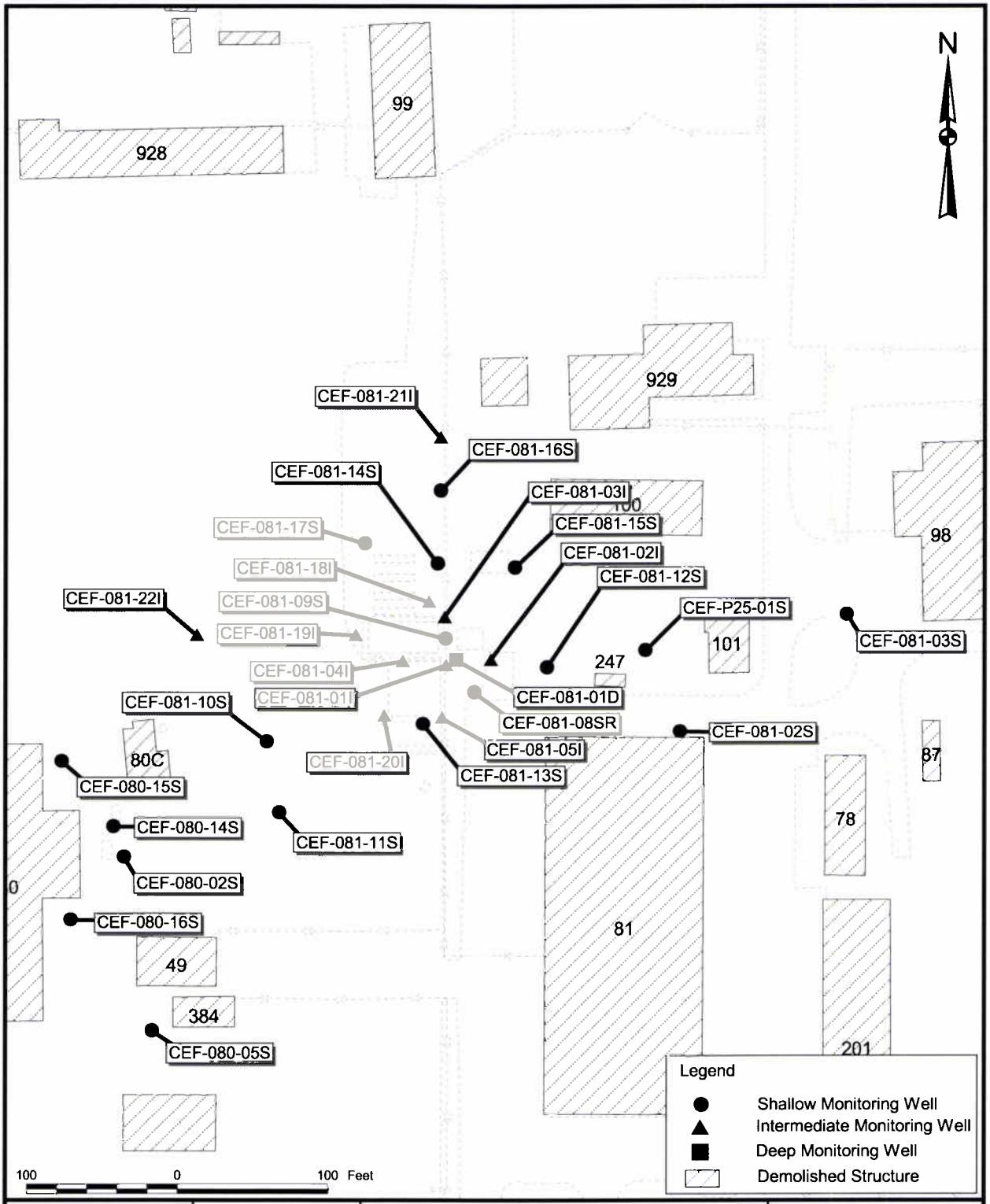
Quarterly Groundwater Monitoring Report, 4th Quarter, 2nd Year - December 2007
Building 81, Tanks 81 A, B, and C
Naval Air Station Cecil Field
Jacksonville, Florida

Parameter	GCTL	NADSC	CEF-081-											
			19I					20I			21I			
			02/06/07	06/08/07	09/20/07		12/17/2007	11/22/06	02/06/07	06/08/07	06/07/07	09/21/07	12/18/2007	09/21/07
					Sample	Duplicate								
VOCs (µg/L)														
Ethylbenzene	30	300	1.18	1.3	NS	NA	NA	0.3 U	0.3 U	0.30 U	0.30 U	NA	NA	NA
Isopropylbenzene	0.8	8	5.32	4.2	2.8	2.8	3.3	0.2 J	0.1 U	0.10 U	0.10 U	0.21 U	0.093 U	0.43 J
Toluene	40	400	0.2 U	0.20 U	NA	NA	NA	0.3 J	0.37 J	0.20 U	0.53 J	NA	NA	NA
Benzene	1	10	0.20 U	0.2 U	NA	NA	NA	0.2 U	0.20 U	0.2 U	0.20 U	NA	NA	NA
MTBE	20	200	0.20 U	0.2 U	NA	NA	NA	0.2 U	0.20 U	0.2 U	0.20 U	NA	NA	NA
PAHs (µg/L)														
1-Methylnaphthalene	28	280	11.6	0.02 U	NA	NA	NA	0.02 U	0.03 U	0.02 U	0.02 U	NA	NA	NA
2-Methylnaphthalene	28	280	8.43	0.02 U	NA	NA	NA	0.02 U	0.03 U	0.02 U	0.02 U	NA	NA	NA
Acenaphthene	20	200	0.27	0.05 J	NA	NA	NA	0.08 J	0.03 U	0.08 J	0.02 U	NA	NA	NA
Fluorene	280	2800	0.64	0.09 J	NA	NA	NA	0.15	0.06 J	0.05 U	0.05 U	NA	NA	NA
Naphthalene	14	140	1.29	0.05 U	NA	NA	NA	0.07 J	0.03 U	0.05 J	0.05 U	NA	NA	NA
Phenanthrene	210	2100	0.09 J	0.04 U	NA	NA	NA	0.02 U	0.03 U	0.04 U	0.04 U	NA	NA	NA
Pyrene	210	2100	0.02 U	0.03 U	NA	NA	NA	0.02 U	0.02 U	0.03 U	0.03 U	NA	NA	NA

Parameter	GCTL	NADSC	CEF-081-
			21I
			12/19/2007
VOCs (µg/L)			
Ethylbenzene	30	300	NA
Isopropylbenzene	0.8	8	0.32 J
Toluene	40	400	NA
Benzene	1	10	NA
MTBE	20	200	NA
PAHs (µg/L)			
1-Methylnaphthalene	28	280	NA
2-Methylnaphthalene	28	280	NA
Acenaphthene	20	200	NA
Fluorene	280	2800	NA
Naphthalene	14	140	NA
Phenanthrene	210	2100	NA
Pyrene	210	2100	NA

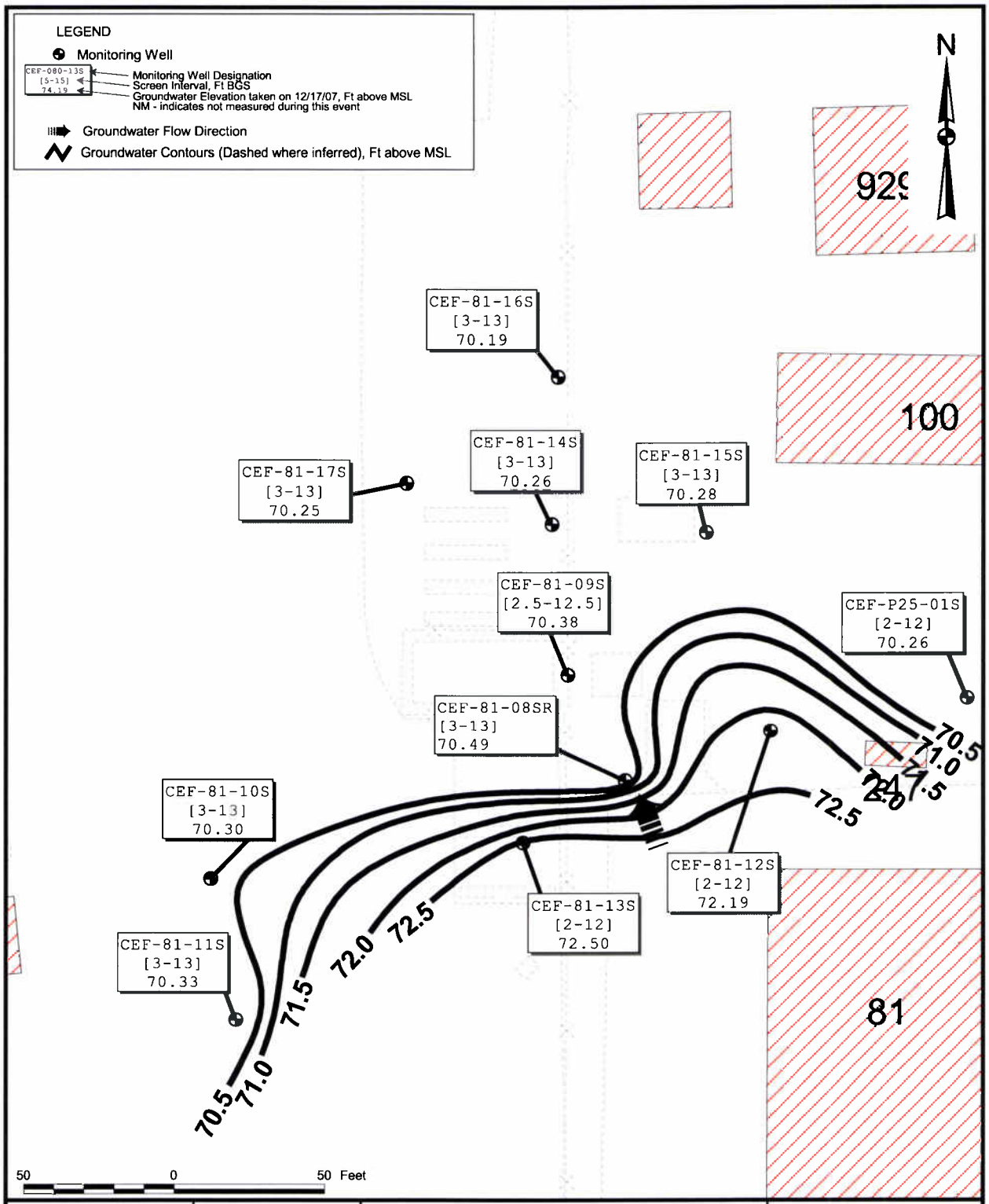
GCTL = Groundwater Cleanup Target Level.
NADSC = Natural Attenuation Default Source Concentration.
VOCs = Volatile organic compounds.
µg/L = Micrograms per liter.
MTBE = Methyl tertiary butyl ether.
PAHs = Polynuclear aromatic hydrocarbons.
U = Not detected at detection limit shown.
J = Estimated concentration.
Shading indicates concentration greater than FDEP criterion.
FDEP GCTLs from Chapter 62-777, Florida Administrative Code (FAC).
NADSC from Chapter 62-777, FAC.
NA = Not analyzed.

FIGURES



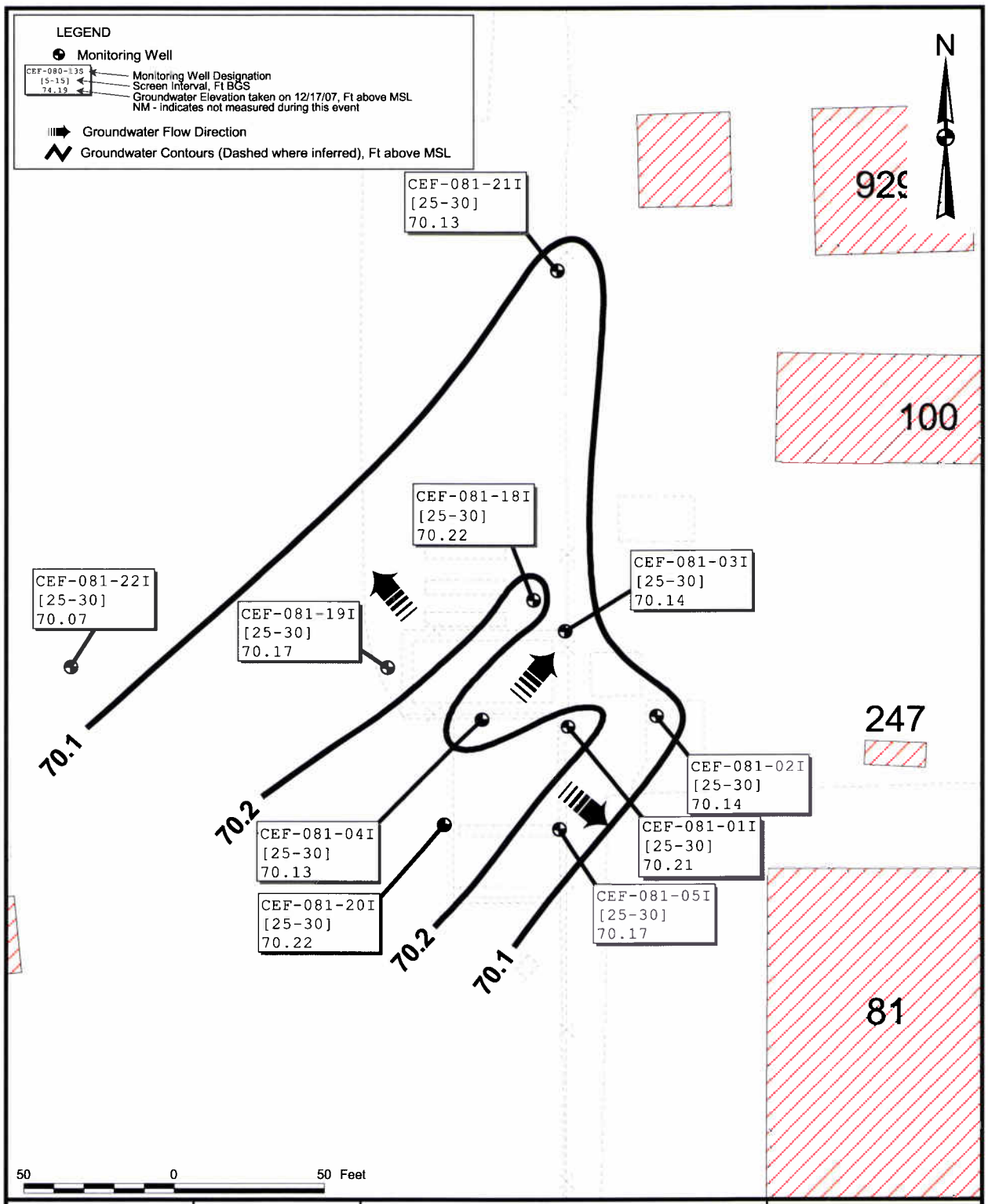
DRAWN BY MJJ	DATE 30Aug07	MONITORING WELL LOCATION MAP TANKS 81A, B, AND C 4TH QUARTER, 2ND YEAR GROUNDWATER MONITORING REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 0746
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED	NAVFAC		DRAWING NO. FIGURE 1 / REV 0

P:\GIS\NAS_CecilField\Tank_81abc_20080207.apr 08Mar08 MJJ Layout12



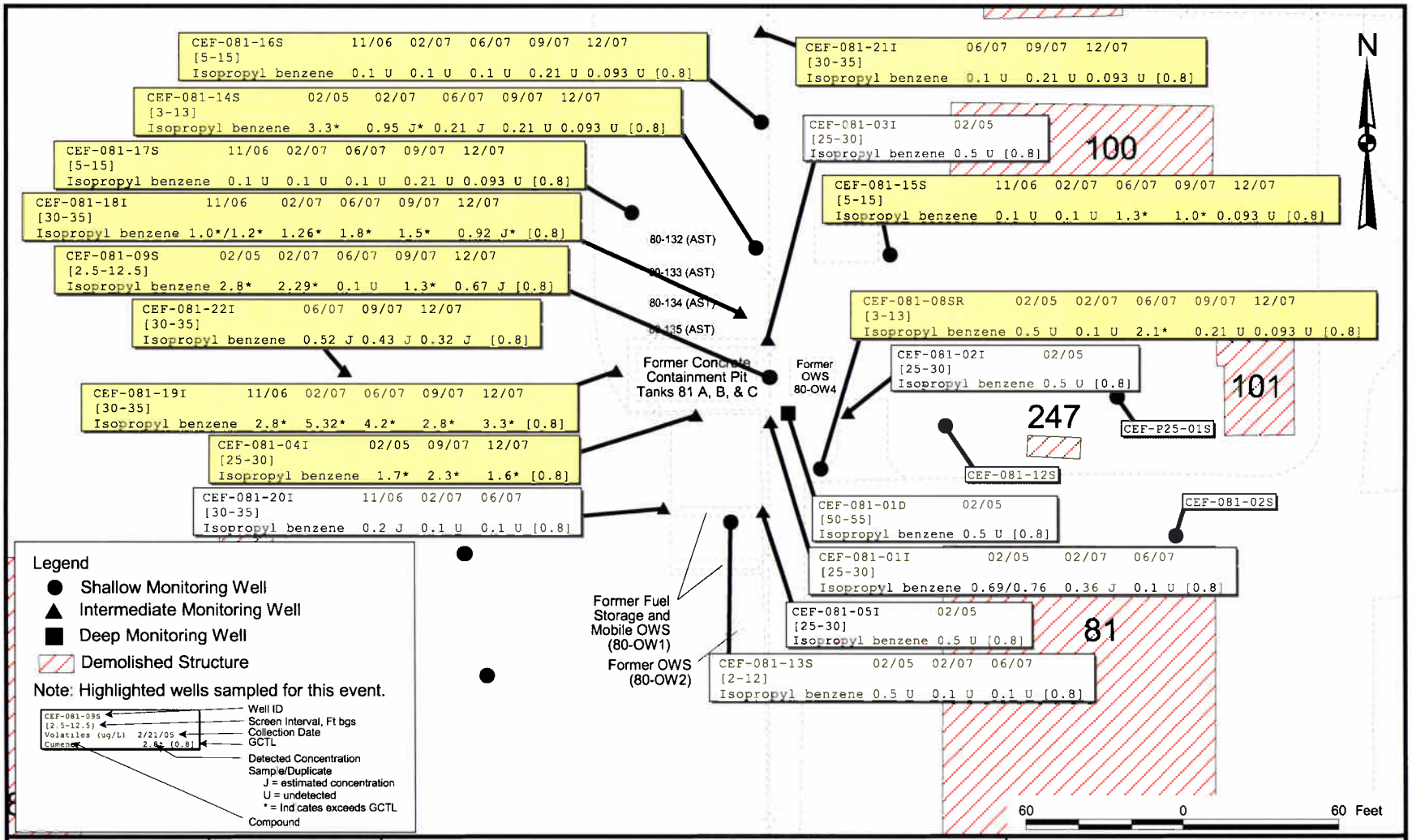
DRAWN BY MJJ	DATE 08Dec07	GROUNDWATER FLOW MAP (12/17/07) SHALLOW ZONE 4TH QUARTER, 2ND YEAR GROUNDWATER MONITORING REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 0746
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 2 REV 0

P:\GIS\NAS_CecilField\Tank_81abc_20080207.apr 13Feb08 MJJ Layout10



DRAWN BY MJJ	DATE 08Dec07	GROUNDWATER FLOW MAP (12/17/07) INTERMEDIATE ZONE TANKS 81A, B, AND C 4TH QUARTER, 2ND YEAR GROUNDWATER MONITORING REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 0746
CHECKED BY	DATE		APPROVED BY / DATE
COST/SCHEDULE-AREA			APPROVED BY / DATE
SCALE AS NOTED			DRAWING NO FIGURE 3 / REV 0

P:\GIS\NAS_CecilField\Tank_81abc_20080207.apr 08Mar08 MJJ Layout11



MJJ	DATE 07Feb08	ANALTYICAL RESULTS TANKS 81 A, B, AND C 4TH QUARTER, 2ND YEAR GROUNDWATER MONITORING REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	DRAWN BY CONTRACT NUMBER 0746
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED	NAVFAC		DRAWING NO. FIGURE 4 REV 0

P:\GIS\NAS_CecilField\Tank_81abc_20080207.apr 07Feb08 MJJ Layout15

ATTACHMENT A

REVISED NAMP

TETRA TECH NUS, INC.
661 Andersen Drive • Pittsburgh, PA 15220
Tel 412.921.7090 • Fax 412.921.4040 • www.tetratech.com

Document Tracking Number 07JAX0135

November 21, 2007

Project Number 112G00746

Mr. David Grabka
Florida Department of Environmental Protection
Twin Towers Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Reference: CLEAN IV Contract Number N62467-04-D-0055
Contract Task Order Number 0076

Subject: Natural Attenuation Monitoring Plan
Building 81, Tanks 81 A, B, and C
Naval Air Station Cecil Field
Jacksonville, Florida

Dear Mr. Grabka:

Tetra Tech NUS, Inc. (TtNUS) is pleased to submit this Natural Attenuation Monitoring Plan (NAMP) for Building 81, Tanks 81 A, B, and C. This document was prepared for the United States Department of the Navy, Naval Facilities Engineering Command Southeast (NAVFAC SE) under the Comprehensive Long-Term Environmental Action Navy (CLEAN) Contract Number N62467-04-D-0055, Contract Task Order 0076.

INTRODUCTION

This Natural Attenuation Monitoring Plan (NAMP) addresses the proposed groundwater monitoring activities for Tanks 81 A, B, and C at Former Naval Air Station (NAS) Cecil Field, Jacksonville, Florida. This NAMP was drafted to set and meet the milestone objectives in accordance with Chapter 62-770.690, Florida Administrative Code (FAC) and ultimately to meet the applicable No Further Action criteria of Rule 62-770.680, FAC at Tanks 81 A, B, and C.

PURPOSE

This monitoring plan for Tanks 81 A, B, and C is an integral component of the remedial action taken at this site under the Navy's Base Realignment and Closure (BRAC) Program at Former NAS Cecil Field. It is also the purpose of this plan to establish a reasonable exit strategy that will define when a satisfactory level of clean up has been achieved. The following sections describe the site background, objective of the monitoring plan, the specific monitoring plan components, and the exit strategy.

SITE BACKGROUND

The majority of NAS Cecil Field is located in southwestern Duval County, and the southernmost portion is located in Clay County. The base was operated by the Navy from approximately 1943 to 1999. Building 81, Tanks 81 A, B, and C were located in the Main Base area of NAS Cecil Field west of the Alpha runway at NAS Cecil Field. Figure 1 provides a location map for the site.

Former Tanks 81 A, B, and C consisted of three aboveground storage tanks (ASTs) located northwest of Building 81. No structures are currently located on the site. The location of the former Tanks 81 A, B,

and C is a relatively flat area with a mix of an asphalt parking lot and a grassy vacant lot. A topographic map of the area surrounding the site is presented in Figure 2.

According to the Environmental Baseline Survey for NAS Cecil Field, this site was on the eastern edge of an area called the Transportation and Fuel Management (TFM) compound (TtNUS, 2002). The TFM compound consisted of seven buildings (Buildings 49, 80, 80C, 178, 180, 384, and 584). Figure 3 shows the location of three of those buildings to the southwest of the site. Automotive maintenance for the base was managed from the TFM compound. Immediately east of the TFM compound, a series of buildings existed that housed the operations of a Navy subcontractor hired to handle plumbing, carpentry, general painting, and welding, electrical and light machine work related to general maintenance on base. This area was known as the Public Works Maintenance Area (PWMA). The central building of the PWMA was Building 81. Support buildings to the north and east of Building 81, shown on Figure 3, included Buildings 78, 98, 100, 101, 201, 247 and 929. Although the site's identification (Building 81, Tanks 81 A, B, and C) indicates a relationship to the PWMA, this information appears to establish a closer relationship between this site and the TFM compound.

Tanks 81 A, B, and C were contained in a secondary concrete containment pit that was approximately 2 feet deep. There is limited available information about the construction or possible contents of the three ASTs kept in this pit. (TtNUS, 2002).

TtNUS personnel conducted a Site Assessment and prepared a Site Assessment Report (SAR) for Building 81, Tanks 81 A, B, and C on July 18, 2002. The conclusions and recommendations from the SAR were as follows:

- Soil contamination was adequately addressed and removed by previous source removal actions.
- Groundwater contamination was delineated to the water table.
- There was no free product and contamination did not appear to extend deeper than the water table.
- Monitoring of contaminated groundwater in five water table wells (CEF-81-8SR, CEF-81-9S, CEF-81-12S, CEF-81-13S, and CEF-81-14S) for the four constituents of concern (COCs) [isopropylbenzene, naphthalene, 1,2,4-trimethylbenzene (TMB), and 1,3,5-TMB] for 5 years is recommended.
- Institutional controls were recommended to prevent use of groundwater as a potable water source.

The Florida Department of Environmental Protection (FDEP) generally accepted the recommendations from the SAR in the Monitoring Only Plan Approval Order dated October 1, 2002, with the exception of altering the recommended monitoring well list. The monitoring well list specified in the order was as follows: CEF-81-08SR, CEF-81-13S, CEF-81-14S, and CEF-81-01I.

The first quarterly monitoring event, conducted in January 2003, indicated that concentrations of COCs in intermediate well CEF-81-01I exceeded GCTLs. The associated report (TtNUS, 2003) recommended that the monitoring program be discontinued and that a supplemental site assessment be conducted. The FDEP approved the recommendation for a supplemental investigation in a letter dated February 5, 2004.

In response to these exceedances of COCs in CEF-81-01I during quarterly monitoring events in 2003, FDEP approved TtNUS's recommendation for a supplemental investigation on February 5, 2004. Additional monitoring wells were installed at the site for analysis as part of the supplemental site assessment. Four intermediate monitoring wells (CEF-81-02I, CEF-81-03I, CEF-81-04I, and CEF-81-05I) and one deep monitoring well (CEF-81-01D) were installed and developed in February 2005. The newly installed wells along with the original five Monitoring Only Plan wells were sampled for the COCs during the February 2005 groundwater sampling event.

The Supplemental Site Assessment Letter Report dated August 3, 2005, indicated that isopropyl benzene was migrating downgradient in the shallow and intermediate zones of the surficial aquifer; however, the deep zone had been delineated. FDEP approved an additional recommendation to further delineate the shallow and intermediate zones of the surficial aquifer in December 2005. In response, three shallow monitoring wells (CEF-081-15S, CEF-081-16S, and CEF-081-17S) and three intermediate monitoring wells (CEF-081-18I, CEF-081-19I, and CEF-081-20I) were installed and sampled in November 2006.

The laboratory analytical results from the November 2006 sampling event indicate that concentrations of isopropyl benzene in groundwater exceeded its GCTL in monitoring wells CEF-81-18I and CEF-18-19I. No GCTLs were exceeded for the other four newly installed wells (CEF-81-15S, CEF-81-16S, CEF-81-17S, and CEF-81-20I) during this sampling event (TtNUS, 2007).

The laboratory analytical results from the February 2007 sampling events indicate that concentrations of isopropyl benzene in groundwater exceed the GCTL in monitoring wells CEF-81-09S, CEF-81-14S, CEF-81-18I, and CEF-81-19I. No other COCs exceeded their respective GCTLs.

During the May 2007 BRAC Team (BCT) meeting, the installation of additional wells to further delineate contamination in the intermediate zone of the aquifer was discussed and the BCT agreed that adding two intermediate wells was the best course of action, and that the shallow zone was delineated.

In June 2007, two additional wells, CEF-081-21I and CEF-081-22I, were installed, developed, and sampled. The laboratory analytical results from the June 2007 sampling events indicated that concentrations of isopropyl benzene in groundwater exceeded the GCTL in monitoring wells CEF-81-08SR, CEF-81-15S, CEF-81-18I, and CEF-81-19I. The isopropyl benzene concentrations have decreased to below the GCTLs since the last sampling event (February 2007) in monitoring wells CEF-081-09S and CEF-081-14S. However, isopropyl benzene was first detected in monitoring wells CEF-081-08SR and CEF-081-15S during this June 2007 sampling event. No other COCs exceeded their respective GCTLs. Analytical results for the June 2007 sampling event are presented on Figure 4.

Based on the results of the June 2007 groundwater sampling event, TtNUS recommends that a revised NAMP be prepared and implemented for the site. Chapter 62-770.690(7)(a), FAC requires a minimum of two wells for the NAMP to monitor the area of maximum concentration of contaminants and the downgradient edge of the plume. TtNUS also recommended that quarterly sampling continue.

OBJECTIVES

The objective of this NAMP is to ensure that UST requirements are acceptable to meet the goals of protecting human health and the environment by satisfying the following objectives:

- Assure the public, the regulators, and the scientific community that the selected monitoring plan is working as expected and continues to be protective of human health and the environment.
- Collect sufficient groundwater quality data to enable reliable assessment of data trends and projections of time to reach remedial goals defined by the milestones and FDEP GCTLs for groundwater.
- Make timely decisions for the need to implement contingent actions and/or modify the NAMP.
- Assess the progress for the cleanup against the exit strategy.

NAMP COMPONENTS AND SUMMARY

This NAMP provides groundwater sample collection and analysis methodology for the monitoring effort at Tanks 81 A, B, and C. The following sections provide the components of the plan for Tanks 81 A, B, and C.

Components of the Plan – TANKS 81 A, B, AND C

Groundwater will be monitored for the COC isopropyl benzene to assess the effectiveness of natural attenuation as a treatment for the surficial aquifer at Tanks 81 A, B, and C. Six shallow monitoring wells and five intermediate monitoring wells located throughout the groundwater plume at Tanks 81 A, B, and C will be sampled to monitor groundwater plume size, chemical concentrations, and movement of the plume. The monitoring program will begin with quarterly sampling for years one and two and semi-annual sampling in years three, four, and five. Groundwater monitoring will continue until the FDEP GCTL is attained or unless, during an annual review, site conditions suggest that a different cleanup method should be considered. Figure 5 presents the location of the groundwater monitoring wells that will be sampled as part of this monitoring plan.

Groundwater Measurements and Sampling

During each sampling event, synoptic groundwater level measurements will be obtained from each monitoring well at the site. Because the aquifer is very flat, groundwater levels will be collected from all of the wells in the vicinity of the plume as listed below:

Shallow Aquifer

- CEF-P25-01S
- CEF-081-02S
- CEF-081-08SR
- CEF-081-09S
- CEF-081-10S
- CEF-081-11S
- CEF-081-12S
- CEF-081-13S
- CEF-081-14S
- CEF-081-15S
- CEF-081-16S
- CEF-081-17S

Intermediate Aquifer

- CEF-081-01I
- CEF-081-02I
- CEF-081-03I
- CEF-081-04I
- CEF-081-05I
- CEF-081-18I
- CEF-081-19I
- CEF-081-20I
- CEF-081-21I
- CEF-081-22I

Measurements will be collected with a water interface probe (or equivalent) using the marked location on the top of the well casing as the reference point. Groundwater level measurements will be recorded to the nearest 0.01 foot.

Groundwater samples will be obtained from 11 monitoring wells during each sampling event and submitted for fixed-base laboratory analysis (Figure 5). The following wells will be sampled and analyzed for isopropyl benzene only:

- CEF-081-04I
- CEF-081-17S
- CEF-081-08SR
- CEF-081-09S
- CEF-081-14S
- CEF-081-15S
- CEF-081-16S
- CEF-081-18I
- CEF-081-19I
- CEF-081-21I
- CEF-081-22I

Teflon® and surgical-grade silicon tubing will be used for sample collection. Groundwater samples will be collected using the "straw" method for volatile organic compounds (VOCs) and will be discharged into the appropriate sample bottles for analysis. Samples requiring preservation will be collected in pre-preserved bottles provided by the laboratory.

Procedures will be in accordance with TtNUS SOPs and FDEP SOPs. Since the site is in Florida, the FDEP SOPs will take precedence if there is a conflict between the two guidance documents unless otherwise directed.

Monitoring Parameters

During this monitoring period, data evaluation will be conducted after each sampling event. The results of the data evaluation will be used to make recommendations for continued monitoring and/or modifications in approach or methodology to ensure adequate and appropriate data collection to achieve the purposes of this NAMP. In anticipation of natural attenuation in 5 years, recommended milestone objectives for annual evaluation of remediation progress will also be provided in accordance with Chapter 62-770.690(7)(g), FAC.

The recommended COC for this NAMP is isopropyl benzene and is the only parameter to be analyzed for groundwater samples collected at Tanks 81 A, B, and C under United States Environmental Protection Agency Method SW-846 8620B (VOCs). In addition to regular calibration of field equipment and appropriate documentation, quality control samples will be collected during the field monitoring activities.

During sampling activities, one trip blank, consisting of one vial, shall be placed in each cooler that contains environmental samples destined for VOC analysis. One field duplicate will also be collected during each sampling event.

In anticipation of natural attenuation in 5 years for the extent of the plume, the following recommended milestone objectives for annual evaluation of remediation progress is provided in accordance with Chapter 62-770.690(7)(g), FAC:

Timeline	Isopropyl benzene
End of Year 1	4 micrograms per liter (µg/L)
End of Year 2	3 µg/L
End of Year 3	2 µg/L
End of Year 4	0.8 µg/L
End of Year 5	<0.8 µg/L

DATA ASSESSMENT AND REPORTING

The recommended frequency of monitoring events will be quarterly for the first 2 years and semi-annually for the last 3 years. Upon completion of each monitoring event, plume concentrations will be documented in a groundwater monitoring report. Monitoring reports will be prepared and submitted to NAVFAC SE and the FDEP. The monitoring report will contain the following information:

- Introduction describing site location and brief discussion of site history.
- Description of groundwater activities.
- Groundwater analytical results.
- Groundwater flow conditions.
- Any other pertinent data or site changes that might affect analytical results.
- Recommendations that would assist in reaching milestones of this NAMP.

EXIT STRATEGIES

Natural Attenuation Exit Strategy

Natural attenuation monitoring is required to measure the progress of achieving the milestones at Tanks 81 A, B, and C. To prevent overly long periods of monitoring that are not cost-effectively remediating the site, various exit strategy components are included in this section. The following components of the Tanks 81 A, B, and C exit strategy should be considered during the natural attenuation monitoring program.

- **Achievement of GCTLs and Milestones:** This exit point is clear and will lead to discontinuing of the monitoring program. Once the concentration of the COC (isopropyl benzene) is less than its GCTL in all wells being monitored for two successive sampling events, then monitoring will cease and the site will be closed.

- **No Continued Reduction in COC:** An evaluation of the progress of natural attenuation at Tanks 81 A, B, and C will be performed after each natural attenuation event to evaluate potential natural attenuation pathways and to identify direct evidence of COC degradation. If at any time the Navy deems the process ineffective, they may opt to change the remediation strategy to a more active technology. The concentrations in the wells should be compared to the milestones regularly. If at any point progress toward the milestones is not being achieved, the Navy may consider exiting the natural attenuation process and opting for an active remediation alternative.

In addition to the exit from the natural attenuation program, individual wells may be removed from the program if the Navy, with agreement from FDEP, decides that continued monitoring no longer provides pertinent information. The party that is performing the sampling and reporting will provide recommendations regarding the sampling program.

Please provide any comments or direct any questions to Kara Wimble at 904-730-4669, extension 214, or myself at 412-921-8163.

Sincerely,

Robert F. Simcik, P.E.
Task Order Manager

RS/kw

Enclosure

c: Barbara Nwokike (1 copy)
Mike Halil, CH2M Hill (electronic only)
Rob Simcik, TtNUS (Bookcase File)
Mark Speranza, TtNUS (cover letter only)
Mark Jonnet, TtNUS (Cecil DMS)
Mark Perry, TtNUS (unbound)
Debra Humbert, TtNUS (cover letter only)
Project File CTO 0076 (1 copy)

CERTIFICATION

The information contained in this report is based on the investigation and associated information detailed in the text, appended to this report, and supporting documents referenced in this report. If conditions are determined to exist that differ from those described, the undersigned professional engineer should be notified to evaluate the effects of any additional information on the information described in this report. This Natural Attenuation Monitoring Plan was developed for Tanks 81 A, B, and C at Naval Air Station Cecil Field, Jacksonville, Florida, and should not be construed to apply to any other site.

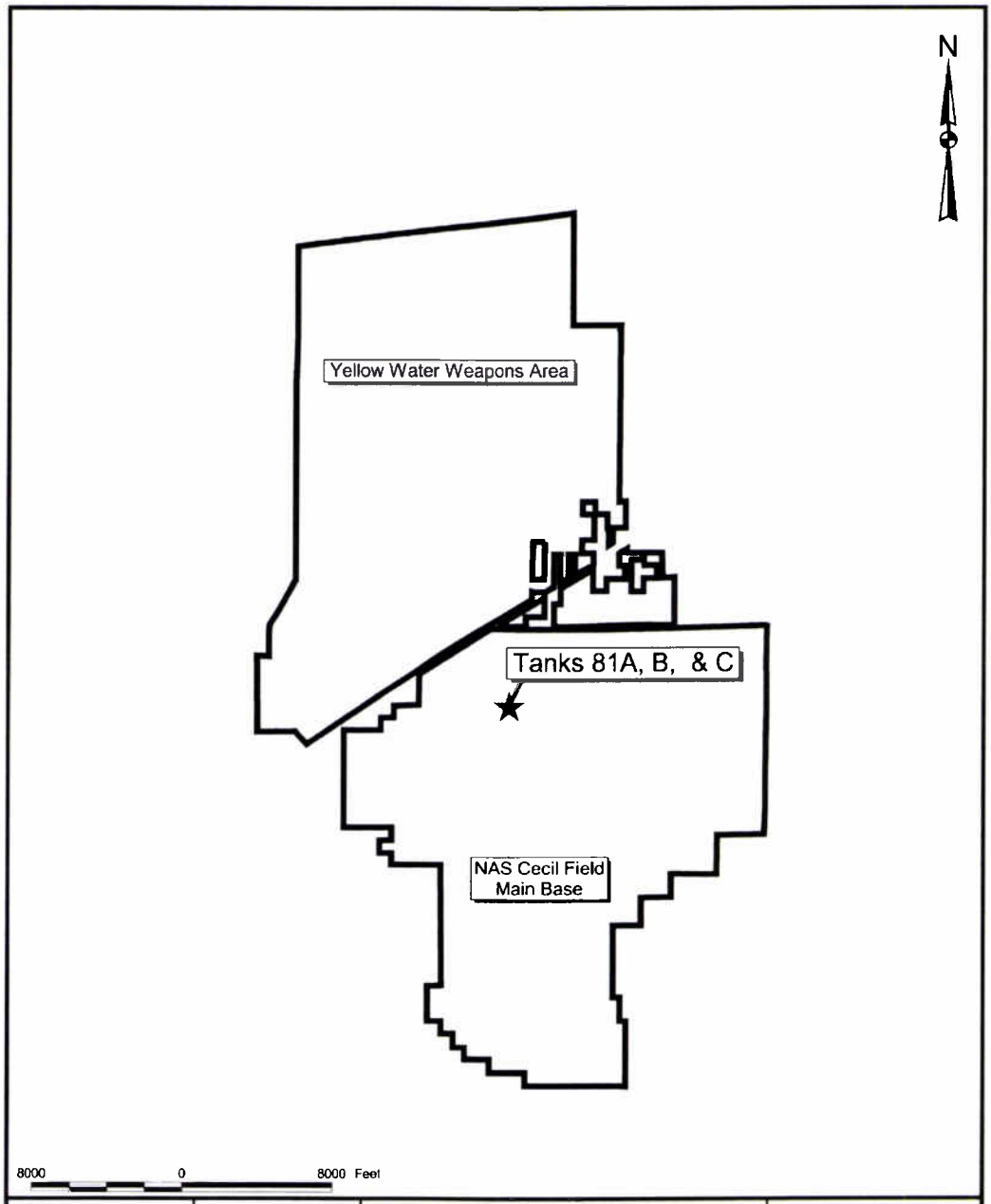
ROBERT FRANK SIMCIK
LICENSE
No. 00061263
STATE OF FLORIDA
PROFESSIONAL ENGINEER

11/21/07

Robert F Simcik, P.E.
Florida License Number 61263

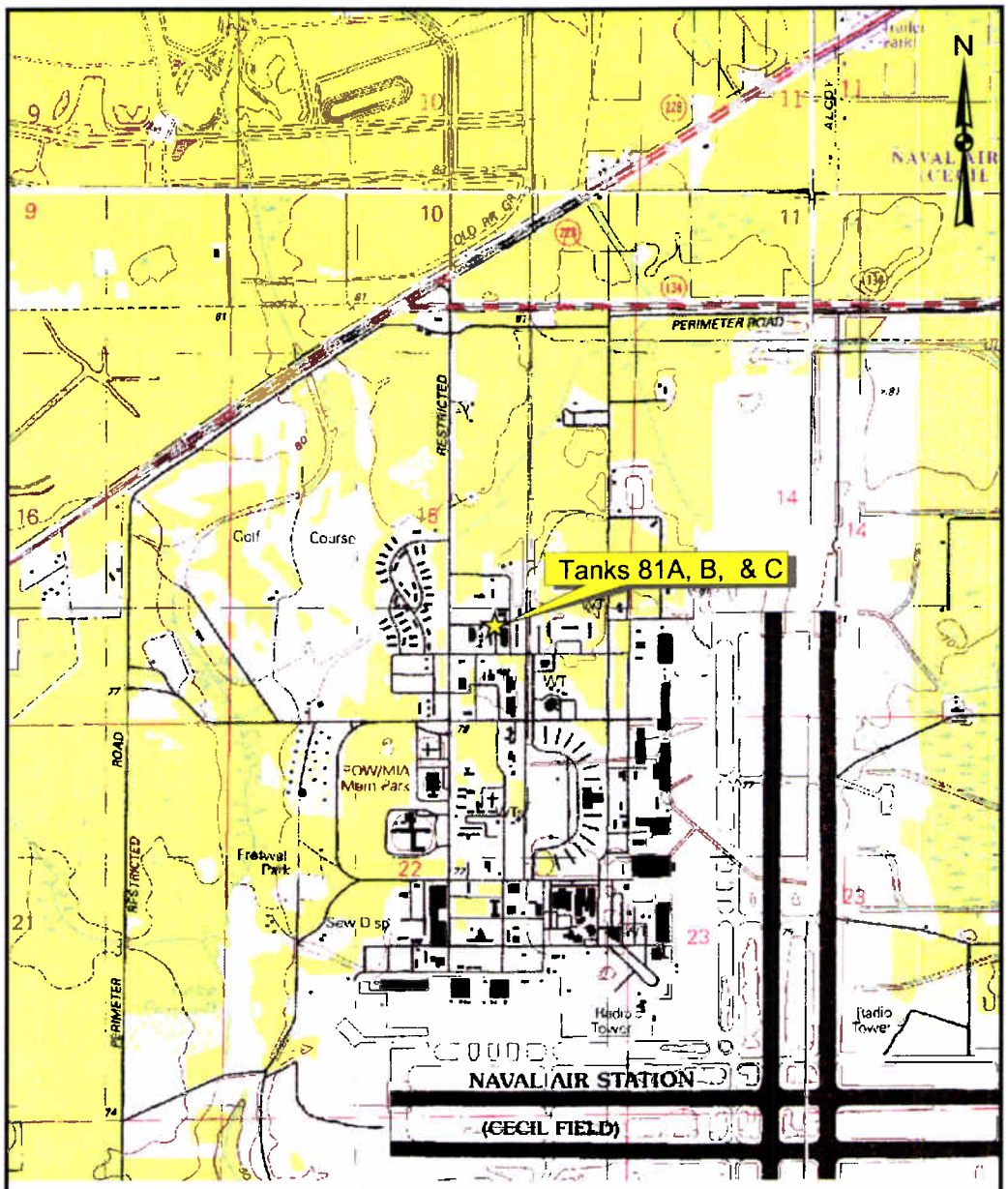
Date

FIGURES



DRAWN BY MJJ	DATE 30Aug07	GENERAL LOCATION MAP TANKS 81A, B, & C NATURAL ATTENUATION MONITORING PLAN NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 0746
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE AREA			APPROVED BY DATE
SCALE AS NOTED		NAVFAC	DRAWING NO FIGURE 1 / REV 0

P:\GIS\NAS_CecilField\Tank_81abc_20070830.apr 30Aug07 MJJ 01_Site Location Map Layout



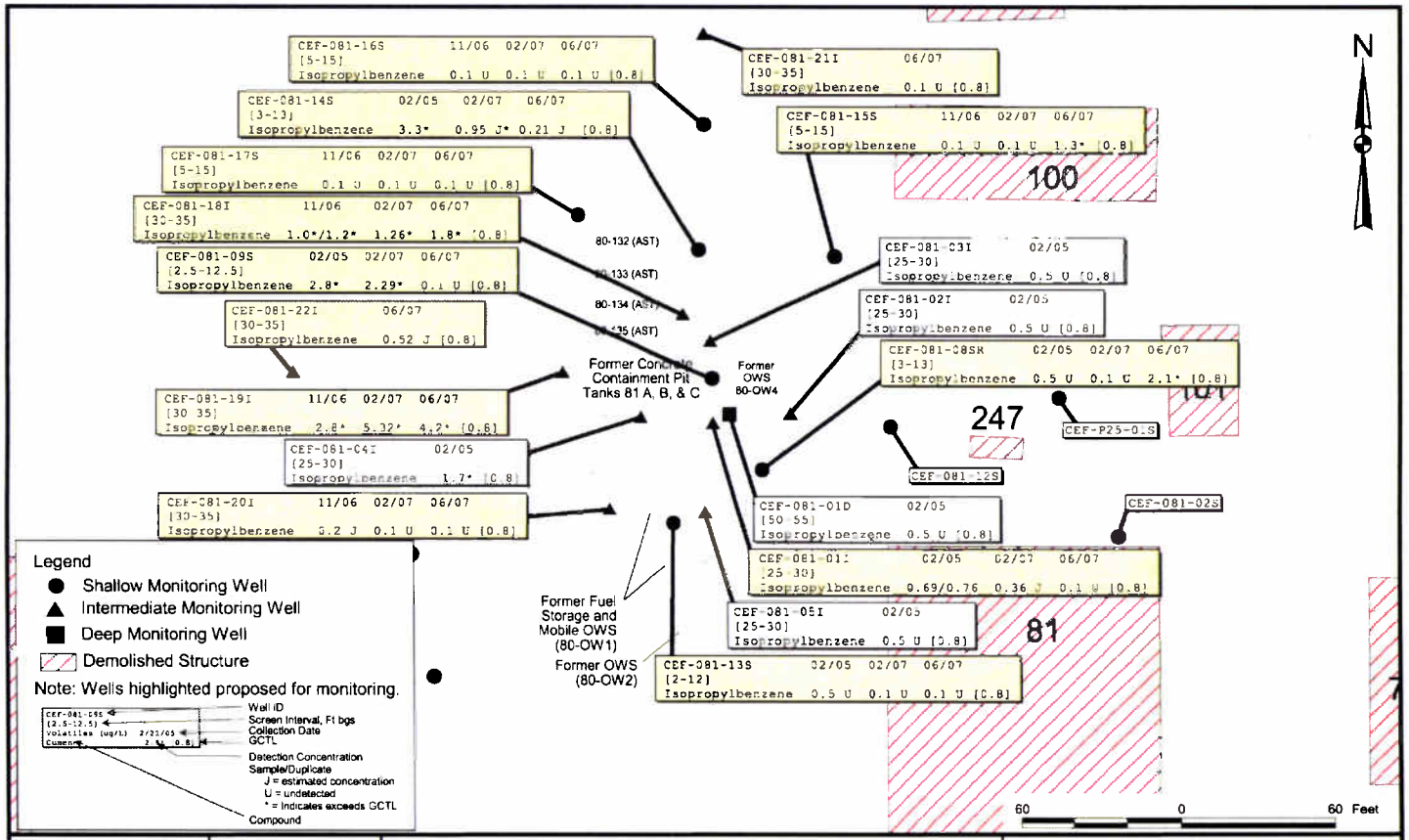
Source: USGS Fiftone Florida 7.5-Minute Topographic Quadrangle, 1993.

DRAWN BY MJJ	DATE 30Aug07	TOPOGRAPHIC MAP TANKS 81A, B, & C NATURAL ATTENUATION MONITORING PLAN NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 0746
CHECKED BY	DATE		APPROVED BY / DATE
COST/SCHEDULE-AREA			APPROVED BY / DATE
SCALE AS NOTED	NAVFAC		DRAWING NO FIGURE 2 / REV 0

P:\GIS\NAS_CecilField\Tank_81abc_20070830.apr 30Aug07 MJJ 02_TopographicLayout

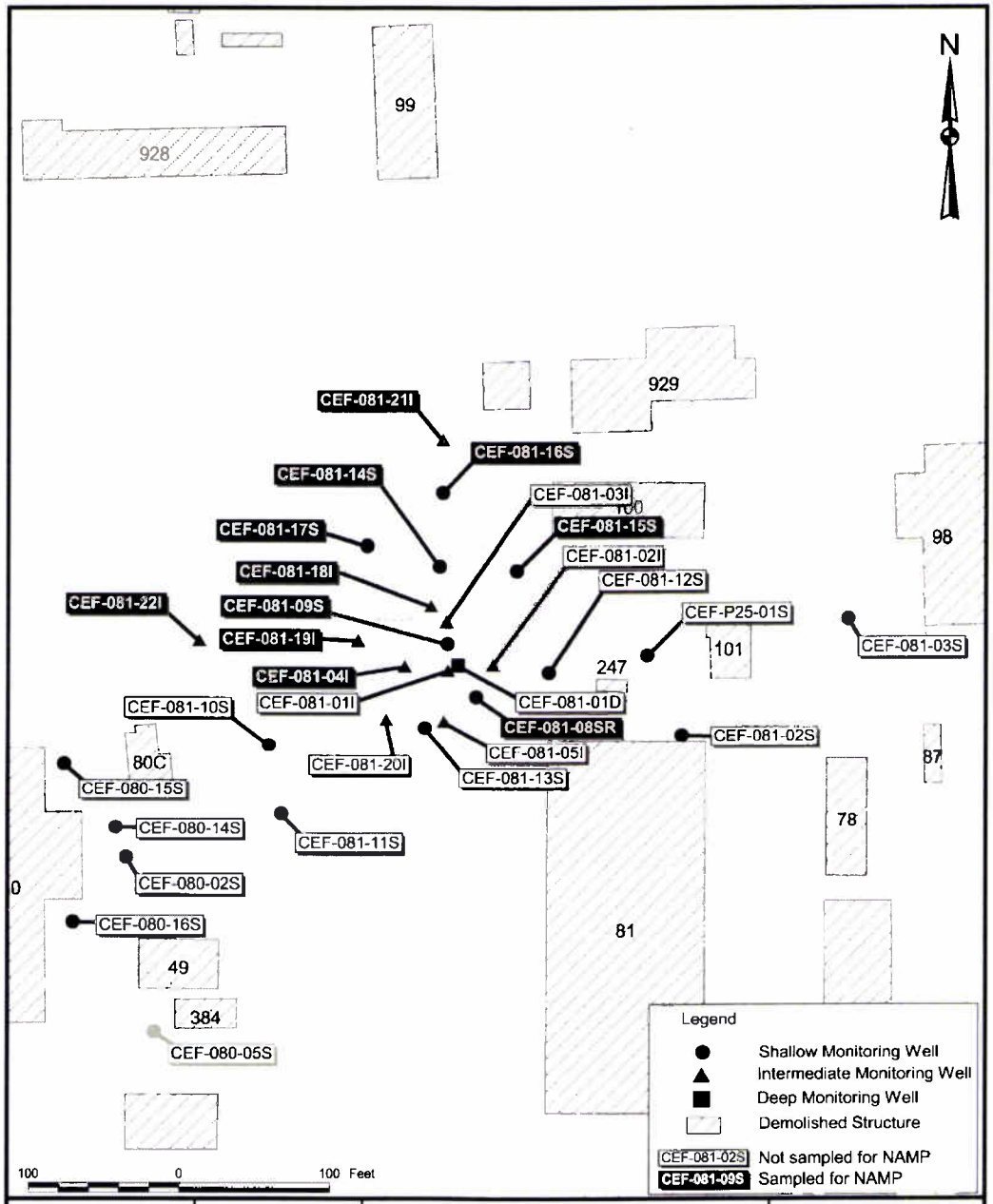
DRAWN BY MJJ	DATE 30Aug07	LAND USE MAP TANKS 81A, B, & C NATURAL ATTENUATION MONITORING PLAN NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 0746
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED	NAVFAC		DRAWING NO. FIGURE 3 / REV 0

P:\GIS\NAS_CecilField\Tank_81abc_20070830.apr 12Nov07 MJJ 01_Site Location Map Layout



MJJ	DATE 29Dec08	ANALTYICAL RESULTS TANKS 81 A, B, AND C NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	DRAWN BY CONTRACT NUMBER 0746
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED	NAVFAC		DRAWING NO FIGURE 4 / REV 0

P:\GIS\NAS_CecilField\Tank_81abc_20070830.apr 30Aug07 MJJ Layout12



DRAWN BY MJJ	DATE 30Aug07	MONITORING WELL LOCATION MAP TANKS 81A, B, & C NATURAL ATTENUATION MONITORING PLAN NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 0746
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED		NAVFAC	DRAWING NO FIGURE 5 / REV 0

P:\GIS\NAS_CecilField\Tank 81abc_20070830 apr 30Aug07 MJJ Layout12

ATTACHMENT B

GROUNDWATER ANALYTICAL REPORT
DECEMBER 2007

8540 Baycenter Road Jacksonville,Florida 32256 (904) 739-2277 (904) 739-2011 fax

Columbia Analytical Services INC
An Employee - Owned Company

December 28, 2007 Service Request No: J0706110

Amy Thomson
Tetra Tech NUS, Inc.
Foster Plaza 7
661 Andersen Drive
Pittsburgh, PA 15220

RE: 81-ABC/112G00746

Dear Amy:

Enclosed are the results of the sample(s) submitted to our laboratory on December 19, 2007. For your reference, these analyses have been assigned our service request number **J0706110**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the NELAC 2003 Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please call if you have any questions. My extension is 224. You may also contact me via email at CMyers@caslab.com.

Respectfully submitted,

Columbia Analytical Services, Inc.

Craig R. Myers

Craig Myers
Project Chemist

Laboratory Manager: Greg Jordan
Quality Assurance Officer: Kathy Brungard

CAS Jacksonville is NELAC-accredited by the State of Florida, #E82502 valid through 6/30/08. Other state accreditations include: Arkansas, #88-0600 valid through 1/12/06; Georgia, #958 valid through 6/30/08; Louisiana, #02086 valid through 6/30/08; Texas, #T104704197-06-TX valid through 5/31/08; North Carolina, #527 valid through 12/31/07; South Carolina, #96021001 valid through 6/30/07.

TABLE OF CONTENTS

CAS Lab Reference No.: J0703207
Non CLP Tier III (w/out Raw Data)

	Page No.
Cover Page	1
Table of Contents	2
Case Narrative	3
Sample Identification Cross-Reference	4
Data Qualifiers	5
Acronyms	6
Chain of Custody Documentation	7
Summary Package	11
Volatile Organic Compounds by GC/MS	12
Validation Package	42
Volatile Organic Compounds by GC/MS	43

This report contains a total of 78 pages

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Tetra Tech NUS, Inc.	**Service Request No.:**	J0706110
Project:	81-ABC/112G00746	**Date Received:**	12/19/07
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier III data deliverables including validation summary forms. When appropriate to the procedure, method blank results have been reported with each analytical test. Analytical procedures performed by the lab are validated in accordance with NELAC standards. Parameters that are included in the NELAC Fields of Testing but are not included in the lab's NELAC accreditation are identified in the discussion of each analytical procedure.

Sample Receipt

Twelve water samples and one trip blank were received for analysis at Columbia Analytical Services on 12/19/07. The samples were received in good condition and consistent with the accompanying chain of custody form. Samples are refrigerated at 4±2°C upon receipt at the lab except for aqueous samples designated for metals analyses, which were stored at room temperature.

Volatile Organic Compounds by GC-MS

The samples were analyzed for Volatile Organics using EPA Method 8260. No problems were observed.

Approved by Craig R. Hy **Date** 12/28/07

Client: Tetra Tech NUS, Inc.
Project: 81-ABC/112G00746

Service Request: J0706110

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
J0706110-001	CEF-081-19I-20071217	12/17/07	12:07
J0706110-002	CEF-081-04I-20071217	12/17/07	12:48
J0706110-003	CEF-081-09S-20071217	12/17/07	13:52
J0706110-004	CEF-081-18I-20071217	12/17/07	14:54
J0706110-005	CEF-081-22I-20071218	12/18/07	10:17
J0706110-006	CEF-081-21I-20071218	12/18/07	11:04
J0706110-007	CEF-081-16S-20071218	12/18/07	11:47
J0706110-008	CEF-081-17S-20071218	12/18/07	12:44
J0706110-009	CEF-081-14S-20071218	12/18/07	13:38
J0706110-010	CEF-081-15S-20071218	12/18/07	14:30
J0706110-011	CEF-081-08SR-20071219	12/19/07	09:12
J0706110-012	CEF-081-DUP01-20071217	12/17/07	00:00
J0706110-013	TRIP BLANK	12/19/07	00:00

Florida DEP Data Qualifiers

B Results based upon colony counts outside the acceptable range.

D Measurement was made in the field.

H Value based on field kit determination; results may not be accurate.

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

J Estimated value (one of the following reasons is discussed in the project case narrative).
1. The result may be inaccurate because the surrogate recovery limits have been exceeded.
2. No known quality control criteria exists for the component.
3. The reported value failed to meet the established quality control criteria for either precision or accuracy.
4. The sample matrix interfered with the ability to make any accurate determination (e.g., primary and confirmation results show greater than 40% RPD).
5. The data is questionable because of improper laboratory or field protocols (e.g., GC/MS Tune did not meet method criteria).

K Off scale low. The value is less than the lowest calibration standard but greater than the method reporting limit (MRL).

L Off scale high. The analyte is above the upper limit of the linear calibration range.

M The MDL/MRL has been elevated because the analyte could not be accurately quantified due to matrix interference.

N Presumptive evidence of the analyte. Confirmation was not performed.

Q Sample held beyond the accepted holding time.

T Value reported is less than the laboratory method detection limit. The value is reported for informational purposes only.

U Indicates that the compound was analyzed for but not detected.

V Indicates that the analyte was detected in both the sample and the associated method blank.

Y The laboratory analysis was from an improperly preserved sample.

Z Too many colonies were present (TNTC). The numeric value represents the filtration volume.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Chain of Custody and Sample Receipt Documentation

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER 26240 | PAGE 1 OF 1

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G00746	81-ABC	Kara Wimble	(904) 636-6125	Columbia Analytical Services, Craig Myers
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER: Jon Foster	PHONE NUMBER: (904) 545-7048	ADDRESS: 8540 Baycenter Rd.
		CARRIER/WAYBILL NUMBER: Hand Delivery		CITY, STATE: Jacksonville, FL

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

CONTAINER TYPE PLASTIC (P) or GLASS (G): G
PRESERVATIVE USED: HCl
TYPE OF ANALYSIS: VOCs 8260B

[redacted]

DATE YEAR 2007	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	VOCs 8260B	COMMENTS
12/17	1207	CEF-081-19I-20071217				GW	G	3	X	Cool to 4°C
	1248	CEF-081-04I-20071217								
	1352	CEF-081-09S-20071217								
12/17	1454	CEF-081-18I-20071217								
12/18	1017	CEF-081-22I-20071218								
	1104	CEF-081-21I-20071218								
	1147	CEF-081-16S-20071218								
	1244	CEF-081-17S-20071218								
	1338	CEF-081-14S-20071218								
12/18	1430	CEF-081-15S-20071218								
12/19	0912	CEF-081-08SR-20071219								
12/17	0000	CEF-081-DUP01-20071217				GW	G	3	X	

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: Jonathan Foster	12-19-07	1115	1. RECEIVED BY: Shawn Lightsey CAS	12-19-07	1115
2. RELINQUISHED BY			2. RECEIVED BY		
3. RELINQUISHED BY			3. RECEIVED BY		

COMMENTS

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

4/02R

Columbia Analytical Services, Inc.
Cooler Receipt and Preservation Form

Client: TetraTech Service Request # J0706110

Project: 112600746

Cooler received on 12/19/07 and opened on 12/19/07 by SW

COURIER: CAS UPS FEDEX DHL CLIENT Tracking #

1	Were custody seals on outside of cooler?	Yes	No	N/A
2	Were seals intact, signed and dated?	Yes	No	N/A
3	Were custody papers properly filled out?	Yes	No	N/A
4	Temperature of cooler(s) upon receipt (Should be 4 +/- 2 degrees C) 0.5			
5	Correct Temperature?	Yes	No	N/A
6	Were Ice or Ice Packs present	Yes	No	N/A
7	Did all bottles arrive in good condition (unbroken, etc....)?	Yes	No	N/A
8	Were all bottle labels complete (sample ID, preservation, etc....)?	Yes	No	N/A
9	Did all bottle labels and tags agree with custody papers?	Yes	No	N/A
10	Were the correct bottles used for the tests indicated?	Yes	No	N/A
11	Were all of the preserved bottles received with the appropriate preservative?	Yes	No	N/A

HNO3 pH<2 H2SO4 pH<2 ZnAc2/NaOH pH>9 NaOH pH>12 HCl pH<2

Preservative additions noted below

12	Were all samples received within analysis holding times?	Yes	No	N/A
13	Were VOA vials checked for absence of air bubbles? If present, note below	Yes	No	N/A
14	Where did the bottles originate?	CAS	Client	

Sample ID	Reagent	Manuf. Lot # or CAS Chem ID	ml added	Inititials

Additional comments and/or explanation of all discrepancies noted above:

TRIP BLANK Not on COC

Client approval to run samples if discrepancies noted: Date:

SR #: J070610 Date: 12/19/07 Initials: SRO

Note that pH is checked and meets the required pH unless noted in the column heading unless otherwise noted on cooler receipt form.

	Bottle Code																													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	40mL	40mL	40mL	40mL	125mL	125mL	125mL	125mL	125mL	250mL	250mL	250mL	250mL	250mL	250mL	500mL	500mL	500mL	1L	1L	1L	1L	1L	2oz	4oz	6oz	16oz	5g	125mL	Misc
Container	G	G	G	G	P	P	P	P	P	P	P	P	P	G	G	P	P	P	P	P	G	G	G	G	G	G	G	ENC	P	Misc
Preservative		HCl	Sodium Thiosulfate	H2SO4		HCl	H2SO4	HNO3		H2SO4	HNO3	Ascorbic/NaOH	NaOH		HNO3		H2SO4	HNO3		HNO3		HCl	H2SO4						Sodium Thiosulfate	
Req. pH	N/A	<2	N/A	<2	N/A	<2	<2	<2	N/A	<2	<2	>9	>12	N/A	<2	N/A	<2	<2	N/A	<2	N/A	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample #	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-001		3																												
-002																														
-003																														
-004																														
-005																														
-006																														
-007																														
-008																														
-009																														
-010																														
-011																														
-012																														
-013																														
-014																														
-015																														
-016																														
-017																														
-018																														
-019																														
-020																														
-021																														
-022																														
-023																														
-024																														
-025																														
-026																														
-027																														
-028																														
-029																														
-030																														
-031																														
-032																														
-033																														
-034																														
-035																														
-036																														
-037																														
-038																														
-039																														
-040																														

Summary Package

Organic Analysis:
Volatile Organic Compounds by GC/MS

Summary Package

Sample and QC Results

Client: Tetra Tech NUS,Inc.
Project: 81-ABC/112G00746

Service Request: J0706110

Cover Page - Organic Analysis Data Package
Volatile Organic Compounds by GC/MS

Sample Name	Lab Code	Date Collected	Date Received
CEF-081-19I-20071217	J0706110-001	12/17/2007	12/19/2007
CEF-081-04I-20071217	J0706110-002	12/17/2007	12/19/2007
CEF-081-09S-20071217	J0706110-003	12/17/2007	12/19/2007
CEF-081-18I-20071217	J0706110-004	12/17/2007	12/19/2007
CEF-081-22I-20071218	J0706110-005	12/18/2007	12/19/2007
CEF-081-21I-20071218	J0706110-006	12/18/2007	12/19/2007
CEF-081-16S-20071218	J0706110-007	12/18/2007	12/19/2007
CEF-081-17S-20071218	J0706110-008	12/18/2007	12/19/2007
CEF-081-14S-20071218	J0706110-009	12/18/2007	12/19/2007
CEF-081-15S-20071218	J0706110-010	12/18/2007	12/19/2007
CEF-081-08SR-20071219	J0706110-011	12/19/2007	12/19/2007
CEF-081-DUP01-20071217	J0706110-012	12/17/2007	12/19/2007
TRIP BLANK	J0706110-013	12/19/2007	12/19/2007
CEF-081-DUP01-20071217MS	JWG0704236-1	12/17/2007	12/19/2007
CEF-081-DUP01-20071217DMS	JWG0704236-2	12/17/2007	12/19/2007

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: Jerry Allen

Date: 12/27/07 Title: Organic Manager

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/17/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-19I-20071217	**Units:**	ug/L
Lab Code:	J0706110-001	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	**3.3**		1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	106	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	102	75-120	12/26/07	Acceptable
Dibromofluoromethane	101	82-116	12/26/07	Acceptable
Toluene-d8	105	88-117	12/26/07	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/17/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-04I-20071217	**Units:**	ug/L
Lab Code:	J0706110-002	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	**1.6**		1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	103	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	103	75-120	12/26/07	Acceptable
Dibromofluoromethane	100	82-116	12/26/07	Acceptable
Toluene-d8	106	88-117	12/26/07	Acceptable

Comments:

Analytical Results

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/17/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-09S-20071217	**Units:**	ug/L
Lab Code:	J0706110-003	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	**0.67**	I	1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	104	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	101	75-120	12/26/07	Acceptable
Dibromofluoromethane	101	82-116	12/26/07	Acceptable
Toluene-d8	105	88-117	12/26/07	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/17/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-18I-20071217	**Units:**	ug/L
Lab Code:	J0706110-004	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	**0.92**	I	1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	104	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	102	75-120	12/26/07	Acceptable
Dibromofluoromethane	101	82-116	12/26/07	Acceptable
Toluene-d8	106	88-117	12/26/07	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/18/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-22I-20071218	**Units:**	ug/L
Lab Code:	J0706110-005	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	**0.32**	I	1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	103	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	101	75-120	12/26/07	Acceptable
Dibromofluoromethane	101	82-116	12/26/07	Acceptable
Toluene-d8	105	88-117	12/26/07	Acceptable

Comments:

Analytical Results

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/18/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-21I-20071218	**Units:**	ug/L
Lab Code:	J0706110-006	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	ND	U	1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	103	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	102	75-120	12/26/07	Acceptable
Dibromofluoromethane	100	82-116	12/26/07	Acceptable
Toluene-d8	105	88-117	12/26/07	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/18/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-16S-20071218	**Units:**	ug/L
Lab Code:	J0706110-007	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	ND	U	1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	105	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	103	75-120	12/26/07	Acceptable
Dibromofluoromethane	102	82-116	12/26/07	Acceptable
Toluene-d8	105	88-117	12/26/07	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/18/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-17S-20071218	**Units:**	ug/L
Lab Code:	J0706110-008	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	ND	U	1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	104	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	101	75-120	12/26/07	Acceptable
Dibromofluoromethane	100	82-116	12/26/07	Acceptable
Toluene-d8	105	88-117	12/26/07	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/18/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-14S-20071218	**Units:**	ug/L
Lab Code:	J0706110-009	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	ND	U	1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	105	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	102	75-120	12/26/07	Acceptable
Dibromofluoromethane	100	82-116	12/26/07	Acceptable
Toluene-d8	105	88-117	12/26/07	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/18/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-15S-20071218	**Units:**	ug/L
Lab Code:	J0706110-010	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	ND	U	1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	105	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	102	75-120	12/26/07	Acceptable
Dibromofluoromethane	101	82-116	12/26/07	Acceptable
Toluene-d8	105	88-117	12/26/07	Acceptable

Comments:

Analytical Results

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/19/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-08SR-20071219	**Units:**	ug/L
Lab Code:	J0706110-011	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	ND	U	1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	104	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	103	75-120	12/26/07	Acceptable
Dibromofluoromethane	100	82-116	12/26/07	Acceptable
Toluene-d8	105	88-117	12/26/07	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/17/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-DUP01-20071217	**Units:**	ug/L
Lab Code:	J0706110-012	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	**1.5**		1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	105	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	100	75-120	12/26/07	Acceptable
Dibromofluoromethane	101	82-116	12/26/07	Acceptable
Toluene-d8	105	88-117	12/26/07	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/19/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	TRIP BLANK	**Units:**	ug/L
Lab Code:	J0706110-013	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	ND	U	1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	105	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	102	75-120	12/26/07	Acceptable
Dibromofluoromethane	101	82-116	12/26/07	Acceptable
Toluene-d8	105	88-117	12/26/07	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Volatile Organic Compounds by GC/MS

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	JWG0704236-4	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	ND	U	1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	104	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	102	75-120	12/26/07	Acceptable
Dibromofluoromethane	101	82-116	12/26/07	Acceptable
Toluene-d8	106	88-117	12/26/07	Acceptable

Comments:

Client: Tetra Tech NUS,Inc.
Project: 81-ABC/112G00746
Sample Matrix: Water

Service Request: J0706110

Surrogate Recovery Summary
Volatile Organic Compounds by GC/MS

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: PERCENT
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3	Sur4
CEF-081-19I-20071217	J0706110-001	106	102	101	105
CEF-081-04I-20071217	J0706110-002	103	103	100	106
CEF-081-09S-20071217	J0706110-003	104	101	101	105
CEF-081-18I-20071217	J0706110-004	104	102	101	106
CEF-081-22I-20071218	J0706110-005	103	101	101	105
CEF-081-21I-20071218	J0706110-006	103	102	100	105
CEF-081-16S-20071218	J0706110-007	105	103	102	105
CEF-081-17S-20071218	J0706110-008	104	101	100	105
CEF-081-14S-20071218	J0706110-009	105	102	100	105
CEF-081-15S-20071218	J0706110-010	105	102	101	105
CEF-081-08SR-20071219	J0706110-011	104	103	100	105
CEF-081-DUP01-20071217	J0706110-012	105	100	101	105
TRIP BLANK	J0706110-013	105	102	101	105
Method Blank	JWG0704236-4	104	102	101	106
CEF-081-DUP01-20071217MS	JWG0704236-1	107	98	103	106
CEF-081-DUP01-20071217DMS	JWG0704236-2	108	101	102	105
Lab Control Sample	JWG0704236-3	105	99	101	105

Surrogate Recovery Control Limits (%)

Sur1 =	1,2-Dichloroethane-d4	71-122
Sur2 =	4-Bromofluorobenzene	75-120
Sur3 =	Dibromofluoromethane	82-116
Sur4 =	Toluene-d8	88-117

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Tetra Tech NUS,Inc.
Project: 81-ABC/112G00746

Service Request: J0706110
Date Analyzed: 12/26/2007
Time Analyzed: 12:50

Internal Standard Area and RT Summary
Volatile Organic Compounds by GC/MS

File ID: \\JACKSONVILLE1\ACQUDATA\MS52\DATA\MS527N26.B\1
Instrument ID: MS52.i
Analysis Method: 8260B

Lab Code: JWG0704237-2
Analysis Lot: JWG0704237
Column : DB-VRX

		1,4-Dichlorobenzene-d4		Chlorobenzene-d5		Fluorobenzene	
		Area	RT	Area	RT	Area	RT
	Results ==>	281,356	11.21	300,963	8.81	725,152	5.45
	Upper Limit ==>	562,712	11.71	601,926	9.31	1,450,304	5.95
	Lower Limit ==>	140,678	10.71	150,482	8.31	362,576	4.95
	ICAL Result ==>	257,803	11.21	277,276	8.81	667,966	5.46
Associated Analyses							
Lab Control Sample	JWG0704236-3	277,742	11.21	299,474	8.81	726,356	5.46
Method Blank	JWG0704236-4	268,147	11.21	295,201	8.81	716,798	5.46
CEF-081-19I-20071217	J0706110-001	270,021	11.21	296,815	8.81	718,760	5.46
CEF-081-04I-20071217	J0706110-002	264,286	11.21	292,583	8.81	713,622	5.46
CEF-081-09S-20071217	J0706110-003	274,260	11.21	296,473	8.81	719,439	5.46
CEF-081-18I-20071217	J0706110-004	272,885	11.21	297,527	8.81	731,152	5.46
CEF-081-22I-20071218	J0706110-005	272,059	11.21	300,929	8.81	726,747	5.46
CEF-081-21I-20071218	J0706110-006	268,660	11.22	297,670	8.81	725,710	5.46
CEF-081-16S-20071218	J0706110-007	265,832	11.21	294,063	8.80	709,855	5.46
CEF-081-17S-20071218	J0706110-008	270,174	11.21	295,233	8.81	718,328	5.45
CEF-081-14S-20071218	J0706110-009	269,522	11.21	297,864	8.81	716,836	5.46
CEF-081-15S-20071218	J0706110-010	267,695	11.21	298,213	8.81	719,994	5.46
CEF-081-08SR-20071219	J0706110-011	267,233	11.21	297,570	8.81	722,651	5.46
CEF-081-DUP01-20071217	J0706110-012	272,403	11.21	293,453	8.81	716,176	5.46
TRIP BLANK	J0706110-013	269,863	11.21	296,743	8.81	717,528	5.45
CEF-081-DUP01-20071217MS	JWG0704236-1	278,613	11.21	295,209	8.81	714,624	5.45
CEF-081-DUP01-20071217DMS	JWG0704236-2	275,130	11.21	299,002	8.81	714,588	5.46

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Extracted:**	12/26/2007
Sample Matrix:	Water	**Date Analyzed:**	12/26/2007 - 12/27/2007

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-DUP01-20071217	**Units:**	ug/L
Lab Code:	J0706110-012	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B	**Extraction Lot:**	JWG0704236

		CEF-081-DUP01-20071217 MS JWG0704236-1 Matrix Spike			CEF-081-DUP01-20071217 DMS JWG0704236-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Isopropylbenzene	1.5	22.2	20.0	103	22.8	20.0	106	82-120	3	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: Tetra Tech NUS,Inc.
Project: 81-ABC/112G00746
Sample Matrix: Water

Service Request: J0706110
Date Extracted: 12/26/2007
Date Analyzed: 12/26/2007

Lab Control Spike Summary
Volatile Organic Compounds by GC/MS

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: JWG0704236

	Lab Control Sample JWG0704236-3 Lab Control Spike			
Analyte Name	**Result**	**Expected**	**%Rec**	**%Rec Limits**
Isopropylbenzene	20.6	20.0	103	83-122

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: Tetra Tech NUS,Inc.
Project: 81-ABC/112G00746
Sample Matrix: Water

Service Request: J0706110
Date Extracted: 12/26/2007
Date Analyzed: 12/26/2007
Time Analyzed: 14:19

Method Blank Summary
Volatile Organic Compounds by GC/MS

Sample Name: Method Blank
Lab Code: JWG0704236-4

File ID: J:\MS52\DATA\MS527N26.B\1226-22.D
Instrument ID: MS52.i

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low
Extraction Lot: JWG0704236

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	JWG0704236-3	J:\MS52\DATA\MS527N26.B\1226-20.D	12/26/07	13:25
CEF-081-19I-20071217	J0706110-001	J:\MS52\DATA\MS527N26.B\1226-30.D	12/26/07	17:52
CEF-081-04I-20071217	J0706110-002	J:\MS52\DATA\MS527N26.B\1226-31.D	12/26/07	18:19
CEF-081-09S-20071217	J0706110-003	J:\MS52\DATA\MS527N26.B\1226-32.D	12/26/07	18:45
CEF-081-18I-20071217	J0706110-004	J:\MS52\DATA\MS527N26.B\1226-33.D	12/26/07	19:12
CEF-081-22I-20071218	J0706110-005	J:\MS52\DATA\MS527N26.B\1226-34.D	12/26/07	19:39
CEF-081-21I-20071218	J0706110-006	J:\MS52\DATA\MS527N26.B\1226-35.D	12/26/07	20:06
CEF-081-16S-20071218	J0706110-007	J:\MS52\DATA\MS527N26.B\1226-36.D	12/26/07	20:32
CEF-081-17S-20071218	J0706110-008	J:\MS52\DATA\MS527N26.B\1226-37.D	12/26/07	21:00
CEF-081-14S-20071218	J0706110-009	J:\MS52\DATA\MS527N26.B\1226-38.D	12/26/07	21:26
CEF-081-15S-20071218	J0706110-010	J:\MS52\DATA\MS527N26.B\1226-39.D	12/26/07	21:53
CEF-081-08SR-20071219	J0706110-011	J:\MS52\DATA\MS527N26.B\1226-40.D	12/26/07	22:20
CEF-081-DUP01-20071217	J0706110-012	J:\MS52\DATA\MS527N26.B\1226-41.D	12/26/07	22:47
TRIP BLANK	J0706110-013	J:\MS52\DATA\MS527N26.B\1226-42.D	12/26/07	23:14
CEF-081-DUP01-20071217MS	JWG0704236-1	J:\MS52\DATA\MS527N26.B\1226-43.D	12/26/07	23:40
CEF-081-DUP01-20071217DMS	JWG0704236-2	J:\MS52\DATA\MS527N26.B\1226-44.D	12/27/07	00:07

QA/QC Report

Client: Tetra Tech NUS,Inc.
Project: 81-ABC/112G00746
Sample Matrix: Water

Service Request: J0706110
Date Extracted: 12/26/2007
Date Analyzed: 12/26/2007
Time Analyzed: 13:25

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Sample Name: Lab Control Sample
Lab Code: JWG0704236-3

File ID: J:\MS52\DATA\MS527N26.B\1226-20.D
Instrument ID: MS52.i

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low
Extraction Lot: JWG0704236

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
CEF-081-21I-20071218	J0706110-006	J:\MS52\DATA\MS527N26.B\1226-35.D	12/26/07	20:06
CEF-081-16S-20071218	J0706110-007	J:\MS52\DATA\MS527N26.B\1226-36.D	12/26/07	20:32
CEF-081-17S-20071218	J0706110-008	J:\MS52\DATA\MS527N26.B\1226-37.D	12/26/07	21:00
CEF-081-14S-20071218	J0706110-009	J:\MS52\DATA\MS527N26.B\1226-38.D	12/26/07	21:26
CEF-081-15S-20071218	J0706110-010	J:\MS52\DATA\MS527N26.B\1226-39.D	12/26/07	21:53
CEF-081-08SR-20071219	J0706110-011	J:\MS52\DATA\MS527N26.B\1226-40.D	12/26/07	22:20
CEF-081-DUP01-20071217	J0706110-012	J:\MS52\DATA\MS527N26.B\1226-41.D	12/26/07	22:47
TRIP BLANK	J0706110-013	J:\MS52\DATA\MS527N26.B\1226-42.D	12/26/07	23:14
CEF-081-DUP01-20071217MS	JWG0704236-1	J:\MS52\DATA\MS527N26.B\1226-43.D	12/26/07	23:40
Method Blank	JWG0704236-4	J:\MS52\DATA\MS527N26.B\1226-22.D	12/26/07	14:19
CEF-081-19I-20071217	J0706110-001	J:\MS52\DATA\MS527N26.B\1226-30.D	12/26/07	17:52
CEF-081-04I-20071217	J0706110-002	J:\MS52\DATA\MS527N26.B\1226-31.D	12/26/07	18:19
CEF-081-09S-20071217	J0706110-003	J:\MS52\DATA\MS527N26.B\1226-32.D	12/26/07	18:45
CEF-081-18I-20071217	J0706110-004	J:\MS52\DATA\MS527N26.B\1226-33.D	12/26/07	19:12
CEF-081-22I-20071218	J0706110-005	J:\MS52\DATA\MS527N26.B\1226-34.D	12/26/07	19:39
CEF-081-DUP01-20071217DMS	JWG0704236-2	J:\MS52\DATA\MS527N26.B\1226-44.D	12/27/07	00:07

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: Tetra Tech NUS,Inc.
Project: 81-ABC/112G00746

Service Request: J0706110
Date Analyzed: 12/26/2007
Time Analyzed: 12:27

Tune Summary
Volatile Organic Compounds by GC/MS

File ID: \\JACKSONVILLE1\ACQUDATA\MS52\DATA\MS527N26.B\1226-18.D
Instrument ID: MS52.i
Column:

Analysis Method: 8260B
Analysis Lot: JWG0704237

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
50	95	15	40	21.5	10783	PASS
75	95	30	60	47.1	23616	PASS
95	95	100	100	100.0	50088	PASS
96	95	5	9	7.1	3550	PASS
173	174	0	2	0.4	192	PASS
174	95	50	120	86.2	43152	PASS
175	174	5	9	7.4	3197	PASS
176	174	95	101	97.2	41944	PASS
177	176	5	9	6.8	2841	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	JWG0704237-2	J:\MS52\DATA\MS527N26.B\1226-1	12/26/2007	12:50	
Lab Control Sample	JWG0704236-3	J:\MS52\DATA\MS527N26.B\1226-2	12/26/2007	13:25	
Method Blank	JWG0704236-4	J:\MS52\DATA\MS527N26.B\1226-2	12/26/2007	14:19	
CEF-081-19I-20071217	J0706110-001	J:\MS52\DATA\MS527N26.B\1226-3	12/26/2007	17:52	
CEF-081-04I-20071217	J0706110-002	J:\MS52\DATA\MS527N26.B\1226-3	12/26/2007	18:19	
CEF-081-09S-20071217	J0706110-003	J:\MS52\DATA\MS527N26.B\1226-3	12/26/2007	18:45	
CEF-081-18I-20071217	J0706110-004	J:\MS52\DATA\MS527N26.B\1226-3	12/26/2007	19:12	
CEF-081-22I-20071218	J0706110-005	J:\MS52\DATA\MS527N26.B\1226-3	12/26/2007	19:39	
CEF-081-21I-20071218	J0706110-006	J:\MS52\DATA\MS527N26.B\1226-3	12/26/2007	20:06	
CEF-081-16S-20071218	J0706110-007	J:\MS52\DATA\MS527N26.B\1226-3	12/26/2007	20:32	
CEF-081-17S-20071218	J0706110-008	J:\MS52\DATA\MS527N26.B\1226-3	12/26/2007	21:00	
CEF-081-14S-20071218	J0706110-009	J:\MS52\DATA\MS527N26.B\1226-3	12/26/2007	21:26	
CEF-081-15S-20071218	J0706110-010	J:\MS52\DATA\MS527N26.B\1226-3	12/26/2007	21:53	
CEF-081-08SR-20071219	J0706110-011	J:\MS52\DATA\MS527N26.B\1226-4	12/26/2007	22:20	
CEF-081-DUP01-20071217	J0706110-012	J:\MS52\DATA\MS527N26.B\1226-4	12/26/2007	22:47	
TRIP BLANK	J0706110-013	J:\MS52\DATA\MS527N26.B\1226-4	12/26/2007	23:14	
CEF-081-DUP01-20071217MS	JWG0704236-1	J:\MS52\DATA\MS527N26.B\1226-4	12/26/2007	23:40	
CEF-081-DUP01-20071217DMS	JWG0704236-2	J:\MS52\DATA\MS527N26.B\1226-4	12/27/2007	00:07	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: Tetra Tech NUS,Inc. **Service Request:** J0706110
Project: 81-ABC/112G00746 **ICAL Date:** 12/20/2007

Initial Calibration Summary
Volatile Organic Compounds by GC/MS

ICAL ID: CAL1298 **Column:** DB-VRX
Instrument ID: MS52.i

Level ID	File ID	Level ID	File ID
A	\\Jacksonville1\ACQUDATA\MS52\DATA\MS527N20.B\122	E	\\Jacksonville1\ACQUDATA\MS52\DATA\MS527N20.B\122
B	\\Jacksonville1\ACQUDATA\MS52\DATA\MS527N20.B\122	F	\\Jacksonville1\ACQUDATA\MS52\DATA\MS527N20.B\122
C	\\Jacksonville1\ACQUDATA\MS52\DATA\MS527N20.B\122	G	\\Jacksonville1\ACQUDATA\MS52\DATA\MS527N20.B\122
D	\\Jacksonville1\ACQUDATA\MS52\DATA\MS527N20.B\122	H	\\Jacksonville1\ACQUDATA\MS52\DATA\MS527N20.B\122

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
1,2-Dichloroethane-d4							C	10	0.268	D	20	0.257	E	50	0.278
	F	100	0.273	G	150	0.275	H	200	0.267						
4-Bromofluorobenzene							C	10	0.850	D	20	0.823	E	50	0.848
	F	100	0.835	G	150	0.820	H	200	0.797						
Dibromofluoromethane							C	10	0.200	D	20	0.209	E	50	0.224
	F	100	0.227	G	150	0.228	H	200	0.225						
Isopropylbenzene	A	1.0	2.76	B	2.0	2.34	C	5.0	2.67	D	20	2.63	E	50	2.51
	F	100	2.50	G	150	2.39	H	200	2.27						
Toluene-d8							C	10	1.93	D	20	1.93	E	50	2.01
	F	100	1.96	G	150	1.87	H	200	1.78						
‡ Ethylbenzene	A	1.0	2.91	B	2.0	2.60	C	5.0	2.77	D	20	2.85	E	50	2.71
	F	100	2.68	G	150	2.53	H	200	2.36						
‡ Toluene	A	1.0	2.74	B	2.0	2.45	C	5.0	2.64	D	20	2.60	E	50	2.48
	F	100	2.45	G	150	2.32	H	200	2.16						
† Chlorobenzene	A	1.0	1.85	B	2.0	1.67	C	5.0	1.73	D	20	1.68	E	50	1.61
	F	100	1.58	G	150	1.49	H	200	1.40						
‡ Chloroform	A	1.0	0.471	B	2.0	0.403	C	5.0	0.458	D	20	0.451	E	50	0.446
	F	100	0.464	G	150	0.461	H	200	0.451						
† Chloromethane	A	1.0	0.486	B	2.0	0.406	C	5.0	0.451	D	20	0.456	E	50	0.453
	F	100	0.428	G	150	0.398	H	200	0.354						
‡ Vinyl Chloride	A	1.0	0.356	B	2.0	0.271	C	5.0	0.322	D	20	0.348	E	50	0.340
	F	100	0.331	G	150	0.319	H	200	0.282						
† Bromoform	A	1.0	0.123	B	2.0	0.101	C	5.0	0.138	D	20	0.192	E	50	0.262
	F	100	0.313	G	150	0.338	H	200	0.333						
† 1,1-Dichloroethane	A	1.0	0.541	B	2.0	0.482	C	5.0	0.523	D	20	0.527	E	50	0.518
	F	100	0.527	G	150	0.523	H	200	0.510						
‡ 1,1-Dichloroethene	A	1.0	0.420	B	2.0	0.342	C	5.0	0.386	D	20	0.419	E	50	0.405
	F	100	0.423	G	150	0.413	H	200	0.407						

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: Tetra Tech NUS,Inc.
Project: 81-ABC/112G00746

Service Request: J0706110
ICAL Date: 12/20/2007

Initial Calibration Summary
Volatile Organic Compounds by GC/MS

ICAL ID: CAL1298
Instrument ID: MS52.i

Column: DB-VRX

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
‡ 1,2-Dichloropropane	A	1.0	0.306	B	2.0	0.270	C	5.0	0.292	D	20	0.290	E	50	0.289
	F	100	0.294	G	150	0.292	H	200	0.287						
† 1,1,2,2-Tetrachloroethane	A	1.0	0.619	B	2.0	0.548	C	5.0	0.631	D	20	0.632	E	50	0.632
	F	100	0.593	G	150	0.582	H	200	0.549						

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: Tetra Tech NUS,Inc.
Project: 81-ABC/112G00746

Service Request: J0706110
ICAL Date: 12/20/2007

Initial Calibration Summary
Volatile Organic Compounds by GC/MS

ICAL ID: CAL1298
Instrument ID: MS52.i

Column: DB-VRX

		Calibration Evaluation					RRF Evaluation		
Analyte Name	Compound Type	Fit Type	Eval.	Eval. Result	Q	Control Criteria	Average RRF	Q	Minimum RRF
1,2-Dichloroethane-d4	SURR	AverageRF	% RSD	2.8		≤ 15	0.270		
4-Bromofluorobenzene	SURR	AverageRF	% RSD	2.4		≤ 15	0.829		
Dibromofluoromethane	SURR	AverageRF	% RSD	5.3		≤ 15	0.219		
Isopropylbenzene	MS	AverageRF	% RSD	6.7		≤ 15	2.51		0.01
Toluene-d8	SURR	AverageRF	% RSD	4.2		≤ 15	1.91		
‡ Ethylbenzene	MS	AverageRF	% RSD	6.7		≤ 15	2.68		0.01
‡ Toluene	MS	AverageRF	% RSD	7.5		≤ 15	2.48		0.01
† Chlorobenzene	MS	AverageRF	% RSD	8.6		≤ 15	1.62		0.3
‡ Chloroform	MS	AverageRF	% RSD	4.7		≤ 15	0.451		0.01
† Chloromethane	MS	AverageRF	% RSD	9.7		≤ 15	0.429		0.1
‡ Vinyl Chloride	MS	AverageRF	% RSD	9.4		≤ 15	0.321		0.01
† Bromoform	MS	Linear	R2	0.997		≥ 0.99	0.225		0.1
† 1,1-Dichloroethane	MS	AverageRF	% RSD	3.3		≤ 15	0.519		0.1
‡ 1,1-Dichloroethene	MS	AverageRF	% RSD	6.7		≤ 15	0.402		0.01
‡ 1,2-Dichloropropane	MS	AverageRF	% RSD	3.4		≤ 15	0.290		0.01
† 1,1,2,2-Tetrachloroethane	MS	AverageRF	% RSD	6.0		≤ 15	0.598		0.3

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: Tetra Tech NUS,Inc.
Project: 81-ABC/112G00746

Service Request: J0706110
ICAL Date: 12/20/2007
Date Analyzed: 12/20/2007

Second Source Calibration Verification
Volatile Organic Compounds by GC/MS

ICAL Type: Internal Standard
Analysis Method: 8260B

ICAL ID: CAL1298
Units: ug/L

File ID: \\Jacksonville1\ACQUDATA\MS52\DATA\MS527N20.B\1220-12.D

Column ID: DB-VRX

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Isopropylbenzene	50	53	2.51	2.67	6	NA	± 30 %	AverageRF
† 1,1,2,2-Tetrachloroethane	50	54	0.598	0.646	8	NA	± 30 %	AverageRF
† 1,1-Dichloroethane	50	52	0.519	0.541	4	NA	± 30 %	AverageRF
‡ 1,1-Dichloroethene	50	58	0.402	0.466	16	NA	± 30 %	AverageRF
‡ 1,2-Dichloropropane	50	52	0.290	0.300	3	NA	± 30 %	AverageRF
† Bromoform	50	53	0.225	0.326	NA	5	± 30 %	Linear
† Chlorobenzene	50	51	1.62	1.67	3	NA	± 30 %	AverageRF
‡ Chloroform	50	51	0.451	0.461	2	NA	± 30 %	AverageRF
† Chloromethane	50	59	0.429	0.504	18	NA	± 30 %	AverageRF
‡ Ethylbenzene	50	54	2.68	2.87	7	NA	± 30 %	AverageRF
‡ Toluene	50	53	2.48	2.60	5	NA	± 30 %	AverageRF
‡ Vinyl Chloride	50	58	0.321	0.369	15	NA	± 30 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: Tetra Tech NUS,Inc.
Project: 81-ABC/112G00746

Service Request: J0706110
Date Analyzed: 12/26/2007

Continuing Calibration Verification Summary
Volatile Organic Compounds by GC/MS

ICAL Type: Internal Standard
Analysis Method: 8260B

ICAL Date: 12/20/2007
ICAL ID: CAL1298
Analysis Lot: JWG0704237
Units: ug/L

File ID: \\JACKSONVILLE1\ACQUDATA\MS52\DATA\MS527N26.B\1226-19.D

Column ID: DB-VRX

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
1,2-Dichloroethane-d4	50	51		0.270	0.274	1	NA	± 30 %	AverageRF
4-Bromofluorobenzene	50	49		0.829	0.818	-1	NA	± 30 %	AverageRF
Dibromofluoromethane	50	50		0.219	0.219	0	NA	± 30 %	AverageRF
Isopropylbenzene	50	47	0.01	2.51	2.38	-5	NA	± 30 %	AverageRF
Toluene-d8	50	53		1.91	2.01	5	NA	± 30 %	AverageRF
‡ Ethylbenzene	50	48	0.01	2.68	2.59	-3	NA	± 20 %	AverageRF
‡ Toluene	50	48	0.01	2.48	2.38	-4	NA	± 20 %	AverageRF
† Chlorobenzene	50	47	0.3	1.62	1.51	-7	NA	± 30 %	AverageRF
‡ Chloroform	50	48	0.01	0.451	0.434	-4	NA	± 20 %	AverageRF
† Chloromethane	50	50	0.1	0.429	0.428	0	NA	± 30 %	AverageRF
‡ Vinyl Chloride	50	48	0.01	0.321	0.308	-4	NA	± 20 %	AverageRF
† Bromoform	50	48	0.1	0.225	0.296	NA	-3	± 30 %	Linear
† 1,1-Dichloroethane	50	48	0.1	0.519	0.495	-5	NA	± 30 %	AverageRF
‡ 1,1-Dichloroethene	50	46	0.01	0.402	0.373	-7	NA	± 20 %	AverageRF
‡ 1,2-Dichloropropane	50	48	0.01	0.290	0.278	-4	NA	± 20 %	AverageRF
† 1,1,2,2-Tetrachloroethane	50	49	0.3	0.598	0.583	-3	NA	± 30 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: Tetra Tech NUS,Inc.
Project: 81-ABC/112G00746

Service Request: J0706110

Analysis Run Log
Volatile Organic Compounds by GC/MS

Analysis Method: 8260B

Analysis Lot: JWG0704237
Instrument ID: MS52.i
Column: DB-VRX

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
\1226-18.D	GC/MS Tuning - Bromofluorobenzene	JWG0704237-1	12/26/2007	12:27		12/26/2007	12:27
\1226-19.D	Continuing Calibration Verification	JWG0704237-2	12/26/2007	12:50		12/26/2007	12:50
\1226-20.D	Lab Control Sample	JWG0704236-3	12/26/2007	13:25		12/26/2007	13:25
\1226-22.D	Method Blank	JWG0704236-4	12/26/2007	14:19		12/26/2007	14:19
\1226-23.D	ZZZZZZ	ZZZZZZ	12/26/2007	14:46		12/26/2007	14:46
\1226-24.D	ZZZZZZ	ZZZZZZ	12/26/2007	15:12		12/26/2007	15:12
\1226-25.D	ZZZZZZ	ZZZZZZ	12/26/2007	15:39		12/26/2007	15:39
\1226-26.D	ZZZZZZ	ZZZZZZ	12/26/2007	16:06		12/26/2007	16:06
\1226-27.D	ZZZZZZ	ZZZZZZ	12/26/2007	16:33		12/26/2007	16:33
\1226-28.D	ZZZZZZ	ZZZZZZ	12/26/2007	16:59		12/26/2007	16:59
\1226-29.D	ZZZZZZ	ZZZZZZ	12/26/2007	17:25		12/26/2007	17:25
\1226-30.D	CEF-081-19I-20071217	J0706110-001	12/26/2007	17:52		12/26/2007	17:52
\1226-31.D	CEF-081-04I-20071217	J0706110-002	12/26/2007	18:19		12/26/2007	18:19
\1226-32.D	CEF-081-09S-20071217	J0706110-003	12/26/2007	18:45		12/26/2007	18:45
\1226-33.D	CEF-081-18I-20071217	J0706110-004	12/26/2007	19:12		12/26/2007	19:12
\1226-34.D	CEF-081-22I-20071218	J0706110-005	12/26/2007	19:39		12/26/2007	19:39
\1226-35.D	CEF-081-21I-20071218	J0706110-006	12/26/2007	20:06		12/26/2007	20:06
\1226-36.D	CEF-081-16S-20071218	J0706110-007	12/26/2007	20:32		12/26/2007	20:32
\1226-37.D	CEF-081-17S-20071218	J0706110-008	12/26/2007	21:00		12/26/2007	21:00
\1226-38.D	CEF-081-14S-20071218	J0706110-009	12/26/2007	21:26		12/26/2007	21:26
\1226-39.D	CEF-081-15S-20071218	J0706110-010	12/26/2007	21:53		12/26/2007	21:53
\1226-40.D	CEF-081-08SR-20071219	J0706110-011	12/26/2007	22:20		12/26/2007	22:20
\1226-41.D	CEF-081-DUP01-20071217	J0706110-012	12/26/2007	22:47		12/26/2007	22:47
\1226-42.D	TRIP BLANK	J0706110-013	12/26/2007	23:14		12/26/2007	23:14
\1226-43.D	CEF-081-DUP01-20071217MS	JWG0704236-1	12/26/2007	23:40		12/26/2007	23:40
\1226-44.D	CEF-081-DUP01-20071217DMS	JWG0704236-2	12/27/2007	00:07		12/27/2007	00:07

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: Tetra Tech NUS,Inc.
Project: 81-ABC/112G00746
Sample Matrix: Water

Service Request: J0706110
Date Extracted: 12/26/2007

Extraction Prep Log
Volatile Organic Compounds by GC/MS

Extraction Method: EPA 5030B
Analysis Method: 8260B

Extraction Lot: JWG0704236
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
CEF-081-19I-20071217	J0706110-001	12/17/07	12/19/07	5ml	5ml	NA	
CEF-081-04I-20071217	J0706110-002	12/17/07	12/19/07	5ml	5ml	NA	
CEF-081-09S-20071217	J0706110-003	12/17/07	12/19/07	5ml	5ml	NA	
CEF-081-18I-20071217	J0706110-004	12/17/07	12/19/07	5ml	5ml	NA	
CEF-081-22I-20071218	J0706110-005	12/18/07	12/19/07	5ml	5ml	NA	
CEF-081-21I-20071218	J0706110-006	12/18/07	12/19/07	5ml	5ml	NA	
CEF-081-16S-20071218	J0706110-007	12/18/07	12/19/07	5ml	5ml	NA	
CEF-081-17S-20071218	J0706110-008	12/18/07	12/19/07	5ml	5ml	NA	
CEF-081-14S-20071218	J0706110-009	12/18/07	12/19/07	5ml	5ml	NA	
CEF-081-15S-20071218	J0706110-010	12/18/07	12/19/07	5ml	5ml	NA	
CEF-081-08SR-20071219	J0706110-011	12/19/07	12/19/07	5ml	5ml	NA	
CEF-081-DUP01-20071217	J0706110-012	12/17/07	12/19/07	5ml	5ml	NA	
TRIP BLANK	J0706110-013	12/19/07	12/19/07	5ml	5ml	NA	
Method Blank	JWG0704236-4	NA	NA	5ml	5ml	NA	
CEF-081-DUP01-20071217M	JWG0704236-1	12/17/07	12/19/07	5ml	5ml	NA	
CEF-081-DUP01-20071217D	JWG0704236-2	12/17/07	12/19/07	5ml	5ml	NA	
Lab Control Sample	JWG0704236-3	NA	NA	5ml	5ml	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Validation Package

Organic Analysis:
Volatile Organic Compounds by GC/MS

Validation Package

Organic Analysis:
Volatile Organic Compounds by GC/MS

Validation Package

QC Reports

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Tetra Tech NUS,Inc.
Project: 81-ABC/112G00746
Sample Matrix: Water

Service Request: J0706110

Surrogate Recovery Summary
Volatile Organic Compounds by GC/MS

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: PERCENT
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3	Sur4
CEF-081-19I-20071217	J0706110-001	106	102	101	105
CEF-081-04I-20071217	J0706110-002	103	103	100	106
CEF-081-09S-20071217	J0706110-003	104	101	101	105
CEF-081-18I-20071217	J0706110-004	104	102	101	106
CEF-081-22I-20071218	J0706110-005	103	101	101	105
CEF-081-21I-20071218	J0706110-006	103	102	100	105
CEF-081-16S-20071218	J0706110-007	105	103	102	105
CEF-081-17S-20071218	J0706110-008	104	101	100	105
CEF-081-14S-20071218	J0706110-009	105	102	100	105
CEF-081-15S-20071218	J0706110-010	105	102	101	105
CEF-081-08SR-20071219	J0706110-011	104	103	100	105
CEF-081-DUP01-20071217	J0706110-012	105	100	101	105
TRIP BLANK	J0706110-013	105	102	101	105
Method Blank	JWG0704236-4	104	102	101	106
CEF-081-DUP01-20071217MS	JWG0704236-1	107	98	103	106
CEF-081-DUP01-20071217DMS	JWG0704236-2	108	101	102	105
Lab Control Sample	JWG0704236-3	105	99	101	105

Surrogate Recovery Control Limits (%)

Sur1 =	1,2-Dichloroethane-d4	71-122
Sur2 =	4-Bromofluorobenzene	75-120
Sur3 =	Dibromofluoromethane	82-116
Sur4 =	Toluene-d8	88-117

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Client: Tetra Tech NUS,Inc.
Project: 81-ABC/112G00746

Service Request: J0706110
Date Analyzed: 12/26/2007
Time Analyzed: 12:50

Internal Standard Area and RT Summary
Volatile Organic Compounds by GC/MS

File ID: \\JACKSONVILLE1\ACQUDATA\MS52\DATA\MS527N26.B\1
Instrument ID: MS52.i
Analysis Method: 8260B

Lab Code: JWG0704237-2
Analysis Lot: JWG0704237
Column : DB-VRX

		1,4-Dichlorobenzene-d4		Chlorobenzene-d5		Fluorobenzene	
		Area	RT	Area	RT	Area	RT
	Results ==>	281,356	11.21	300,963	8.81	725,152	5.45
	Upper Limit ==>	562,712	11.71	601,926	9.31	1,450,304	5.95
	Lower Limit ==>	140,678	10.71	150,482	8.31	362,576	4.95
	ICAL Result ==>	257,803	11.21	277,276	8.81	667,966	5.46
Associated Analyses							
Lab Control Sample	JWG0704236-3	277,742	11.21	299,474	8.81	726,356	5.46
Method Blank	JWG0704236-4	268,147	11.21	295,201	8.81	716,798	5.46
CEF-081-19I-20071217	J0706110-001	270,021	11.21	296,815	8.81	718,760	5.46
CEF-081-04I-20071217	J0706110-002	264,286	11.21	292,583	8.81	713,622	5.46
CEF-081-09S-20071217	J0706110-003	274,260	11.21	296,473	8.81	719,439	5.46
CEF-081-18I-20071217	J0706110-004	272,885	11.21	297,527	8.81	731,152	5.46
CEF-081-22I-20071218	J0706110-005	272,059	11.21	300,929	8.81	726,747	5.46
CEF-081-21I-20071218	J0706110-006	268,660	11.22	297,670	8.81	725,710	5.46
CEF-081-16S-20071218	J0706110-007	265,832	11.21	294,063	8.80	709,855	5.46
CEF-081-17S-20071218	J0706110-008	270,174	11.21	295,233	8.81	718,328	5.45
CEF-081-14S-20071218	J0706110-009	269,522	11.21	297,864	8.81	716,836	5.46
CEF-081-15S-20071218	J0706110-010	267,695	11.21	298,213	8.81	719,994	5.46
CEF-081-08SR-20071219	J0706110-011	267,233	11.21	297,570	8.81	722,651	5.46
CEF-081-DUP01-20071217	J0706110-012	272,403	11.21	293,453	8.81	716,176	5.46
TRIP BLANK	J0706110-013	269,863	11.21	296,743	8.81	717,528	5.45
CEF-081-DUP01-20071217MS	JWG0704236-1	278,613	11.21	295,209	8.81	714,624	5.45
CEF-081-DUP01-20071217DMS	JWG0704236-2	275,130	11.21	299,002	8.81	714,588	5.46

Results flagged with an asterisk (*) indicate values outside control criteria.

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Extracted:**	12/26/2007
Sample Matrix:	Water	**Date Analyzed:**	12/26/2007 - 12/27/2007

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-DUP01-20071217	**Units:**	ug/L
Lab Code:	J0706110-012	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B	**Extraction Lot:**	JWG0704236

		CEF-081-DUP01-20071217 MS JWG0704236-1 Matrix Spike			CEF-081-DUP01-20071217 DMS JWG0704236-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Isopropylbenzene	1.5	22.2	20.0	103	22.8	20.0	106	82-120	3	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Extracted:**	12/26/2007
Sample Matrix:	Water	**Date Analyzed:**	12/26/2007

Lab Control Spike Summary
Volatile Organic Compounds by GC/MS

Extraction Method:	EPA 5030B	**Units:**	ug/L
Analysis Method:	8260B	**Basis:**	NA
		Level:	Low
		Extraction Lot:	JWG0704236

	Lab Control Sample JWG0704236-3 Lab Control Spike			
Analyte Name	**Result**	**Expected**	**%Rec**	**%Rec Limits**
Isopropylbenzene	20.6	20.0	103	83-122

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Tetra Tech NUS,Inc.
Project: 81-ABC/112G00746
Sample Matrix: Water

Service Request: J0706110
Date Extracted: 12/26/2007
Date Analyzed: 12/26/2007
Time Analyzed: 14:19

Method Blank Summary
Volatile Organic Compounds by GC/MS

Sample Name: Method Blank
Lab Code: JWG0704236-4

File ID: J:\MS52\DATA\MS527N26.B\1226-22.D
Instrument ID: MS52.i

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low
Extraction Lot: JWG0704236

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	JWG0704236-3	J:\MS52\DATA\MS527N26.B\1226-20.D	12/26/07	13:25
CEF-081-19I-20071217	J0706110-001	J:\MS52\DATA\MS527N26.B\1226-30.D	12/26/07	17:52
CEF-081-04I-20071217	J0706110-002	J:\MS52\DATA\MS527N26.B\1226-31.D	12/26/07	18:19
CEF-081-09S-20071217	J0706110-003	J:\MS52\DATA\MS527N26.B\1226-32.D	12/26/07	18:45
CEF-081-18I-20071217	J0706110-004	J:\MS52\DATA\MS527N26.B\1226-33.D	12/26/07	19:12
CEF-081-22I-20071218	J0706110-005	J:\MS52\DATA\MS527N26.B\1226-34.D	12/26/07	19:39
CEF-081-21I-20071218	J0706110-006	J:\MS52\DATA\MS527N26.B\1226-35.D	12/26/07	20:06
CEF-081-16S-20071218	J0706110-007	J:\MS52\DATA\MS527N26.B\1226-36.D	12/26/07	20:32
CEF-081-17S-20071218	J0706110-008	J:\MS52\DATA\MS527N26.B\1226-37.D	12/26/07	21:00
CEF-081-14S-20071218	J0706110-009	J:\MS52\DATA\MS527N26.B\1226-38.D	12/26/07	21:26
CEF-081-15S-20071218	J0706110-010	J:\MS52\DATA\MS527N26.B\1226-39.D	12/26/07	21:53
CEF-081-08SR-20071219	J0706110-011	J:\MS52\DATA\MS527N26.B\1226-40.D	12/26/07	22:20
CEF-081-DUP01-20071217	J0706110-012	J:\MS52\DATA\MS527N26.B\1226-41.D	12/26/07	22:47
TRIP BLANK	J0706110-013	J:\MS52\DATA\MS527N26.B\1226-42.D	12/26/07	23:14
CEF-081-DUP01-20071217MS	JWG0704236-1	J:\MS52\DATA\MS527N26.B\1226-43.D	12/26/07	23:40
CEF-081-DUP01-20071217DMS	JWG0704236-2	J:\MS52\DATA\MS527N26.B\1226-44.D	12/27/07	00:07

QA/QC Report

Client: Tetra Tech NUS,Inc.
Project: 81-ABC/112G00746
Sample Matrix: Water

Service Request: J0706110
Date Extracted: 12/26/2007
Date Analyzed: 12/26/2007
Time Analyzed: 13:25

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Sample Name: Lab Control Sample
Lab Code: JWG0704236-3

File ID: J:\MS52\DATA\MS527N26.B\1226-20.D
Instrument ID: MS52.i

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low
Extraction Lot: JWG0704236

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
CEF-081-21I-20071218	J0706110-006	J:\MS52\DATA\MS527N26.B\1226-35.D	12/26/07	20:06
CEF-081-16S-20071218	J0706110-007	J:\MS52\DATA\MS527N26.B\1226-36.D	12/26/07	20:32
CEF-081-17S-20071218	J0706110-008	J:\MS52\DATA\MS527N26.B\1226-37.D	12/26/07	21:00
CEF-081-14S-20071218	J0706110-009	J:\MS52\DATA\MS527N26.B\1226-38.D	12/26/07	21:26
CEF-081-15S-20071218	J0706110-010	J:\MS52\DATA\MS527N26.B\1226-39.D	12/26/07	21:53
CEF-081-08SR-20071219	J0706110-011	J:\MS52\DATA\MS527N26.B\1226-40.D	12/26/07	22:20
CEF-081-DUP01-20071217	J0706110-012	J:\MS52\DATA\MS527N26.B\1226-41.D	12/26/07	22:47
Method Blank	JWG0704236-4	J:\MS52\DATA\MS527N26.B\1226-22.D	12/26/07	14:19
CEF-081-19I-20071217	J0706110-001	J:\MS52\DATA\MS527N26.B\1226-30.D	12/26/07	17:52
CEF-081-04I-20071217	J0706110-002	J:\MS52\DATA\MS527N26.B\1226-31.D	12/26/07	18:19
CEF-081-09S-20071217	J0706110-003	J:\MS52\DATA\MS527N26.B\1226-32.D	12/26/07	18:45
CEF-081-18I-20071217	J0706110-004	J:\MS52\DATA\MS527N26.B\1226-33.D	12/26/07	19:12
CEF-081-22I-20071218	J0706110-005	J:\MS52\DATA\MS527N26.B\1226-34.D	12/26/07	19:39
TRIP BLANK	J0706110-013	J:\MS52\DATA\MS527N26.B\1226-42.D	12/26/07	23:14
CEF-081-DUP01-20071217MS	JWG0704236-1	J:\MS52\DATA\MS527N26.B\1226-43.D	12/26/07	23:40
CEF-081-DUP01-20071217DMS	JWG0704236-2	J:\MS52\DATA\MS527N26.B\1226-44.D	12/27/07	00:07

Organic Analysis:
Volatile Organic Compounds by GC/MS

Validation Package

Raw Data

Analytical Results

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/17/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-19I-20071217	**Units:**	ug/L
Lab Code:	J0706110-001	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	**3.3**		1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	106	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	102	75-120	12/26/07	Acceptable
Dibromofluoromethane	101	82-116	12/26/07	Acceptable
Toluene-d8	105	88-117	12/26/07	Acceptable

Comments:

Analytical Results

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/17/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-04I-20071217	**Units:**	ug/L
Lab Code:	J0706110-002	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	**1.6**		1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	103	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	103	75-120	12/26/07	Acceptable
Dibromofluoromethane	100	82-116	12/26/07	Acceptable
Toluene-d8	106	88-117	12/26/07	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/17/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-09S-20071217	**Units:**	ug/L
Lab Code:	J0706110-003	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	**0.67**	I	1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	104	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	101	75-120	12/26/07	Acceptable
Dibromofluoromethane	101	82-116	12/26/07	Acceptable
Toluene-d8	105	88-117	12/26/07	Acceptable

Comments:

Analytical Results

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/17/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-18I-20071217	**Units:**	ug/L
Lab Code:	J0706110-004	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	**0.92**	I	1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	104	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	102	75-120	12/26/07	Acceptable
Dibromofluoromethane	101	82-116	12/26/07	Acceptable
Toluene-d8	106	88-117	12/26/07	Acceptable

Comments:

Analytical Results

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/18/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-22I-20071218	**Units:**	ug/L
Lab Code:	J0706110-005	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	**0.32**	I	1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	103	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	101	75-120	12/26/07	Acceptable
Dibromofluoromethane	101	82-116	12/26/07	Acceptable
Toluene-d8	105	88-117	12/26/07	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/18/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-21I-20071218	**Units:**	ug/L
Lab Code:	J0706110-006	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	ND	U	1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	103	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	102	75-120	12/26/07	Acceptable
Dibromofluoromethane	100	82-116	12/26/07	Acceptable
Toluene-d8	105	88-117	12/26/07	Acceptable

Comments:

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/18/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-16S-20071218	**Units:**	ug/L
Lab Code:	J0706110-007	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	ND	U	1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	105	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	103	75-120	12/26/07	Acceptable
Dibromofluoromethane	102	82-116	12/26/07	Acceptable
Toluene-d8	105	88-117	12/26/07	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/18/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-17S-20071218	**Units:**	ug/L
Lab Code:	J0706110-008	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	ND	U	1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	104	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	101	75-120	12/26/07	Acceptable
Dibromofluoromethane	100	82-116	12/26/07	Acceptable
Toluene-d8	105	88-117	12/26/07	Acceptable

Comments:

Analytical Results

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/18/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-14S-20071218	**Units:**	ug/L
Lab Code:	J0706110-009	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	ND	U	1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	105	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	102	75-120	12/26/07	Acceptable
Dibromofluoromethane	100	82-116	12/26/07	Acceptable
Toluene-d8	105	88-117	12/26/07	Acceptable

Comments:

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/18/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-15S-20071218	**Units:**	ug/L
Lab Code:	J0706110-010	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	ND	U	1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	105	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	102	75-120	12/26/07	Acceptable
Dibromofluoromethane	101	82-116	12/26/07	Acceptable
Toluene-d8	105	88-117	12/26/07	Acceptable

Comments:

Analytical Results

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/19/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-08SR-20071219	**Units:**	ug/L
Lab Code:	J0706110-011	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	ND	U	1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	104	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	103	75-120	12/26/07	Acceptable
Dibromofluoromethane	100	82-116	12/26/07	Acceptable
Toluene-d8	105	88-117	12/26/07	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/17/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-DUP01-20071217	**Units:**	ug/L
Lab Code:	J0706110-012	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	**1.5**		1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	105	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	100	75-120	12/26/07	Acceptable
Dibromofluoromethane	101	82-116	12/26/07	Acceptable
Toluene-d8	105	88-117	12/26/07	Acceptable

Comments:

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/19/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	TRIP BLANK	**Units:**	ug/L
Lab Code:	J0706110-013	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	ND	U	1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	105	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	102	75-120	12/26/07	Acceptable
Dibromofluoromethane	101	82-116	12/26/07	Acceptable
Toluene-d8	105	88-117	12/26/07	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Volatile Organic Compounds by GC/MS

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	JWG0704236-4	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	ND	U	1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	104	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	102	75-120	12/26/07	Acceptable
Dibromofluoromethane	101	82-116	12/26/07	Acceptable
Toluene-d8	106	88-117	12/26/07	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/17/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-DUP01-20071217MS	**Units:**	ug/L
Lab Code:	JWG0704236-1	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	**22.2**		1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	107	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	98	75-120	12/26/07	Acceptable
Dibromofluoromethane	103	82-116	12/26/07	Acceptable
Toluene-d8	106	88-117	12/26/07	Acceptable

Comments:

Analytical Results

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	12/17/2007
Sample Matrix:	Water	**Date Received:**	12/19/2007

Volatile Organic Compounds by GC/MS

Sample Name:	CEF-081-DUP01-20071217DMS	**Units:**	ug/L
Lab Code:	JWG0704236-2	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	**22.8**		1.0	0.093	1	12/27/07	12/27/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	108	71-122	12/27/07	Acceptable
4-Bromofluorobenzene	101	75-120	12/27/07	Acceptable
Dibromofluoromethane	102	82-116	12/27/07	Acceptable
Toluene-d8	105	88-117	12/27/07	Acceptable

Comments:

Client:	Tetra Tech NUS,Inc.	**Service Request:**	J0706110
Project:	81-ABC/112G00746	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Volatile Organic Compounds by GC/MS

Sample Name:	Lab Control Sample	**Units:**	ug/L
Lab Code:	JWG0704236-3	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Isopropylbenzene	**20.6**		1.0	0.093	1	12/26/07	12/26/07	JWG0704236	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,2-Dichloroethane-d4	105	71-122	12/26/07	Acceptable
4-Bromofluorobenzene	99	75-120	12/26/07	Acceptable
Dibromofluoromethane	101	82-116	12/26/07	Acceptable
Toluene-d8	105	88-117	12/26/07	Acceptable

Comments:

Organic Analysis:
Volatile Organic Compounds by GC/MS

Validation Package

Standards Data

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: Tetra Tech NUS,Inc.
Project: 81-ABC/112G00746

Service Request: J0706110
Date Analyzed: 12/26/2007
Time Analyzed: 12:27

Tune Summary
Volatile Organic Compounds by GC/MS

File ID: \\JACKSONVILLE1\ACQUDATA\MS52\DATA\MS527N26.B\1226-18.D
Instrument ID: MS52.i
Column:

Analysis Method: 8260B
Analysis Lot: JWG0704237

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
50	95	15	40	21.5	10783	PASS
75	95	30	60	47.1	23616	PASS
95	95	100	100	100.0	50088	PASS
96	95	5	9	7.1	3550	PASS
173	174	0	2	0.4	192	PASS
174	95	50	120	86.2	43152	PASS
175	174	5	9	7.4	3197	PASS
176	174	95	101	97.2	41944	PASS
177	176	5	9	6.8	2841	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	JWG0704237-2	J:\MS52\DATA\MS527N26.B\1226-1	12/26/2007	12:50	
Lab Control Sample	JWG0704236-3	J:\MS52\DATA\MS527N26.B\1226-2	12/26/2007	13:25	
Method Blank	JWG0704236-4	J:\MS52\DATA\MS527N26.B\1226-2	12/26/2007	14:19	
CEF-081-19I-20071217	J0706110-001	J:\MS52\DATA\MS527N26.B\1226-3	12/26/2007	17:52	
CEF-081-04I-20071217	J0706110-002	J:\MS52\DATA\MS527N26.B\1226-3	12/26/2007	18:19	
CEF-081-09S-20071217	J0706110-003	J:\MS52\DATA\MS527N26.B\1226-3	12/26/2007	18:45	
CEF-081-18I-20071217	J0706110-004	J:\MS52\DATA\MS527N26.B\1226-3	12/26/2007	19:12	
CEF-081-22I-20071218	J0706110-005	J:\MS52\DATA\MS527N26.B\1226-3	12/26/2007	19:39	
CEF-081-21I-20071218	J0706110-006	J:\MS52\DATA\MS527N26.B\1226-3	12/26/2007	20:06	
CEF-081-16S-20071218	J0706110-007	J:\MS52\DATA\MS527N26.B\1226-3	12/26/2007	20:32	
CEF-081-17S-20071218	J0706110-008	J:\MS52\DATA\MS527N26.B\1226-3	12/26/2007	21:00	
CEF-081-14S-20071218	J0706110-009	J:\MS52\DATA\MS527N26.B\1226-3	12/26/2007	21:26	
CEF-081-15S-20071218	J0706110-010	J:\MS52\DATA\MS527N26.B\1226-3	12/26/2007	21:53	
CEF-081-08SR-20071219	J0706110-011	J:\MS52\DATA\MS527N26.B\1226-4	12/26/2007	22:20	
CEF-081-DUP01-20071217	J0706110-012	J:\MS52\DATA\MS527N26.B\1226-4	12/26/2007	22:47	
TRIP BLANK	J0706110-013	J:\MS52\DATA\MS527N26.B\1226-4	12/26/2007	23:14	
CEF-081-DUP01-20071217MS	JWG0704236-1	J:\MS52\DATA\MS527N26.B\1226-4	12/26/2007	23:40	
CEF-081-DUP01-20071217DMS	JWG0704236-2	J:\MS52\DATA\MS527N26.B\1226-4	12/27/2007	00:07	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

QA/QC Results

Client: Tetra Tech NUS,Inc.
Project: 81-ABC/112G00746

Service Request: J0706110
ICAL Date: 12/20/2007

Initial Calibration Summary
Volatile Organic Compounds by GC/MS

ICAL ID: CAL1298
Instrument ID: MS52.i

Column: DB-VRX

Level ID	File ID	Level ID	File ID
A	\\Jacksonville1\ACQUDATA\MS52\DATA\MS527N20.B\122	E	\\Jacksonville1\ACQUDATA\MS52\DATA\MS527N20.B\122
B	\\Jacksonville1\ACQUDATA\MS52\DATA\MS527N20.B\122	F	\\Jacksonville1\ACQUDATA\MS52\DATA\MS527N20.B\122
C	\\Jacksonville1\ACQUDATA\MS52\DATA\MS527N20.B\122	G	\\Jacksonville1\ACQUDATA\MS52\DATA\MS527N20.B\122
D	\\Jacksonville1\ACQUDATA\MS52\DATA\MS527N20.B\122	H	\\Jacksonville1\ACQUDATA\MS52\DATA\MS527N20.B\122

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
1,2-Dichloroethane-d4							C	10	0.268	D	20	0.257	E	50	0.278
	F	100	0.273	G	150	0.275	H	200	0.267						
4-Bromofluorobenzene							C	10	0.850	D	20	0.823	E	50	0.848
	F	100	0.835	G	150	0.820	H	200	0.797						
Dibromofluoromethane							C	10	0.200	D	20	0.209	E	50	0.224
	F	100	0.227	G	150	0.228	H	200	0.225						
Isopropylbenzene	A	1.0	2.76	B	2.0	2.34	C	5.0	2.67	D	20	2.63	E	50	2.51
	F	100	2.50	G	150	2.39	H	200	2.27						
Toluene-d8							C	10	1.93	D	20	1.93	E	50	2.01
	F	100	1.96	G	150	1.87	H	200	1.78						
‡ Ethylbenzene	A	1.0	2.91	B	2.0	2.60	C	5.0	2.77	D	20	2.85	E	50	2.71
	F	100	2.68	G	150	2.53	H	200	2.36						
‡ Toluene	A	1.0	2.74	B	2.0	2.45	C	5.0	2.64	D	20	2.60	E	50	2.48
	F	100	2.45	G	150	2.32	H	200	2.16						
† Chlorobenzene	A	1.0	1.85	B	2.0	1.67	C	5.0	1.73	D	20	1.68	E	50	1.61
	F	100	1.58	G	150	1.49	H	200	1.40						
‡ Chloroform	A	1.0	0.471	B	2.0	0.403	C	5.0	0.458	D	20	0.451	E	50	0.446
	F	100	0.464	G	150	0.461	H	200	0.451						
† Chloromethane	A	1.0	0.486	B	2.0	0.406	C	5.0	0.451	D	20	0.456	E	50	0.453
	F	100	0.428	G	150	0.398	H	200	0.354						
‡ Vinyl Chloride	A	1.0	0.356	B	2.0	0.271	C	5.0	0.322	D	20	0.348	E	50	0.340
	F	100	0.331	G	150	0.319	H	200	0.282						
† Bromoform	A	1.0	0.123	B	2.0	0.101	C	5.0	0.138	D	20	0.192	E	50	0.262
	F	100	0.313	G	150	0.338	H	200	0.333						
† 1,1-Dichloroethane	A	1.0	0.541	B	2.0	0.482	C	5.0	0.523	D	20	0.527	E	50	0.518
	F	100	0.527	G	150	0.523	H	200	0.510						
‡ 1,1-Dichloroethene	A	1.0	0.420	B	2.0	0.342	C	5.0	0.386	D	20	0.419	E	50	0.405
	F	100	0.423	G	150	0.413	H	200	0.407						

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: Tetra Tech NUS,Inc.
Project: 81-ABC/112G00746

Service Request: J0706110
ICAL Date: 12/20/2007

Initial Calibration Summary
Volatile Organic Compounds by GC/MS

ICAL ID: CAL1298
Instrument ID: MS52.i

Column: DB-VRX

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
‡ 1,2-Dichloropropane	A	1.0	0.306	B	2.0	0.270	C	5.0	0.292	D	20	0.290	E	50	0.289
	F	100	0.294	G	150	0.292	H	200	0.287						
† 1,1,2,2-Tetrachloroethane	A	1.0	0.619	B	2.0	0.548	C	5.0	0.631	D	20	0.632	E	50	0.632
	F	100	0.593	G	150	0.582	H	200	0.549						

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: Tetra Tech NUS,Inc. **Service Request:** J0706110
Project: 81-ABC/112G00746 **ICAL Date:** 12/20/2007

Initial Calibration Summary
Volatile Organic Compounds by GC/MS

ICAL ID: CAL1298 **Column:** DB-VRX
Instrument ID: MS52.i

		Calibration Evaluation					RRF Evaluation		
Analyte Name	Compound Type	Fit Type	Eval.	Eval. Result	Q	Control Criteria	Average RRF	Q	Minimum RRF
1,2-Dichloroethane-d4	SURR	AverageRF	% RSD	2.8		≤ 15	0.270		
4-Bromofluorobenzene	SURR	AverageRF	% RSD	2.4		≤ 15	0.829		
Dibromofluoromethane	SURR	AverageRF	% RSD	5.3		≤ 15	0.219		
Isopropylbenzene	MS	AverageRF	% RSD	6.7		≤ 15	2.51		0.01
Toluene-d8	SURR	AverageRF	% RSD	4.2		≤ 15	1.91		
‡ Ethylbenzene	MS	AverageRF	% RSD	6.7		≤ 15	2.68		0.01
‡ Toluene	MS	AverageRF	% RSD	7.5		≤ 15	2.48		0.01
† Chlorobenzene	MS	AverageRF	% RSD	8.6		≤ 15	1.62		0.3
‡ Chloroform	MS	AverageRF	% RSD	4.7		≤ 15	0.451		0.01
† Chloromethane	MS	AverageRF	% RSD	9.7		≤ 15	0.429		0.1
‡ Vinyl Chloride	MS	AverageRF	% RSD	9.4		≤ 15	0.321		0.01
† Bromoform	MS	Linear	R2	0.997		≥ 0.99	0.225		0.1
† 1,1-Dichloroethane	MS	AverageRF	% RSD	3.3		≤ 15	0.519		0.1
‡ 1,1-Dichloroethene	MS	AverageRF	% RSD	6.7		≤ 15	0.402		0.01
‡ 1,2-Dichloropropane	MS	AverageRF	% RSD	3.4		≤ 15	0.290		0.01
† 1,1,2,2-Tetrachloroethane	MS	AverageRF	% RSD	6.0		≤ 15	0.598		0.3

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: Tetra Tech NUS,Inc.
Project: 81-ABC/112G00746

Service Request: J0706110
ICAL Date: 12/20/2007
Date Analyzed: 12/20/2007

Second Source Calibration Verification
Volatile Organic Compounds by GC/MS

ICAL Type: Internal Standard
Analysis Method: 8260B

ICAL ID: CAL1298
Units: ug/L

File ID: \\Jacksonville1\ACQUDATA\MS52\DATA\MS527N20.B\1220-12.D

Column ID: DB-VRX

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Isopropylbenzene	50	53	2.51	2.67	6	NA	± 30 %	AverageRF
† 1,1,2,2-Tetrachloroethane	50	54	0.598	0.646	8	NA	± 30 %	AverageRF
† 1,1-Dichloroethane	50	52	0.519	0.541	4	NA	± 30 %	AverageRF
‡ 1,1-Dichloroethene	50	58	0.402	0.466	16	NA	± 30 %	AverageRF
‡ 1,2-Dichloropropane	50	52	0.290	0.300	3	NA	± 30 %	AverageRF
† Bromoform	50	53	0.225	0.326	NA	5	± 30 %	Linear
† Chlorobenzene	50	51	1.62	1.67	3	NA	± 30 %	AverageRF
‡ Chloroform	50	51	0.451	0.461	2	NA	± 30 %	AverageRF
† Chloromethane	50	59	0.429	0.504	18	NA	± 30 %	AverageRF
‡ Ethylbenzene	50	54	2.68	2.87	7	NA	± 30 %	AverageRF
‡ Toluene	50	53	2.48	2.60	5	NA	± 30 %	AverageRF
‡ Vinyl Chloride	50	58	0.321	0.369	15	NA	± 30 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: Tetra Tech NUS,Inc.
Project: 81-ABC/112G00746

Service Request: J0706110
Date Analyzed: 12/26/2007

Continuing Calibration Verification Summary
Volatile Organic Compounds by GC/MS

ICAL Type: Internal Standard
Analysis Method: 8260B

ICAL Date: 12/20/2007
ICAL ID: CAL1298
Analysis Lot: JWG0704237
Units: ug/L

File ID: \\JACKSONVILLE1\ACQUDATA\MS52\DATA\MS527N26.B\1226-19.D

Column ID: DB-VRX

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
1,2-Dichloroethane-d4	50	51		0.270	0.274	1	NA	± 30 %	AverageRF
4-Bromofluorobenzene	50	49		0.829	0.818	-1	NA	± 30 %	AverageRF
Dibromofluoromethane	50	50		0.219	0.219	0	NA	± 30 %	AverageRF
Isopropylbenzene	50	47	0.01	2.51	2.38	-5	NA	± 30 %	AverageRF
Toluene-d8	50	53		1.91	2.01	5	NA	± 30 %	AverageRF
‡ Ethylbenzene	50	48	0.01	2.68	2.59	-3	NA	± 20 %	AverageRF
‡ Toluene	50	48	0.01	2.48	2.38	-4	NA	± 20 %	AverageRF
† Chlorobenzene	50	47	0.3	1.62	1.51	-7	NA	± 30 %	AverageRF
‡ Chloroform	50	48	0.01	0.451	0.434	-4	NA	± 20 %	AverageRF
† Chloromethane	50	50	0.1	0.429	0.428	0	NA	± 30 %	AverageRF
‡ Vinyl Chloride	50	48	0.01	0.321	0.308	-4	NA	± 20 %	AverageRF
† Bromoform	50	48	0.1	0.225	0.296	NA	-3	± 30 %	Linear
† 1,1-Dichloroethane	50	48	0.1	0.519	0.495	-5	NA	± 30 %	AverageRF
‡ 1,1-Dichloroethene	50	46	0.01	0.402	0.373	-7	NA	± 20 %	AverageRF
‡ 1,2-Dichloropropane	50	48	0.01	0.290	0.278	-4	NA	± 20 %	AverageRF
† 1,1,2,2-Tetrachloroethane	50	49	0.3	0.598	0.583	-3	NA	± 30 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Organic Analysis:
Volatile Organic Compounds by GC/MS

Validation Package

Sample Prep and Screen Data

Preparation Information

Group ID:	JWG0704236	**Prep Method:**	EPA 5030B	**Prep Date:**	12/26/07 12:27
Department:	VolatileOrganic				

Lab Code	Client ID	Product	Matrix	Amt. Ext.	Final Vol.
J0706046-007	MW-14	8260B	WATER	5ml	5ml
J0706088-001	Week of 12-17-07	8260B	WATER	5ml	5ml
J0706090-001	MW-2	8260B	WATER	5ml	5ml
J0706090-002	MW-22	8260B	WATER	5ml	5ml
J0706090-003	Field Blank	8260B	WATER	5ml	5ml
J0706090-004	Trip Blank	8260B	WATER	5ml	5ml
J0706110-001	CEF-081-19I-20071217	8260B	WATER	5ml	5ml
J0706110-002	CEF-081-04I-20071217	8260B	WATER	5ml	5ml
J0706110-003	CEF-081-09S-20071217	8260B	WATER	5ml	5ml
J0706110-004	CEF-081-18I-20071217	8260B	WATER	5ml	5ml
J0706110-005	CEF-081-22I-20071218	8260B	WATER	5ml	5ml
J0706110-006	CEF-081-21I-20071218	8260B	WATER	5ml	5ml
J0706110-007	CEF-081-16S-20071218	8260B	WATER	5ml	5ml
J0706110-008	CEF-081-17S-20071218	8260B	WATER	5ml	5ml
J0706110-009	CEF-081-14S-20071218	8260B	WATER	5ml	5ml
J0706110-010	CEF-081-15S-20071218	8260B	WATER	5ml	5ml
J0706110-011	CEF-081-08SR-20071219	8260B	WATER	5ml	5ml
J0706110-012	CEF-081-DUP01-20071217	8260B	WATER	5ml	5ml
J0706110-013	TRIP BLANK	8260B	WATER	5ml	5ml
J0706128-001	Inf. OWS-2007-12-19	624	WATER	5ml	5ml
JWG0704236-1	Matrix Spike	8260B	WATER	5ml	5ml
JWG0704236-2	Duplicate Matrix Spike	8260B	WATER	5ml	5ml
JWG0704236-3	Lab Control Sample	8260B	WATER	5ml	5ml
JWG0704236-4	Method Blank	8260B	WATER	5ml	5ml

Lab Code	Parent Lab Code	Comments
JWG0704236-1	J0706110-012	
JWG0704236-2	J0706110-012	

Lab Code	Prep Event ID	Surrogate Solution ID	Amount Added	Spike Solution ID	Amount Added	Witness
J0706046-007	134309	07-VOA-0713	1uL			
J0706088-001	134311	07-VOA-0713	1uL			
J0706090-001	134312	07-VOA-0713	1uL			
J0706090-002	134313	07-VOA-0713	1uL			
J0706090-003	134314	07-VOA-0713	1uL			
J0706090-004	134315	07-VOA-0713	1uL			

Comments:

Started By: jallen Assisted By: _____ Training Yes No

Completed By: jallen Assisted By: _____ Yes No

Reviewed By: _____ Date: _____ Storage: _____

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

Group ID:	JWG0704236	**Prep Method:**	EPA 5030B	**Prep Date:**	12/26/07 12:27
Department:	VolatileOrganic				

Lab Code	Prep Event ID	Surrogate Solution ID	Amount Added	Spike Solution ID	Amount Added	Witness
J0706110-001	134316	07-VOA-0713	1uL			
J0706110-002	134317	07-VOA-0713	1uL			
J0706110-003	134318	07-VOA-0713	1uL			
J0706110-004	134319	07-VOA-0713	1uL			
J0706110-005	134320	07-VOA-0713	1uL			
J0706110-006	134321	07-VOA-0713	1uL			
J0706110-007	134322	07-VOA-0713	1uL			
J0706110-008	134323	07-VOA-0713	1uL			
J0706110-009	134324	07-VOA-0713	1uL			
J0706110-010	134325	07-VOA-0713	1uL			
J0706110-011	134326	07-VOA-0713	1uL			
J0706110-012	134327	07-VOA-0713	1uL			
J0706110-013	134328	07-VOA-0713	1uL			
J0706128-001	134310	07-VOA-0713	1uL			
JWG0704236-1	134329	07-VOA-0713	1uL	07-VOA-0743/745	8.6uL	
JWG0704236-2	134330	07-VOA-0713	1uL	07-VOA-0743/745	8.6uL	
JWG0704236-3	134331	07-VOA-0713	1uL	07-VOA-0743/745	20uL	
JWG0704236-4	134332	07-VOA-0713	1uL			

Comments:

Started By: jallen Assisted By: _____ Training Yes No

Completed By: jallen Assisted By: _____ Yes No

Reviewed By: _____ Date: _____ Storage: _____

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No