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NTC ORLANDO
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QUARTERLY GROUNDWATER SAMPLING OCTOBER 1999 AT STUDY AREA 2 WITH TRANSMITTAL LETTER NTC ORLANDO FL
2/4/2000
TETRA TECH

TETRA TECH NUS, INC.
800 Oak Ridg
(423) 483

[redacted]
00239

00-A013

February 4, 2000

Commanding Officer
SOUTHNAVFACENGCOM
ATTN: Ms. Barbara Nwokike, Code 1873
P.O. Box 190010
2155 Eagle Drive
North Charleston, SC 29419-9010

Subject: Study Area 2 Quarterly Groundwater Sampling, October 1999
McCoy Annex, NTC, Orlando

Dear Ms. Nwokike:

Enclosed are the results from the quarterly groundwater sampling conducted at SA 2 in October, 1999. The results for this and previous sampling events, are summarized in the attached tables and figures. Copies of the field log sheets are included in Attachment A.

Natural attenuation data are included for review in the data set, but an evaluation to determine if the conditions are conducive to naturally attenuate the benzene at SA 2 will be provided in a later transmittal. Regardless of whether NA is occurring, however, the benzene concentrations decreased in four of the five wells with exceedances.

The next sampling at SA 2 was completed on January 25, 2000, and the results will be issued in April 2000. If you have any questions please contact me at (423) 220-4730.

Sincerely,

Steven B. McCoy, P.E.
Task Order Manager

SBM:ckf

Enclosure

c: Mr. Rick Allen, Harding Lawson Associates
Mr. David Grabka, FDEP
Mr. Wayne Hansel, SOUTHNAVFACENGCOM
Ms. Nancy Rodriguez, USEPA Region IV
Mr. Steve Sangaris, CH2M Hill
Mr. Michael Campbell, Tetra Tech NUS
Mr. Mark Perry, Tetra Tech NUS (unbound)
Ms. Debbie Wroblewski, Tetra Tech NUS (cover letter only)
File/db

GROUNDWATER SAMPLING AT STUDY AREA 2

Trip Dates: October 23, 25-27, 1999

Site Name: Study Area 2
Main Base, Naval Training Center, Orlando, Florida

TO Manager: Steve McCoy

Field Team: Jason McCann, Field Operations Leader
Gary Sparks
Jerry Krieger

Prepared by: Enoch Barton

1. PURPOSE

Tetra Tech NUS conducted quarterly groundwater sampling at Study Area (SA) 2 in October 1999. The fieldwork was performed in accordance with the *Work Plan for Groundwater Sampling* (Tetra Tech NUS, 1999a), and the *Project Operations Plan* (POP) (ABB-ES, 1997).

2. ACTIVITIES

Tetra Tech NUS mobilized to the field on October 20, 1999, to perform quarterly sampling at SAs 2, 3, and 52, and Operable Unit (OU) 3. Activities began at SA2 with a site reconnaissance and water level survey on October 23, 1999.

Sampling - Groundwater sampling at SA 2 began on October 25, 1999, and continued through October 27, 1999. Ten wells were purged and sampled with a peristaltic pump using the low-flow method described in the POP. Purging of the wells consisted of removing groundwater at a rate of approximately 100 ml/min until field parameters, which include temperature, pH, conductivity, turbidity, dissolved oxygen, and oxidation-reduction potential, had stabilized. Water levels were monitored every 3 to 5 minutes to ensure that drawdown was less than 0.3 feet. Groundwater sample log sheets are included in Attachment A.

The groundwater samples from SA 2 were collected by the tube evacuation method, and analyzed for TCL VOCs using SW 846 Method 8260. All samples were placed in ice-chilled coolers and shipped overnight to Quanterra Inc. in North Canton, OH for analysis.

Natural attenuation parameters (dissolved oxygen, carbon dioxide, sulfide, ferrous iron and hydrogen sulfide) were measured in the field for four wells (OLD-02-1OC, -12C, -17C, and -19C). In addition, samples were collected from five wells (OLD-02-IOC, -12C, -13C, -17C and -19C) and shipped overnight to Quanterra for analysis of the following parameters: alkalinity, anions, dissolved metals (iron and magnesium), total Kjeldahl nitrogen (TKN) and dissolved organic carbon. Biogenic gases (hydrogen, dissolved oxygen, nitrogen, ethane, ethene and methane) were collected with a gas stripping cell and the samples sent for analysis to VaporTech Services, Inc. in Valencia, Pennsylvania. Dissolved iron and magnesium samples were filtered in the field with a 0.45 u filter.

Sampling of Private Wells – Four private wells in the Azalea Park Neighborhood were sampled on August 8, 1999, to determine if the benzene plume had impacted these wells. The construction details of these wells are unknown.

3. PROBLEMS ENCOUNTERED

Dissolved oxygen concentrations measured at wells OLD-02-10C and -19C during purging were not accurate. However, the data were used as relative values to determine when stabilization occurred. Also, at some well locations temperature measurements were elevated due to the high ambient temperature and lengthy tubing runs. Turbidity did not stabilize within the limits specified in the Work Plan for seven of the wells, but the turbidity was less than 10 NTU at the time of sampling in all except two (OLD-02-12C and -19C).

4. RESULTS

Water Level Survey - The water level survey at SA 2 was conducted on October 23, 1999, and the groundwater elevation data are presented in Table 1. Figures 1 and 2 show the water table and potentiometric surface configurations of the shallow and deep portions of the aquifer, respectively. The data are generally consistent with the potentiometric data presented in the SA 2 Environmental Screening Report (HLA 1999) and the previous quarterly sampling report (Tetra Tech NUS, 1999b).

Groundwater in the surficial aquifer generally flows to the north-northeast toward Lake Barton. Comparison of the elevation of the potentiometric surface both in the shallow and deep monitoring wells with the elevation of the drainage canal that runs along the eastern perimeter of the site indicates that the aquifer discharges into the canal. This is demonstrated by the northwestern trend in the potentiometric contours of the shallow zone beneath the Azalea Park neighborhood (see Figure 1). The effect of the canal is interpreted to be much less for the deep zone groundwater (see Figure 2) which may discharge to Lake Barton.

The potentiometric data also show a downward vertical gradient across much of the area mapped in Figures 1 and 2 that diminishes as flow approaches Lake Barton. The head differential between the shallow and deep monitoring wells ranges between 1 to 3 feet. An exception to this condition occurs locally in the vicinity of wells OLD0204A, - 20B, and - 21C (next to the drainage canal) where the vertical gradient is upward.

Data Validation - All sample analyses, with the exception of the natural attenuation parameters, were subjected to data validation in accordance with the guidance document *Navy Installation Restoration Laboratory Quality Assurance Guide* (NFESC, 1996). Qualification of the data was performed using the *USEPA Contract Laboratory Program: National Functional Guidelines for Organic Data Review* (USEPA, 1994). The data validation evaluated data completeness, holding time compliance, calibration compliance, laboratory blank contamination, surrogate spike recovery, matrix spike recovery, blank spike recovery, internal standard response, sample quantitation, and detection limits. A limited data validation was performed on natural attenuation parameters. Qualifiers resulting from the validation process are shown with the analyte concentrations in Tables 2, 3, and 4.

Analytical Results

Monitoring Data - Table 2 presents a summary of groundwater positive detections for SA 2 for the October 1999 monitoring event. Historical groundwater analytical data are presented in Table 3, and a complete listing of the validated analytical data for October 1999 is included in Table 4. Shaded cells indicate analyte concentrations meeting or exceeding the Florida Groundwater Cleanup Target Levels (GCTLs) (FDEP, 1999). Figure 3 shows the distribution of VOCs detected above the GCTLs. Benzene was detected above its GCTL of 1 µg/L in samples collected from wells OLD-02-08C, OLD-02-13C, OLD-02-20B, and OLD-02-21C. Concentrations of benzene measured in October increased from the levels in July 1999 in one well (OLD-02-08C) and decreased in four wells (OLD-02-10C, -13C, -20B, and – 21C). Benzene was not detected in well OLD-02-19C, which had contained benzene at concentrations above the GCTL in December 1997, December 1998, and July 1999.

Natural Attenuation – Table 5 presents the natural attenuation data collected for SA 2. An evaluation of the data will be provided in a separate transmittal.

Private Wells – The analytical data for the four Azalea Park wells were transmitted to the OPT in an email on October 28, 1999. These data are provided in Table 5. The two wells at 20 Nancy Lee had benzene concentrations (19 and 5.2 µg/L) greater than the GCTL of 1 µg/L.

REFERENCES

ABB-ES (ABB Environmental Services, Inc.), 1997. *Project Operations Plan for Site Investigations and Remedial Investigations*. Naval Training Center, Orlando, Florida, Unit Identification Code N65928, Navy CLEAN District 1, Contract No. N62467-89-D-0317, August.

FDEP (Florida Department of Environmental Protection), 1999. *Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C.* CEH/TR-99-01, May 26, 1999.

HLA (Harding Lawson Associates), 1999. *Base Realignment and Closure, Environmental Site Screening Report, Study Area 2, Herndon Annex, Naval Training Center, Orlando, Florida*. Unit Identification Code N65928. Navy Clean District 1, Contract No. N62467-89-D-0317/107, July.

NFESC (Naval Facilities Engineering Service Center), 1996. *Navy Installation Restoration Chemical Data Quality Assurance Manual (Interim Guidance Document),* February.

Tetra Tech NUS, Inc., 1999a. *Work Plan for Groundwater Sampling*. Document No. R4707995, September.

Tetra Tech NUS, Inc., 1999b. *Monitor Well Sampling at Study Area 2*. Document No. R4709992, September.

USEPA, 1994. *Tetra Tech NUS, Inc. USEPA Contract Laboratory Program: National Functional Guidelines for Organic Data Review.* EPA/540/R-94/012, Office of Solid Waste and Emergency Response, Washington, D.C., February.

TABLES

No.	
1	Water-Level Elevations Summary
2	Positive Detections in Groundwater – October 1999
3	Historical Detections in Groundwater
4	Validated Groundwater Analytical Results – October 1999
5	Natural Attenuation Parameter Results – October 1999
6	Positive Detections in Private Wells – August 9, 1999

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TABLE 1
WATER-LEVEL ELEVATIONS SUMMARY
STUDY AREA 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well	Well Type	Screen Interval (BGS)	TOC Elevation (AMSL)	2/19/98		12/16/98		7/13/99		10/23/99	
				Depth to Water (BTOC)	Groundwater Elevation (AMSL)	Depth to Water (BTOC)	Groundwater Elevation (AMSL)	Depth to Water (BTOC)	Groundwater Elevation (AMSL)	Depth to Water (BTOC)	Groundwater Elevation (AMSL)
OLD-02-01A	2" well	7-17	104.70	9.57	95.13	11.15	93.55	10.93	93.77	10.38	94.32
OLD-02-02A	2" well	3-13	111.27	7.27	104.00	9.97	101.30	10.44	100.83	8.40	102.87
OLD-02-03A	2" well	3-13	117.45	8.31	109.14	DRY	DRY	DRY	DRY	8.27	109.18
OLD-02-04A	2" well	5-15	110.03	10.24	99.79	12.40	97.63	12.09	97.94	10.53	99.50
OLD-02-05A	2" well	3-13	112.89	6.84	106.05	10.67	102.22	10.38	102.51	8.13	104.76
OLD-02-06A	2" well	3-13	109.17	4.55	104.62	7.75	101.42	8.02	101.15	5.45	103.72
OLD-02-07C	2" well	57-62	111.52	11.56	99.96	13.42	98.10	13.79	97.73	13.00	98.52
OLD-02-08C	2" well	60-65	112.31	7.10	105.21	10.01	102.30	10.59	101.72	7.83	104.48
OLD-02-09A	2" well	5-15	112.34	6.30	106.04	9.80	102.54	10.40	101.94	7.48	104.86
OLD-02-10C	2" well	52-57	106.90	7.80	99.10	10.08	96.82	10.04	96.86	8.71	98.19
OLD-02-11A	2" well	5-15	107.14	4.27	102.87	7.45	99.69	7.65	99.49	5.23	101.91
OLD-02-12C	2" well	53-58	116.04	10.88	105.16	NM	NM	14.26	101.78	11.59	104.45
OLD-02-13C	2" well	44-49	104.72	7.00	97.72	8.97	95.75	8.75	95.97	7.53	97.19
OLD-02-14C	2" well	41-46	102.74	8.32	94.42	9.38	93.36	9.21	93.53	8.88	93.86
OLD-02-15A	2" well	10-15	100.05	3.22	96.83	5.85	94.20	5.06	94.99	3.58	96.47
OLD-02-16B	2" well	28-33	99.97	3.14	96.83	5.78	94.19	4.99	94.98	3.52	96.45
OLD-02-17C	2" well	45-50	99.82	3.34	96.48	8.60	91.22	4.87	94.95	3.59	96.23
OLD-02-18B	2" well	29-34	102.17	3.20	98.97	6.60	95.57	5.81	96.36	5.19	96.98
OLD-02-19C	2" well	49-54	102.32	7.21	95.11	6.77	95.55	6.40	95.92	5.26	97.06
OLD-02-20B	2" well	36-41	108.26	not installed		7.78	100.48	7.95	100.31	6.04	102.22
OLD-02-21C	2" well	56-61	108.56	not installed		7.00	101.56	7.38	101.18	5.97	102.59

Notes:

All measurements are in units of feet.

AMSL - Above mean sea level

BGS - Below ground surface

BTOC - Below top of casing

NM - Not measured

TOC - Top of casing

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TABLE 2

POSITIVE DETECTIONS IN GROUNDWATER, OCTOBER 1999
STUDY AREA 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION		Screening Criteria[a]		OLD-02-04A		OLD-02-08C		OLD-02-10C	OLD-02-12C
SAMPLE ID	CAS Number	Florida GCTL[b]	NTC BGSV[c]	NTC02G04A11	NTC02G04A11-D	NTC02G08C11	NTC02G08C11-D	NTC02G10C11	NTC02G12C11
LAB ID				A9J260203008	A9J260203008	A9J270191002	A9J270191003	A9J300126001	A9J270191001
SAMPLE DATE				10/25/99	10/25/99	10/26/99	10/26/99	10/27/99	10/26/99
Volatile Organics (µg/L)									
Acetone	67-64-1	700						23 J	
Benzene	71-43-2	1				18	18	0.25 J	
cis-1,2-Dichloroethene	156-59-2	70				0.86 J	0.77 J	0.42 J	
Ethylbenzene	100-41-4	30							
Toluene	108-88-3	40						0.28 J	
Trichloroethene	79-01-6	3							
Inorganics (µg/L)				NA	NA	NA	NA		
Iron (Dissolved)	7439-89-6	300	1227						673

TABLE 2

POSITIVE DETECTIONS IN GROUNDWATER, OCTOBER 1999
STUDY AREA 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION		Screening Criteria[a]		OLD-02-13C	OLD-02-14C	OLD-02-17C	OLD-02-19C	OLD-02-20B	OLD-02-21C
SAMPLE ID	CAS Number	Florida GCTL[b]	NTC BGSV[c]	NTC02G13C11	NTC02G14C11	NTC02G17C11	NTC02G19C11	NTC02G20B11	NTC02G21C11
LAB ID				A9J260203010	A9J270191005	A9J300125001	A9J300125002	A9J260203006	A9J260203007
SAMPLE DATE				10/25/99	10/26/99	10/27/99	10/27/99	10/25/99	10/25/99
Volatile Organics (µg/L)									
Acetone	67-64-1	700							
Benzene	71-43-2	1		83				38	34
cis-1,2-Dichloroethene	156-59-2	70		5.2	0.24 J			3	2.7
Ethylbenzene	100-41-4	30		1.3 J				0.57 J	0.37 J
Toluene	108-88-3	40							
Trichloroethene	79-01-6	3		0.68 J				1.4 J	1.9
Inorganics (µg/L)					NA			NA	NA
Iron (Dissolved)	7439-89-6	300	1227	320		1,400	1,930		

Footnotes:

"J" qualifier indicates an estimated value.
NA – Not Analyzed.
Values in shaded cells meet or exceed the screening criteria.
Empty cells indicate non-detects.
[a] – For an organic analyte, the screening criterion is the GCTL; for an inorganic analyte with an established GCTL and BGSV, the screening criterion is the greater of the GCTL or the BGSV.
[b] – Groundwater Cleanup Target Level (Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C. , May 26, 1999).
[c] – Background Screening Value (Background Sampling Report for NTC, Orlando, Florida; ABB Environmental Services, August 1995) for inorganics only.

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION		Screening Criteria [a]		OLD-02-01A			
SAMPLE ID	CAS Number	Florida GCTL [b]	NTC BGSV [c]	02G00101	02G00102	02G00102	02G00103
LAB ID				G5782001	G7818003	C127447002	A8L090188007
SAMPLE DATE				9/14/94	6/14/95	8/8/97	12/8/98
Volatile Organics (µg/L)							
1,2,4-Trimethylbenzene	95-63-6	10					
1,3,5-Trimethylbenzene	108-67-8	10					
2-Butanone	78-93-3	4200					
4-Isopropyltoluene		*					
Acetone	67-64-1	700					
Benzene	71-43-2	1					
Bromodichloromethane	75-27-4	0.6					
Chloroform	67-66-3	5.7		0.3 J			
Chloromethane	74-87-3	2.7					
cis-1,2-Dichloroethene	156-59-2	70					
Ethane		*					
Ethylbenzene	100-41-4	30					
Isopropylbenzene	98-82-8	0.8					
m-Xylene & p-Xylene		*					
Methane		*					2.2
Methylene Chloride	75-09-2	5					1.3 J
o-Xylene		*					
Toluene	108-88-3	40					
Trichloroethene	79-01-6	3					
Xylenes, Total	1330-20-7	20					
Semivolatiles (µg/L)				NA			NA
bis(2-Ethylhexyl)phthalate	117-81-7	6			4		
o-Dichlorobenzene		*					
Phenanthrene	85-01-8	210					
Phenol	108-95-2	10					
Inorganics (µg/L)				NA		NA	NA
Aluminum	7429-90-5	200	4067		1590		
Antimony	7440-36-0	6	4.1				
Arsenic	7440-38-2	50	5				
Barium	7440-39-3	2000	31.4		18.3 B		
Beryllium	7440-41-7	4	*				
Calcium	7440-70-2	*	36830		21000		
Chromium	7440-47-3	100	7.8		3.2 B		
Copper	7440-50-8	1000	5.4		9.1 B		
Iron	7439-89-6	300	1227		267		
Iron (Dissolved)	7439-89-6	300	1227	NA	NA	NA	NA
Lead	7439-92-1	15	4				
Magnesium	7439-95-4	*	4560		358 B		
Manganese	7439-96-5	50	17		18.5		
Mercury	7439-97-6	2	0.12				
Potassium	7440-09-7	*	5400		2390 B		
Selenium	7782-49-2	50	9.7				
Sodium	7440-23-5	160000	18222		1660 B		
Vanadium	7440-62-2	49	20.6				
Zinc	7440-66-6	5000	4				
Radionuclides (pCi/L)				NA		NA	NA
Gross Alpha		13			4.4		
Gross Beta		9.5			5.3		
Misc (mg/L)				NA	NA	NA	
Total Organic Carbon		*					4

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION		Screening Criteria [a]		OLD-02-02A				OLD-02-03A
SAMPLE ID	CAS Number	Florida GCTL[b]	NTC BGSV[c]	02G00201	02G00201-D	02G00202	02G00203	02G00301
LAB ID				G5782002	G5782003	G7818002	A8L090188008	G5782004
SAMPLE DATE				9/14/94	9/14/94	6/14/95	12/8/98	9/14/94
Volatile Organics (µg/L)								
1,2,4-Trimethylbenzene	95-63-6	10						
1,3,5-Trimethylbenzene	108-67-8	10						
2-Butanone	78-93-3	4200						
4-Isopropyltoluene		*						
Acetone	67-64-1	700						
Benzene	71-43-2	1						
Bromodichloromethane	75-27-4	0.6						
Chloroform	67-66-3	5.7						
Chloromethane	74-87-3	2.7						2
cis-1,2-Dichloroethene	156-59-2	70						
Ethane		*						
Ethylbenzene	100-41-4	30						
Isopropylbenzene	98-82-8	0.8						
m-Xylene & p-Xylene		*						
Methane		*					21	
Methylene Chloride	75-09-2	5					1.4 J	
o-Xylene		*						
Toluene	108-88-3	40						
Trichloroethene	79-01-6	3						
Xylenes, Total	1330-20-7	20						
Semivolatiles (µg/L)				NA	NA		NA	NA
bis(2-Ethylhexyl)phthalate	117-81-7	6				4		
o-Dichlorobenzene		*						
Phenanthrene	85-01-8	210						
Phenol	108-95-2	10						
Inorganics (µg/L)				NA	NA		NA	NA
Aluminum	7429-90-5	200	4067			78.2 B		
Antimony	7440-36-0	6	4.1			2.6 B		
Arsenic	7440-38-2	50	5					
Barium	7440-39-3	2000	31.4					
Beryllium	7440-41-7	4	*					
Calcium	7440-70-2	*	36830			37300		
Chromium	7440-47-3	100	7.8					
Copper	7440-50-8	1000	5.4					
Iron	7439-89-6	300	1227			13.8 B		
Iron (Dissolved)	7439-89-6	300	1227	NA	NA	NA	NA	NA
Lead	7439-92-1	15	4					
Magnesium	7439-95-4	*	4560			856 B		
Manganese	7439-96-5	50	17					
Mercury	7439-97-6	2	0.12					
Potassium	7440-09-7	*	5400			904 B		
Selenium	7782-49-2	50	9.7					
Sodium	7440-23-5	160000	18222			4040 B		
Vanadium	7440-62-2	49	20.6			2.5 B		
Zinc	7440-66-6	5000	4					
Radionuclides (pCi/L)				NA	NA		NA	NA
Gross Alpha		13				1.1		
Gross Beta		9.5						
Misc (mg/L)				NA	NA	NA		NA
Total Organic Carbon		*					9	

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION		Screening Criteria [a]		OLD-02-04A				
SAMPLE ID	CAS Number	Florida GCTL[b]	NTC BGSV[c]	02G00401	02G00402	02G00403	02G00410	NTC02G04A11
LAB ID				G5782005	C127447003	A8L090188001	A9G300236002	A9J260203008
SAMPLE DATE				9/14/94	8/8/97	12/7/98	7/29/99	10/25/99
Volatile Organics (µg/L)								
1,2,4-Trimethylbenzene	95-63-6	10						
1,3,5-Trimethylbenzene	108-67-8	10						
2-Butanone	78-93-3	4200						
4-Isopropyltoluene		*						
Acetone	67-64-1	700						
Benzene	71-43-2	1						
Bromodichloromethane	75-27-4	0.6						
Chloroform	67-66-3	5.7						
Chloromethane	74-87-3	2.7						
cis-1,2-Dichloroethene	156-59-2	70						
Ethane		*						
Ethylbenzene	100-41-4	30						
Isopropylbenzene	98-82-8	0.8						
m-Xylene & p-Xylene		*						
Methane		*				5.6		
Methylene Chloride	75-09-2	5				0.73 J		
o-Xylene		*						
Toluene	108-88-3	40						
Trichloroethene	79-01-6	3						
Xylenes, Total	1330-20-7	20						
Semivolatiles (µg/L)				NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	117-81-7	6						
o-Dichlorobenzene		*						
Phenanthrene	85-01-8	210						
Phenol	108-95-2	10						
Inorganics (µg/L)				NA	NA	NA	NA	NA
Aluminum	7429-90-5	200	4067					
Antimony	7440-36-0	6	4.1					
Arsenic	7440-38-2	50	5					
Barium	7440-39-3	2000	31.4					
Beryllium	7440-41-7	4	*					
Calcium	7440-70-2	*	36830					
Chromium	7440-47-3	100	7.8					
Copper	7440-50-8	1000	5.4					
Iron	7439-89-6	300	1227					
Iron (Dissolved)	7439-89-6	300	1227	NA	NA	NA	NA	NA
Lead	7439-92-1	15	4					
Magnesium	7439-95-4	*	4560					
Manganese	7439-96-5	50	17					
Mercury	7439-97-6	2	0.12					
Potassium	7440-09-7	*	5400					
Selenium	7782-49-2	50	9.7					
Sodium	7440-23-5	160000	18222					
Vanadium	7440-62-2	49	20.6					
Zinc	7440-66-6	5000	4					
Radionuclides (pCi/L)				NA	NA	NA	NA	NA
Gross Alpha		13						
Gross Beta		9.5						
Misc (mg/L)				NA	NA		NA	NA
Total Organic Carbon		*				5		

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION		Screening Criteria [a]		OLD-02-04A	OLD-02-05A			
SAMPLE ID	CAS Number	Florida GCTL[b]	NTC BGSV[c]	NTC02G04A11-D	02G00501	02G00502	02G00502	02G00503
LAB ID				A9J260203009	G5782006	G7818001	C127434003	A8L090188004
SAMPLE DATE				10/25/99	9/14/94	6/14/95	8/7/97	12/7/98
Volatile Organics (µg/L)								
1,2,4-Trimethylbenzene	95-63-6	10						
1,3,5-Trimethylbenzene	108-67-8	10						
2-Butanone	78-93-3	4200			1 J			
4-Isopropyltoluene		*						
Acetone	67-64-1	700						
Benzene	71-43-2	1						
Bromodichloromethane	75-27-4	0.6				0.3 J		
Chloroform	67-66-3	5.7				5		
Chloromethane	74-87-3	2.7						
cis-1,2-Dichloroethene	156-59-2	70						
Ethane		*						
Ethylbenzene	100-41-4	30						
Isopropylbenzene	98-82-8	0.8						
m-Xylene & p-Xylene		*						
Methane		*						7.9
Methylene Chloride	75-09-2	5						0.65 J
o-Xylene		*						
Toluene	108-88-3	40						
Trichloroethene	79-01-6	3						
Xylenes, Total	1330-20-7	20						
Semivolatiles (µg/L)				NA	NA		NA	NA
bis(2-Ethylhexyl)phthalate	117-81-7	6						
o-Dichlorobenzene		*						
Phenanthrene	85-01-8	210						
Phenol	108-95-2	10						
Metals (µg/L)				NA	NA		NA	NA
Aluminum	7429-90-5	200	4067			1070		
Antimony	7440-36-0	6	4.1			7.3 B		
Arsenic	7440-38-2	50	5			2.5 B		
Barium	7440-39-3	2000	31.4			9.7 B		
Beryllium	7440-41-7	4	*					
Calcium	7440-70-2	*	36830			33100		
Chromium	7440-47-3	100	7.8					
Copper	7440-50-8	1000	5.4					
Iron	7439-89-6	300	1227			90.8 B		
Iron (Dissolved)	7439-89-6	300	1227	NA	NA	NA	NA	NA
Lead	7439-92-1	15	4					
Magnesium	7439-95-4	*	4560			1620 B		
Manganese	7439-96-5	50	17			9.4 B		
Mercury	7439-97-6	2	0.12					
Potassium	7440-09-7	*	5400			1480 B		
Selenium	7782-49-2	50	9.7					
Sodium	7440-23-5	160000	18222			5940		
Vanadium	7440-62-2	49	20.6			11.7 B		
Zinc	7440-66-6	5000	4			49.4		
Radionuclides (pCi/L)				NA	NA		NA	NA
Gross Alpha		13				4.6		
Gross Beta		9.5				6		
Misc (mg/L)				NA	NA	NA	NA	
Total Organic Carbon		*						18

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION		Screening Criteria [a]		OLD-02-06A			OLD-02-07C	
SAMPLE ID	CAS	Florida	NTC	02G00601	02G00602	02G00603	02G00701	02G00703
LAB ID	Number	GCTL[b]	BGSV [c]	G5781002	C127435003	A8K210147004	G7063009	A8L150167002
SAMPLE DATE				9/14/94	8/7/97	11/19/98	3/10/95	12/11/98
Volatile Organics (µg/L)								
1,2,4-Trimethylbenzene	95-63-6	10						
1,3,5-Trimethylbenzene	108-67-8	10						
2-Butanone	78-93-3	4200						
4-Isopropyltoluene		*						
Acetone	67-64-1	700						
Benzene	71-43-2	1						
Bromodichloromethane	75-27-4	0.6						
Chloroform	67-66-3	5.7						
Chloromethane	74-87-3	2.7						
cis-1,2-Dichloroethene	156-59-2	70						
Ethane		*						
Ethylbenzene	100-41-4	30						
Isopropylbenzene	98-82-8	0.8						
m-Xylene & p-Xylene		*						
Methane		*				19		20
Methylene Chloride	75-09-2	5				3.7 J		1.5 J
o-Xylene		*						
Toluene	108-88-3	40						
Trichloroethene	79-01-6	3						
Xylenes, Total	1330-20-7	20					0.2 J	
Semivolatiles (µg/L)					NA	NA		NA
bis(2-Ethylhexyl)phthalate	117-81-7	6						
o-Dichlorobenzene		*						
Phenanthrene	85-01-8	210						
Phenol	108-95-2	10						
Inorganics (µg/L)					NA	NA		NA
Aluminum	7429-90-5	200	4067	5500			466	
Antimony	7440-36-0	6	4.1					
Arsenic	7440-38-2	50	5				9.4 B	
Barium	7440-39-3	2000	31.4	8.2 B			36.6 B	
Beryllium	7440-41-7	4	*	0.21 J				
Calcium	7440-70-2	*	36830	35700			14700	
Chromium	7440-47-3	100	7.8	11.9				
Copper	7440-50-8	1000	5.4	6.3 B				
Iron	7439-89-6	300	1227	159			1450	
Iron (Dissolved)	7439-89-6	300	1227	NA	NA	NA	NA	NA
Lead	7439-92-1	15	4	3.7				
Magnesium	7439-95-4	*	4560	545 B			3430 B	
Manganese	7439-96-5	50	17	1.5 B			140	
Mercury	7439-97-6	2	0.12	0.18 B				
Potassium	7440-09-7	*	5400	2620 B			884 B	
Selenium	7782-49-2	50	9.7	2.4 J				
Sodium	7440-23-5	160000	18222	2750 B			8610	
Vanadium	7440-62-2	49	20.6	23.6 B				
Zinc	7440-66-6	5000	4				8.4 B	
Radionuclides (pCi/L)					NA	NA		NA
Gross Alpha		13					4	
Gross Beta		9.5					4.3	
Misc (mg/L)				NA	NA		NA	
Total Organic Carbon		*				5		2

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION		Screening Criteria [a]		OLD-02-08C				
SAMPLE ID	CAS Number	Florida GCTL[b]	NTC BGSV [c]	02G00801	02G00802	02G00803	02G00810	NTC02G08C11
LAB ID				G6991001	C127484001	A8K230141005	A9G150151003	A9J270191002
SAMPLE DATE				3/1/95	8/11/97	11/20/98	7/14/99	10/26/99
Volatile Organics (µg/L)								
1,2,4-Trimethylbenzene	95-63-6	10			1.9	1.8 J		
1,3,5-Trimethylbenzene	108-67-8	10			0.8			
2-Butanone	78-93-3	4200						
4-Isopropyltoluene		*						
Acetone	67-64-1	700						
Benzene	71-43-2	1			35	23	14	18
Bromodichloromethane	75-27-4	0.6						
Chloroform	67-66-3	5.7						
Chloromethane	74-87-3	2.7						
cis-1,2-Dichloroethene	156-59-2	70		1	0.83	0.65 J	0.61 J	0.86 J
Ethane		*				0.61		
Ethylbenzene	100-41-4	30		0.6 J				
Isopropylbenzene	98-82-8	0.8						
m-Xylene & p-Xylene		*						
Methane		*						
Methylene Chloride	75-09-2	5						
o-Xylene		*						
Toluene	108-88-3	40						
Trichloroethene	79-01-6	3						
Xylenes, Total	1330-20-7	20						
Semivolatiles (µg/L)					NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	117-81-7	6						
o-Dichlorobenzene		*						
Phenanthrene	85-01-8	210						
Phenol	108-95-2	10		2 J				
Inorganics (µg/L)					NA	NA	NA	NA
Aluminum	7429-90-5	200	4067	2930				
Antimony	7440-36-0	6	4.1					
Arsenic	7440-38-2	50	5					
Barium	7440-39-3	2000	31.4	49.7 B				
Beryllium	7440-41-7	4	*					
Calcium	7440-70-2	*	36830	4920 B				
Chromium	7440-47-3	100	7.8	4.4 B				
Copper	7440-50-8	1000	5.4					
Iron	7439-89-6	300	1227	2150				
Iron (Dissolved)	7439-89-6	300	1227	NA	NA	NA	NA	NA
Lead	7439-92-1	15	4					
Magnesium	7439-95-4	*	4560	5220				
Manganese	7439-96-5	50	17	18.2				
Mercury	7439-97-6	2	0.12					
Potassium	7440-09-7	*	5400	1300 B				
Selenium	7782-49-2	50	9.7					
Sodium	7440-23-5	160000	18222	5460				
Vanadium	7440-62-2	49	20.6					
Zinc	7440-66-6	5000	4	5.1 B				
Radionuclides (pCi/L)					NA	NA	NA	NA
Gross Alpha		13		8				
Gross Beta		9.5		6.4				
TOC (mg/L)				NA	NA		NA	NA
Total Organic Carbon		*				5		

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION		Screening Criteria [a]		OLD-02-08C	OLD-02-09A		
SAMPLE ID	CAS Number	Florida	NTC	NTC02G08C11-D	02G00901	02G00902	02G00903
LAB ID		GCTL[b]	BGSV[c]	A9J270191003	G6991002	C127435001	A8K230141004
SAMPLE DATE				10/26/99	3/1/95	8/7/97	11/20/98
Volatile Organics (µg/L)							
1,2,4-Trimethylbenzene	95-63-6	10					
1,3,5-Trimethylbenzene	108-67-8	10					
2-Butanone	78-93-3	4200					
4-Isopropyltoluene		*					
Acetone	67-64-1	700					
Benzene	71-43-2	1		18			
Bromodichloromethane	75-27-4	0.6					
Chloroform	67-66-3	5.7					
Chloromethane	74-87-3	2.7					
cis-1,2-Dichloroethene	156-59-2	70		0.77 J			
Ethane		*					
Ethylbenzene	100-41-4	30					
Isopropylbenzene	98-82-8	0.8					
m-Xylene & p-Xylene		*					
Methane		*					3.8
Methylene Chloride	75-09-2	5					
o-Xylene		*					
Toluene	108-88-3	40					
Trichloroethene	79-01-6	3					
Xylenes, Total	1330-20-7	20					
Semivolatiles (µg/L)				NA		NA	NA
bis(2-Ethylhexyl)phthalate	117-81-7	6					
o-Dichlorobenzene		*					
Phenanthrene	85-01-8	210					
Phenol	108-95-2	10					
Inorganics (µg/L)				NA		NA	NA
Aluminum	7429-90-5	200	4067		1080		
Antimony	7440-36-0	6	4.1		3.7 J		
Arsenic	7440-38-2	50	5				
Barium	7440-39-3	2000	31.4		10 B		
Beryllium	7440-41-7	4	*				
Calcium	7440-70-2	*	36830		38100		
Chromium	7440-47-3	100	7.8				
Copper	7440-50-8	1000	5.4		21.6 B		
Iron	7439-89-6	300	1227		60.4 B		
Iron (Dissolved)	7439-89-6	300	1227	NA	NA	NA	NA
Lead	7439-92-1	15	4				
Magnesium	7439-95-4	*	4560		2030 B		
Manganese	7439-96-5	50	17		23.8		
Mercury	7439-97-6	2	0.12		0.19 B		
Potassium	7440-09-7	*	5400		1190 B		
Selenium	7782-49-2	50	9.7				
Sodium	7440-23-5	160000	18222		2680 B		
Vanadium	7440-62-2	49	20.6				
Zinc	7440-66-6	5000	4		2.6 B		
Radionuclides (pCi/L)				NA		NA	NA
Gross Alpha		13			2.3		
Gross Beta		9.5			5.4		
Misc (mg/L)				NA	NA	NA	
Total Organic Carbon		*					16

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION		Screening Criteria [a]		OLD-02-10C				
SAMPLE ID	CAS Number	Florida	NTC	02G01001	02G01002	02G01003	02G01010	NTC02G10C11
LAB ID		GCTL[b]	BGSV[c]	G6991003	C127504001	A8K230141001	A9G190102003	A9J300126001
SAMPLE DATE				3/1/95	8/12/97	11/20/98	7/14/99	10/27/99
Volatile Organics (µg/L)								
1,2,4-Trimethylbenzene	95-63-6	10						
1,3,5-Trimethylbenzene	108-67-8	10			0.73			
2-Butanone	78-93-3	4200						
4-Isopropyltoluene		*						
Acetone	67-64-1	700						23 J
Benzene	71-43-2	1			7.8			0.25 J
Bromodichloromethane	75-27-4	0.6						
Chloroform	67-66-3	5.7						
Chloromethane	74-87-3	2.7						
cis-1,2-Dichloroethene	156-59-2	70		1			0.46 J	0.42 J
Ethane		*						
Ethylbenzene	100-41-4	30						
Isopropylbenzene	98-82-8	0.8						
m-Xylene & p-Xylene		*						
Methane		*				1.2		
Methylene Chloride	75-09-2	5				0.5 J		
o-Xylene		*						
Toluene	108-88-3	40						0.28 J
Trichloroethene	79-01-6	3						
Xylenes, Total	1330-20-7	20						
Semivolatiles (µg/L)					NA	NA	NA	
bis(2-Ethylhexyl)phthalate	117-81-7	6						
o-Dichlorobenzene		*						
Phenanthrene	85-01-8	210						
Phenol	108-95-2	10		7 J				
Inorganics (µg/L)					NA	NA	NA	
Aluminum	7429-90-5	200	4067	1460				NA
Antimony	7440-36-0	6	4.1	3.4 B				NA
Arsenic	7440-38-2	50	5					NA
Barium	7440-39-3	2000	31.4	43.3 B				NA
Beryllium	7440-41-7	4	*	0.37 B				NA
Calcium	7440-70-2	*	36830	15000				NA
Chromium	7440-47-3	100	7.8	2.5 B				NA
Copper	7440-50-8	1000	5.4					NA
Iron	7439-89-6	300	1227	2030				NA
Iron (Dissolved)	7439-89-6	300	1227	NA	NA	NA	NA	
Lead	7439-92-1	15	4					NA
Magnesium	7439-95-4	*	4560	7400				NA
Manganese	7439-96-5	50	17	21.8				NA
Mercury	7439-97-6	2	0.12					NA
Potassium	7440-09-7	*	5400	1840 B				NA
Selenium	7782-49-2	50	9.7					NA
Sodium	7440-23-5	160000	18222	7600				NA
Vanadium	7440-62-2	49	20.6	3.8 B				NA
Zinc	7440-66-6	5000	4	4.8 B				NA
Radionuclides (pCi/L)					NA	NA	NA	
Gross Alpha		13		10.4				
Gross Beta		9.5		7.3				
Misc. (mg/L)				NA	NA		NA	
Total Organic Carbon		*				7		

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION		Screening Criteria [a]		OLD-02-11A			
SAMPLE ID	CAS Number	Florida GCTL[b]	NTC BGSV[c]	02G01101	02G01102	02G01103	02G01103D
LAB ID				G6991004	C127447001	A8K230141002	A8K230141003
SAMPLE DATE				3/1/95	8/8/97	11/20/98	11/20/98
Volatile Organics (µg/L)							
1,2,4-Trimethylbenzene	95-63-6	10					
1,3,5-Trimethylbenzene	108-67-8	10					
2-Butanone	78-93-3	4200					
4-Isopropyltoluene		*					
Acetone	67-64-1	700					
Benzene	71-43-2	1					
Bromodichloromethane	75-27-4	0.6					
Chloroform	67-66-3	5.7					
Chloromethane	74-87-3	2.7					
cis-1,2-Dichloroethene	156-59-2	70				0.49 J	0.49 J
Ethane		*					
Ethylbenzene	100-41-4	30					
Isopropylbenzene	98-82-8	0.8					
m-Xylene & p-Xylene		*					
Methane		*					
Methylene Chloride	75-09-2	5					
o-Xylene		*					
Toluene	108-88-3	40					
Trichloroethene	79-01-6	3					
Xylenes, Total	1330-20-7	20					
Semivolatiles (µg/L)						NA	NA
bis(2-Ethylhexyl)phthalate	117-81-7	6					
o-Dichlorobenzene		*					
Phenanthrene	85-01-8	210		2 J			
Phenol	108-95-2	10					
Inorganics (µg/L)					NA	NA	NA
Aluminum	7429-90-5	200	4067	294			
Antimony	7440-36-0	6	4.1				
Arsenic	7440-38-2	50	5				
Barium	7440-39-3	2000	31.4	7.4 B			
Beryllium	7440-41-7	4	*				
Calcium	7440-70-2	*	36830	16300			
Chromium	7440-47-3	100	7.8				
Copper	7440-50-8	1000	5.4				
Iron	7439-89-6	300	1227	332			
Iron (Dissolved)	7439-89-6	300	1227	NA	NA	NA	NA
Lead	7439-92-1	15	4				
Magnesium	7439-95-4	*	4560	1580 B			
Manganese	7439-96-5	50	17	15.6			
Mercury	7439-97-6	2	0.12				
Potassium	7440-09-7	*	5400	1830 B			
Selenium	7782-49-2	50	9.7				
Sodium	7440-23-5	160000	18222	2790 B			
Vanadium	7440-62-2	49	20.6				
Zinc	7440-66-6	5000	4	6 B			
Radionuclides (pCi/L)					NA	NA	NA
Gross Alpha		13		1.3			
Gross Beta		9.5		3.7			
Misc (mg/L)				NA	NA		
Total Organic Carbon		*				3	3

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION		Screening Criteria [a]		OLD-02-12C			
SAMPLE ID	CAS Number	Florida GCTL[b]	NTC BGSV[c]	02G01201	02G01202	02G01210	NTC02G12C11
LAB ID				C127723003	A8K210147003	A9G150151002	A9J270191001
SAMPLE DATE				8/22/97	11/19/98	7/14/99	10/26/99
Volatile Organics (µg/L)							
1,2,4-Trimethylbenzene	95-63-6	10					
1,3,5-Trimethylbenzene	108-67-8	10					
2-Butanone	78-93-3	4200					
4-Isopropyltoluene		*					
Acetone	67-64-1	700					
Benzene	71-43-2	1					
Bromodichloromethane	75-27-4	0.6					
Chloroform	67-66-3	5.7					
Chloromethane	74-87-3	2.7					
cis-1,2-Dichloroethene	156-59-2	70					
Ethane		*					
Ethylbenzene	100-41-4	30					
Isopropylbenzene	98-82-8	0.8					
m-Xylene & p-Xylene		*					
Methane		*			8		
Methylene Chloride	75-09-2	5			0.67 J		
o-Xylene		*					
Toluene	108-88-3	40					
Trichloroethene	79-01-6	3					
Xylenes, Total	1330-20-7	20					
Semivolatiles (µg/L)				NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	117-81-7	6					
o-Dichlorobenzene		*					
Phenanthrene	85-01-8	210					
Phenol	108-95-2	10					
Inorganics (µg/L)				NA	NA	NA	NA
Aluminum	7429-90-5	200	4067				
Antimony	7440-36-0	6	4.1				
Arsenic	7440-38-2	50	5				
Barium	7440-39-3	2000	31.4				
Beryllium	7440-41-7	4	*				
Calcium	7440-70-2	*	36830				
Chromium	7440-47-3	100	7.8				
Copper	7440-50-8	1000	5.4				
Iron	7439-89-6	300	1227				
Iron (Dissolved)	7439-89-6	300	1227	NA	NA	NA	673
Lead	7439-92-1	15	4				
Magnesium	7439-95-4	*	4560				
Manganese	7439-96-5	50	17				
Mercury	7439-97-6	2	0.12				
Potassium	7440-09-7	*	5400				
Selenium	7782-49-2	50	9.7				
Sodium	7440-23-5	160000	18222				
Vanadium	7440-62-2	49	20.6				
Zinc	7440-66-6	5000	4				
Radionuclides (pCi/L)				NA	NA	NA	NA
Gross Alpha		13					
Gross Beta		9.5					
Misc (mg/L)				NA		NA	NA
Total Organic Carbon		*			2		

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION		Screening Criteria [a]		OLD-02-13C			
SAMPLE ID	CAS Number	Florida GCTL[b]	NTC BGSV[c]	02G01301	02G01302	02G01310	NTC02G13C11
LAB ID				C127723004	A8L110189007	A9G190102008	A9J260203010
SAMPLE DATE				8/22/97	12/10/98	7/16/99	10/25/99
Volatile Organics (µg/L)							
1,2,4-Trimethylbenzene	95-63-6	10		1.2			
1,3,5-Trimethylbenzene	108-67-8	10			1.6 J		
2-Butanone	78-93-3	4200					
4-Isopropyltoluene		*					
Acetone	67-64-1	700					
Benzene	71-43-2	1		83	71	86	83
Bromodichloromethane	75-27-4	0.6					
Chloroform	67-66-3	5.7					
Chloromethane	74-87-3	2.7					
cis-1,2-Dichloroethene	156-59-2	70		4.1	3.3	4.1	5.2
Ethane		*			1.4		
Ethylbenzene	100-41-4	30		1.9	0.5 J	1.3 J	1.3J
Isopropylbenzene	98-82-8	0.8					
m-Xylene & p-Xylene		*					
Methane		*					
Methylene Chloride	75-09-2	5			0.62 J		
o-Xylene		*					
Toluene	108-88-3	40					
Trichloroethene	79-01-6	3		0.98		0.98 J	0.68J
Xylenes, Total	1330-20-7	20					
Semivolatiles (µg/L)				NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	117-81-7	6					
o-Dichlorobenzene		*					
Phenanthrene	85-01-8	210					
Phenol	108-95-2	10					
Inorganics (µg/L)				NA	NA	NA	NA
Aluminum	7429-90-5	200	4067				
Antimony	7440-36-0	6	4.1				
Arsenic	7440-38-2	50	5				
Barium	7440-39-3	2000	31.4				
Beryllium	7440-41-7	4	*				
Calcium	7440-70-2	*	36830				
Chromium	7440-47-3	100	7.8				
Copper	7440-50-8	1000	5.4				
Iron	7439-89-6	300	1227				
Iron (Dissolved)	7439-89-6	300	1227	NA	NA	NA	320
Lead	7439-92-1	15	4				
Magnesium	7439-95-4	*	4560				
Manganese	7439-96-5	50	17				
Mercury	7439-97-6	2	0.12				
Potassium	7440-09-7	*	5400				
Selenium	7782-49-2	50	9.7				
Sodium	7440-23-5	160000	18222				
Vanadium	7440-62-2	49	20.6				
Zinc	7440-66-6	5000	4				
Radionuclides (pCi/L)				NA	NA	NA	
Gross Alpha		13					
Gross Beta		9.5					
Misc (mg/L)				NA		NA	
Total Organic Carbon		*			3		

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION		Screening Criteria [a]		OLD-02-14C				
SAMPLE ID	CAS Number	Florida	NTC	02G01401	02G01401-D	02G01402	02G01410	NTC02G14C11
LAB ID		GCTL[b]	BGSV [c]	C127723001	C127723006	A8L090188006	A9G190102002	A9J270191005
SAMPLE DATE				8/22/97	8/22/97	12/8/98	7/15/99	10/26/99
Volatile Organics (ug/L)								
1,2,4-Trimethylbenzene	95-63-6	10						
1,3,5-Trimethylbenzene	108-67-8	10						
2-Butanone	78-93-3	4200						
4-Isopropyltoluene		*						
Acetone	67-64-1	700						
Benzene	71-43-2	1						
Bromodichloromethane	75-27-4	0.6						
Chloroform	67-66-3	5.7		0.9				
Chloromethane	74-87-3	2.7						
cis-1,2-Dichloroethene	156-59-2	70					0.21 J	24 J
Ethane		*						
Ethylbenzene	100-41-4	30						
Isopropylbenzene	98-82-8	0.8						
m-Xylene & p-Xylene		*						
Methane		*						
Methylene Chloride	75-09-2	5				0.65 J		
o-Xylene		*						
Toluene	108-88-3	40						
Trichloroethene	79-01-6	3						
Xylenes, Total	1330-20-7	20						
Semivolatiles (ug/L)				NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	117-81-7	6						
o-Dichlorobenzene		*						
Phenanthrene	85-01-8	210						
Phenol	108-95-2	10						
[illegible] (ug/L)				NA	NA	NA	NA	NA
Aluminum	7429-90-5	200	4067					
Antimony	7440-36-0	6	4.1					
Arsenic	7440-38-2	50	5					
Barium	7440-39-3	2000	31.4					
Beryllium	7440-41-7	4	*					
Calcium	7440-70-2	*	36830					
Chromium	7440-47-3	100	7.8					
Copper	7440-50-8	1000	5.4					
Iron	7439-89-6	300	1227					
Iron (Dissolved)	7439-89-6	300	1227	NA	NA	NA	NA	NA
Lead	7439-92-1	15	4					
Magnesium	7439-95-4	*	4560					
Manganese	7439-96-5	50	17					
Mercury	7439-97-6	2	0.12					
Potassium	7440-09-7	*	5400					
Selenium	7782-49-2	50	9.7					
Sodium	7440-23-5	160000	18222					
Vanadium	7440-62-2	49	20.6					
Zinc	7440-66-6	5000	4					
Radionuclides (pCi/L)				NA	NA	NA	NA	NA
Gross Alpha		13						
Gross Beta		9.5						
[illegible] (mg/L)				NA	NA		NA	NA
Total Organic Carbon		*				3		

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION		Screening Criteria [a]		OLD-02-15A		OLD-02-16B	
SAMPLE ID	CAS Number	Florida GCTL[b]	NTC BGSV[c]	02G01501	02G01502	02G01601	02G01602
LAB ID				OTCW3*2	A8L110189003	OTCW3*3	A8L110189002
SAMPLE DATE				12/29/97	12/9/98	12/29/97	12/9/98
Volatile Organics (µg/L)							
1,2,4-Trimethylbenzene	95-63-6	10					
1,3,5-Trimethylbenzene	108-67-8	10					
2-Butanone	78-93-3	4200					
4-Isopropyltoluene		*		0.67			
Acetone	67-64-1	700					
Benzene	71-43-2	1					
Bromodichloromethane	75-27-4	0.6					
Chloroform	67-66-3	5.7					
Chloromethane	74-87-3	2.7					
cis-1,2-Dichloroethene	156-59-2	70					
Ethane		*					
Ethylbenzene	100-41-4	30					
Isopropylbenzene	98-82-8	0.8					
m-Xylene & p-Xylene		*					
Methane		*					
Methylene Chloride	75-09-2	5			0.51 J		
o-Xylene		*					
Toluene	108-88-3	40					
Trichloroethene	79-01-6	3					
Xylenes, Total	1330-20-7	20					
Semivolatiles (µg/L)				NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	117-81-7	6					
o-Dichlorobenzene		*					
Phenanthrene	85-01-8	210					
Phenol	108-95-2	10					
Inorganics (µg/L)				NA	NA	NA	NA
Aluminum	7429-90-5	200	4067				
Antimony	7440-36-0	6	4.1				
Arsenic	7440-38-2	50	5				
Barium	7440-39-3	2000	31.4				
Beryllium	7440-41-7	4	*				
Calcium	7440-70-2	*	36830				
Chromium	7440-47-3	100	7.8				
Copper	7440-50-8	1000	5.4				
Iron	7439-89-6	300	1227				
Iron (Dissolved)	7439-89-6	300	1227	NA	NA	NA	NA
Lead	7439-92-1	15	4				
Magnesium	7439-95-4	*	4560				
Manganese	7439-96-5	50	17				
Mercury	7439-97-6	2	0.12				
Potassium	7440-09-7	*	5400				
Selenium	7782-49-2	50	9.7				
Sodium	7440-23-5	160000	18222				
Vanadium	7440-62-2	49	20.6				
Zinc	7440-66-6	5000	4				
Radionuclides (pCi/L)				NA	NA	NA	NA
Gross Alpha		13					
Gross Beta		9.5					
Misc (mg/L)				NA		NA	
Total Organic Carbon		*			18		2

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION		Screening Criteria [a]		OLD-02-17C			
SAMPLE ID	CAS	Florida	NTC	02G01701	02G01702	02G01710	NTC02G17C11
LAB ID	Number	GCTL[b]	BGSV[c]	OTCW3*4	A8L110189004	A9G190102004	A9J300125001
SAMPLE DATE				12/29/97	12/9/98	7/15/99	10/27/99
Volatile Organics (µg/L)							
1,2,4-Trimethylbenzene	95-63-6	10					
1,3,5-Trimethylbenzene	108-67-8	10					
2-Butanone	78-93-3	4200					
4-Isopropyltoluene		*					
Acetone	67-64-1	700					
Benzene	71-43-2	1					
Bromodichloromethane	75-27-4	0.6					
Chloroform	67-66-3	5.7					
Chloromethane	74-87-3	2.7					
cis-1,2-Dichloroethene	156-59-2	70					
Ethane		*					
Ethylbenzene	100-41-4	30					
Isopropylbenzene	98-82-8	0.8					
m-Xylene & p-Xylene		*					
Methane		*					
Methylene Chloride	75-09-2	5					
o-Xylene		*					
Toluene	108-88-3	40					
Trichloroethene	79-01-6	3					
Xylenes, Total	1330-20-7	20					
Semivolatiles (µg/L)				NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	117-81-7	6					
o-Dichlorobenzene		*					
Phenanthrene	85-01-8	210					
Phenol	108-95-2	10					
Inorganics (µg/L)				NA	NA	NA	NA
Aluminum	7429-90-5	200	4067				
Antimony	7440-36-0	6	4.1				
Arsenic	7440-38-2	50	5				
Barium	7440-39-3	2000	31.4				
Beryllium	7440-41-7	4	*				
Calcium	7440-70-2	*	36830				
Chromium	7440-47-3	100	7.8				
Copper	7440-50-8	1000	5.4				
Iron	7439-89-6	300	1227				
Iron (Dissolved)	7439-89-6	300	1227	NA	NA	NA	1400
Lead	7439-92-1	15	4				
Magnesium	7439-95-4	*	4560				
Manganese	7439-96-5	50	17				
Mercury	7439-97-6	2	0.12				
Potassium	7440-09-7	*	5400				
Selenium	7782-49-2	50	9.7				
Sodium	7440-23-5	160000	18222				
Vanadium	7440-62-2	49	20.6				
Zinc	7440-66-6	5000	4				
Radionuclides (pCi/L)				NA	NA	NA	NA
Gross Alpha		13					
Gross Beta		9.5					
Misc (mg/L)				NA		NA	NA
Total Organic Carbon		*			2		

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION		Screening Criteria [a]		OLD-02-18B		OLD-02-19C		
SAMPLE ID	CAS Number	Florida GCTL[d]	NTC BGSV [c]	02G01801	02G01802	02G01901	02G01901D	02G01902
LAB ID				OTCW3*5	A8L110189005	OTCW3*6	OTCW3*7	A8L110189006
SAMPLE DATE				12/29/97	12/9/98	12/29/97	12/29/97	12/9/98
Volatile Organics (µg/L)								
1,2,4-Trimethylbenzene	95-63-6	10						
1,3,5-Trimethylbenzene	108-67-8	10						
2-Butanone	78-93-3	4200						
4-Isopropyltoluene		*						
Acetone	67-64-1	700						
Benzene	71-43-2	1				52.1	53.5	38
Bromodichloromethane	75-27-4	0.6						
Chloroform	67-66-3	5.7						
Chloromethane	74-87-3	2.7						
cis-1,2-Dichloroethene	156-59-2	70				1.75	1.68	1.9 J
Ethane		*						0.74
Ethylbenzene	100-41-4	30				0.7	0.66	0.67 J
Isopropylbenzene	98-82-8	0.8						
m-Xylene & p-Xylene		*						1.5 J
Methane		*			23			
Methylene Chloride	75-09-2	5			0.58 J			0.69 J
o-Xylene		*						0.61 J
Toluene	108-88-3	40						
Trichloroethene	79-01-6	3						
Xylenes, Total	1330-20-7	20				2.94	2.8	
Semivolatiles (µg/L)				NA		NA	NA	
bis(2-Ethylhexyl)phthalate	117-81-7	6						
o-Dichlorobenzene		*			0.77 J			
Phenanthrene	85-01-8	210						
Phenol	108-95-2	10						
Inorganics (µg/L)				NA	NA	NA	NA	NA
Aluminum	7429-90-5	200	4067					
Antimony	7440-36-0	6	4.1					
Arsenic	7440-38-2	50	5					
Barium	7440-39-3	2000	31.4					
Beryllium	7440-41-7	4	*					
Calcium	7440-70-2	*	36830					
Chromium	7440-47-3	100	7.8					
Copper	7440-50-8	1000	5.4					
Iron	7439-89-6	300	1227					
Iron (Dissolved)	7439-89-6	300	1227	NA	NA	NA	NA	NA
Lead	7439-92-1	15	4					
Magnesium	7439-95-4	*	4560					
Manganese	7439-96-5	50	17					
Mercury	7439-97-6	2	0.12					
Potassium	7440-09-7	*	5400					
Selenium	7782-49-2	50	9.7					
Sodium	7440-23-5	160000	18222					
Vanadium	7440-62-2	49	20.6					
Zinc	7440-66-6	5000	4					
Radionuclides (pCi/L)				NA	NA	NA	NA	NA
Gross Alpha		13						
Gross Beta		9.5						
Misc (mg/L)				NA		NA	NA	
Total Organic Carbon		*			3			2

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION		Screening Criteria [a]		OLD-02-19C		OLD-02-20B		
SAMPLE ID	CAS Number	Florida GCTL[d]	NTC BGSV [c]	02G01910	NTC02G19C11	02G02001	02G02010	NTC02G20B11
LAB ID				A9G190102005	A9J300125002	A8K210147002	A9G190102006	A9J260203006
SAMPLE DATE				7/15/99	10/27/99	11/18/98	7/16/99	10/25/99
Volatile Organics (ug/L)								
1,2,4-Trimethylbenzene	95-63-6	10						
1,3,5-Trimethylbenzene	108-67-8	10				2.9 J		
2-Butanone	78-93-3	4200						
4-Isopropyltoluene		*						
Acetone	67-64-1	700						
Benzene	71-43-2	1		35		46	44	38
Bromodichloromethane	75-27-4	0.6						
Chloroform	67-66-3	5.7						
Chloromethane	74-87-3	2.7						
cis-1,2-Dichloroethene	156-59-2	70		1.5		3.7 J	3.3	3
Ethane		*				0.68		
Ethylbenzene	100-41-4	30		0.44 J			0.58 J	0.57J
Isopropylbenzene	98-82-8	0.8				1.3 J		
m-Xylene & p-Xylene		*						
Methane		*						
Methylene Chloride	75-09-2	5				1 J		
o-Xylene		*						
Toluene	108-88-3	40						
Trichloroethene	79-01-6	3				1.1 J	1.3 J	1.4J
Xylenes, Total	1330-20-7	20		1.5				
Semivolatiles (ug/L)				NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	117-81-7	6						
o-Dichlorobenzene		*						
Phenanthrene	85-01-8	210						
Phenol	108-95-2	10						
Inorganics (ug/L)				NA	NA	NA	NA	NA
Aluminum	7429-90-5	200	4067					
Antimony	7440-36-0	6	4.1					
Arsenic	7440-38-2	50	5					
Barium	7440-39-3	2000	31.4					
Beryllium	7440-41-7	4	*					
Calcium	7440-70-2	*	36830					
Chromium	7440-47-3	100	7.8					
Copper	7440-50-8	1000	5.4					
Iron	7439-89-6	300	1227					
Iron (Dissolved)	7439-89-6	300	1227	NA	1930	NA	NA	NA
Lead	7439-92-1	15	4					
Magnesium	7439-95-4	*	4560					
Manganese	7439-96-5	50	17					
Mercury	7439-97-6	2	0.12					
Potassium	7440-09-7	*	5400					
Selenium	7782-49-2	50	9.7					
Sodium	7440-23-5	160000	18222					
Vanadium	7440-62-2	49	20.6					
Zinc	7440-66-6	5000	4					
Radionuclides (pCi/L)				NA	NA	NA	NA	NA
Gross Alpha		13						
Gross Beta		9.5						
Misc (mg/L)				NA	NA		NA	
Total Organic Carbon		*				4		

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION		Screening Criteria [a]		OLD-02-21C				
SAMPLE ID	CAS Number	Florida GCTL[b]	NTC BGSV[c]	02G02101	02G02101D	02G02110	02G02110-D	NTC02G21C11
LAB ID				A8L090188002	A8L090188002	A9G190102007	A9G190102009	A9J260203007
SAMPLE DATE				12/7/98	12/7/98	7/16/99	7/16/99	10/25/99
Volatile Organics (µg/L)								
1,2,4-Trimethylbenzene	95-63-6	10						
1,3,5-Trimethylbenzene	108-67-8	10		4.5 J	3.4 J			
2-Butanone	78-93-3	4200						
4-Isopropyltoluene		*						
Acetone	67-64-1	700						
Benzene	71-43-2	1		50	56	40	40	34
Bromodichloromethane	75-27-4	0.6						
Chloroform	67-66-3	5.7						
Chloromethane	74-87-3	2.7						
cis-1,2-Dichloroethene	156-59-2	70		3.7	4	3	3.1	2.7
Ethane		*		1.3	1.2			
Ethylbenzene	100-41-4	30		1 J	1 J	0.47 J	0.48 J	0.37J
Isopropylbenzene	98-82-8	0.8						
m-Xylene & p-Xylene		*						
Methane		*						
Methylene Chloride	75-09-2	5		0.74 J	0.65 J			
o-Xylene		*						
Toluene	108-88-3	40						
Trichloroethene	79-01-6	3		1.5 J	1.6 J	1.9	1.8	1.9
Xylenes, Total	1330-20-7	20						
Semivolatiles (µg/L)				NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	117-81-7	6						
o-Dichlorobenzene		*						
Phenanthrene	85-01-8	210						
Phenol	108-95-2	10						
Inorganics (µg/L)				NA	NA	NA	NA	NA
Aluminum	7429-90-5	200	4067					
Antimony	7440-36-0	6	4.1					
Arsenic	7440-38-2	50	5					
Barium	7440-39-3	2000	31.4					
Beryllium	7440-41-7	4	*					
Calcium	7440-70-2	*	36830					
Chromium	7440-47-3	100	7.8					
Copper	7440-50-8	1000	5.4					
Iron	7439-89-6	300	1227					
Iron (Dissolved)	7439-89-6	300	1227					
Lead	7439-92-1	15	4					
Magnesium	7439-95-4	*	4560					
Manganese	7439-96-5	50	17					
Mercury	7439-97-6	2	0.12					
Potassium	7440-09-7	*	5400					
Selenium	7782-49-2	50	9.7					
Sodium	7440-23-5	160000	18222					
Vanadium	7440-62-2	49	20.6					
Zinc	7440-66-6	5000	4					
Radionuclides (pCi/L)				NA	NA	NA	NA	NA
Gross Alpha		13						
Gross Beta		9.5						
Misc (mg/L)						NA	NA	NA
Total Organic Carbon		*		7	7			

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Footnotes:

NA – Not Analyzed.
* indicates the criterion or screening value is not available.
"B" qualifier indicates a value above or equal to the instrument detection limit, but below the quantitation limit.
"J" qualifier indicates an estimated value.
(a) – For an organic analyte, the screening criterion is the GCTL; for an inorganic analyte with an established GCTL and BGSV, the screening criterion is the greater of the GCTL or the BGSV.
(b) – Groundwater Cleanup Target Level (Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C., May 26, 1999).
(c) – Background Screening Value (Background Sampling Report for NTC, Orlando, Florida; ABB Environmental Services, August 1995) for inorganics only.
Values in shaded cells meet or exceed the screening criteria.
Empty cells indicate non-detects.

TABLE 4

VALIDATED GROUNDWATER ANALYTICAL RESULTS - OCTOBER 1999
STUDY AREA 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION	CAS Number	Screening Criteria[a]		OLD-02-04A		OLD-02-08C		OLD-02-10C	OLD-02-12C
SAMPLE ID		Florida GCTL[b]	NTC BGSV[c]	NTC02G04A11	NTC02G04A11-D	NTC02G08C11	NTC02G08C11-D	NTC02G10C11	NTC02G12C11
LAB ID				A9J260203008	A9J260203009	A9J270191002	A9J270191003	A9J300126001	A9J270191001
SAMPLE DATE				10/25/99	10/25/99	10/26/99	10/26/99	10/27/99	10/26/99
Volatiles Organics (µg/L)									
1,1,1-Trichloroethane	71-55-6	200		1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2		1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	79-00-5	5		1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	75-34-3	70		1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	75-35-4	7		1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	107-06-2	3		1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	78-87-5	5		1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	78-93-3	4200		10 UR	10 UR	10 UR	10 UR	10 UR	10 UR
2-Hexanone	591-78-6	280		10 U	10 U	10 UJ	10 UJ	10 UJ	10 UJ
4-Methyl-2-Pentanone	108-10-1	560		10 U	10 U	10 U	10 U	10 U	10 U
Acetone	67-64-1	700		10 UR	10 UR	10 UR	10 UR	23 J	10 UR
Benzene	71-43-2	1		1 U	1 U	18	18	0.25 J	1 U
Bromodichloromethane	75-27-4	0.6		1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	75-25-2	4.4		1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	74-83-9	9.8		1 U	1 U	1 U	1 U	1 U	1 U
Carbon Disulfide	75-15-0	700		1 U	1 U	1 U	1 U	1 U	1 U
Carbon Tetrachloride	56-23-5	3		1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	108-90-7	100		1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	75-00-3	12		1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	67-66-3	5.7		1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	74-87-3	2.7		1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	70		1 U	1 U	0.86 J	0.77 J	0.42 J	1 U
cis-1,3-Dichloropropene	10061-01-5	*		1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	124-48-1	0.4		1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	100-41-4	30		1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	75-09-2	5		1 U	1 U	1 U	1 U	1 U	1 U
Styrene	100-42-5	100		1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	127-18-4	3		1 U	1 U	1 U	1 U	1 U	1 U
Toluene	108-88-3	40		1 U	1 U	1 U	1 U	0.28 J	1 U
trans-1,2-Dichloroethene	156-60-5	100		1 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	10061-02-6	*		1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	79-01-6	3		1 U	1 U	1 U	1 U	1 U	1 U
Vinyl Chloride	75-01-4	1		1 U	1 U	1 U	1 U	1 U	1 U
Xylenes, Total	1330-20-7	20		1 U	1 U	1 U	1 U	1 U	1 U
Inorganics (µg/L)									
Iron (Dissolved)	7439-89-6	300	1227	NA	NA	NA	NA	16.3 U	673
Manganese (Dissolved)	7439-96-5	50	17	NA	NA	NA	NA	2.4 U	4.5 U

TABLE 4

VALIDATED GROUNDWATER ANALYTICAL RESULTS - OCTOBER 1999
STUDY AREA 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION	CAS Number	Screening Criteria[a]		OLD-02-13C	OLD-02-14C	OLD-02-17C	OLD-02-19C	OLD-02-20B	OLD-02-21C
SAMPLE ID		Florida GCTL[b]	NTC BGSV[c]	NTC02G13C11	NTC02G14C11	NTC02G17C11	NTC02G19C11	NTC02G20B11	NTC02G21C11
LAB ID				A9J260203010	A9J270191005	A9J300125001	A9J300125002	A9J260203006	A9J260203007
SAMPLE DATE				10/25/99	10/26/99	10/27/99	10/27/99	10/25/99	10/25/99
Volatiles Organics (µg/L)									
1,1,1-Trichloroethane	71-55-6	200		3.3 U	1 U	1 U	1 U	2 U	1.2 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2		3.3 U	1 U	1 U	1 U	2 U	1.2 U
1,1,2-Trichloroethane	79-00-5	5		3.3 U	1 U	1 U	1 U	2 U	1.2 U
1,1-Dichloroethane	75-34-3	70		3.3 U	1 U	1 U	1 U	2 U	1.2 U
1,1-Dichloroethene	75-35-4	7		3.3 U	1 U	1 U	1 U	2 U	1.2 U
1,2-Dichloroethane	107-06-2	3		3.3 U	1 U	1 U	1 U	2 U	1.2 U
1,2-Dichloropropane	78-87-5	5		3.3 U	1 U	1 U	1 U	2 U	1.2 U
2-Butanone	78-93-3	4200		33 UR	10 UR	10 UR	10 UR	20 UR	12 UR
2-Hexanone	591-78-6	280		33 U	10 UJ	10 U	10 U	20 U	12 U
4-Methyl-2-Pentanone	108-10-1	560		33 U	10 U	10 U	10 U	20 U	12 U
Acetone	67-64-1	700		33 UR	10 UR	10 UR	10 UR	20 UR	12 UR
Benzene	71-43-2	1		83	1 U	1 U	1 U	38	34
Bromodichloromethane	75-27-4	0.6		3.3 U	1 U	1 U	1 U	2 U	1.2 U
Bromoform	75-25-2	4.4		3.3 U	1 U	1 U	1 U	2 U	1.2 U
Bromomethane	74-83-9	9.8		3.3 U	1 U	1 U	1 U	2 U	1.2 U
Carbon Disulfide	75-15-0	700		3.3 U	1 U	1 U	1 U	2 U	1.2 U
Carbon Tetrachloride	56-23-5	3		3.3 U	1 U	1 U	1 U	2 U	1.2 U
Chlorobenzene	108-90-7	100		3.3 U	1 U	1 U	1 U	2 U	1.2 U
Chloroethane	75-00-3	12		3.3 U	1 U	1 U	1 U	2 U	1.2 U
Chloroform	67-66-3	5.7		3.3 U	1 U	1 U	1 U	2 U	1.2 U
Chloromethane	74-87-3	2.7		3.3 U	1 U	1 UJ	1 UJ	2 U	1.2 U
cis-1,2-Dichloroethene	156-59-2	70		5.2	0.24 J	1 U	1 U	3	2.7
cis-1,3-Dichloropropene	10061-01-5	*		3.3 U	1 U	1 U	1 U	2 U	1.2 U
Dibromochloromethane	124-48-1	0.4		3.3 U	1 U	1 U	1 U	2 U	1.2 U
Ethylbenzene	100-41-4	30		1.3 J	1 U	1 U	1 U	0.57 J	0.37 J
Methylene Chloride	75-09-2	5		1.3 U	1 U	3.2 U	2.5 U	2 U	1.2 U
Styrene	100-42-5	100		3.3 U	1 U	1 U	1 U	2 U	1.2 U
Tetrachloroethene	127-18-4	3		3.3 U	1 U	1 U	1 U	2 U	1.2 U
Toluene	108-88-3	40		3.3 U	1 U	1 U	1 U	2 U	1.2 U
trans-1,2-Dichloroethene	156-60-5	100		3.3 U	1 U	1 U	1 U	2 U	1.2 U
trans-1,3-Dichloropropene	10061-02-6	*		3.3 U	1 U	1 U	1 U	2 U	1.2 U
Trichloroethene	79-01-6	3		0.68 J	1 U	1 U	1 U	1.4 J	1.9
Vinyl Chloride	75-01-4	1		3.3 U	1 U	1 U	1 U	2 U	1.2 U
Xylenes, Total	1330-20-7	20		3.3 U	1 U	1 U	1 U	2 U	1.2 U
Metals (µg/L)									
Iron (Dissolved)	7439-89-6	300	1227	320	NA	1400	1930	NA	NA
Manganese (Dissolved)	7439-96-5	50	17	4.7 U	NA	16.6 U	13.6 U	NA	NA

Footnotes:

µg/l – micrograms per liter.
"J" qualifier indicates an estimated value.
"U" qualifier indicates a non-detect.
"R" qualifier indicates a rejected value.
NA - Not Analyzed.
Values in shaded cells meet or exceed the screening criteria.

[a] – For an organic analyte, the screening criterion is the GCTL; for an inorganic analyte with an established GCTL and BGSV, the screening criterion is the greater of the GCTL or the BGSV.

[b] – Groundwater Cleanup Target Level (Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C. , May 26, 1999).

[c] – Background Screening Value Level (Background Sampling Report for NTC, Orlando, Florida; ABB Environmental Services, August 1995) for inorganics only.

TABLE 5

NATURAL ATTENUATION PARAMETER RESULTS
STUDY AREA 2

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION		OLD-02-10C	OLD-02-12C	OLD-02-13C	OLD-02-17C	OLD-02-19C
SAMPLE ID	CAS	NTC02G10C11	NTC02G12C11	NTC02G13C11	NTC02G17C11	NTC02G19C11
LAB ID	Number	A9J300126001	A9J270191001	A9J260203010	A9J300125001	A9J300125002
SAMPLE DATE		10/26/99	10/26/99	10/25/99	10/27/99	10/27/99
Inorganics (µg/L)						
Iron (Dissolved)	7439-89-6	16.3 U	673	320	1400	1930
Manganese (Dissolved)	7439-96-5	2.4 U	4.5 U	4.7 U	16.6 U	13.6 U
Non-Gaseous (mg/L)						
Chloride	16887-00-6	4.2	3.4	6.3	45.6	22.2
Dissolved Organic Carbon		NA	3	NA	NA	NA
Nitrate	14797-55-8	0.5 U	0.08	0.5 U	0.5 U	0.5 U
Nitrite	14797-65-0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Orthophosphate		0.09 J	0.1 J	0.52 J	1.2 J	0.14 J
Sulfate	14808-79-8	46.8	33.9	9.5	3.8	5.6
Total Alkilinity		120	13	5.8	20	5 U
Total Kjeldahl Nitrogen		2	1	1 U	1 U	1 U
Dissolved Gasses						
Carbon Dioxide (mg/L)		9.8/0.0*	67.9/56.8*	101	73.8/55.2*	74.8/59.6*
Ethane (µg/L)		0.198	0.011	0.722	0.03	0.004
Ethene (µg/L)		0.902	0.033	0 U	0.018	0.012
Hydrogen (nm/L)		41.7	1.5	0.9	0.9	0.7
Methane (µg/L)		306.39	2.9	1273.88	274.97	47.24
Nitrogen (mg/L)		15.8	16.1	14.6	15.6	14.44
Oxygen (mg/L)		3.14/0.4*	1.58/1.0*	2.67	1.83/1.0*	4.68/0.6*
Sulfide (mg/L)		0.80*	0.18*	NA	0.51*	0.8*
Ferrous Iron (mg/L)		0.07*	0.58*	NA	1.17*	2.22*
Hydrogen Sulfide (mg/L)		1.0*	0.3*	NA	1.0*	2*

Footnotes:

nm/L – nanomoles per liter.
"J" qualifier indicates an estimated value.
"U" qualifier indicates that the analyte was not detected.
NA – Not Analyzed.
* - Parameters measured in the field.

TABLE 6

POSITIVE DETECTIONS IN PRIVATE WELLS - AUGUST 9, 1999
AZALEA PARK NEIGHBORHOOD
ORLANDO, FLORIDA

WELL LOCATION		Screening Criteria[a]	20 Nancy Lee	20 Nancy Lee	66 Nancy Lee	72 Nancy Lee
WELL TYPE			Air conditioning	Irrigation	Irrigation	Irrigation
SAMPLE ID	CAS	Florida	NTC02DW01	NTC02DW02	NTC02DW004	NTC02DW03
LAB ID	Number	GCTL	A9H110245001	A9H110245002	A9G110245004	A9H110245003
SAMPLE DATE			8/9/99	8/9/99	8/9/99	8/9/99
Volatile Organics (g/L)						
Benzene	71-43-2	1	19	5.2	0.22 J	0.27 J
Carbon disulfide	75-15-0	700		0.23 J		0.24 J
cis-1,2-Dichloroethene	146-59-2	70	1.9	0.39 J		0.37 J
Ethylbenzene	100-41-4	30	1.2			
Tetrachloroethene	127-18-4	3			0.3 J	1.6
Trichloroethene	79-01-6	3				0.54 J
Styrene	100-42-5	100			0.77 J	
Toluene	108-88-3	40			0.49 J	
Xylenes, Total	1330-20-7	20	4.2			

Footnotes:

"J" qualifier indicates an estimated value.
NA – Not Analyzed.
Values in shaded cells meet or exceed the screening criteria.
Empty cells indicate non-detects.
[a] – Groundwater Cleanup Target Level (Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C., May 26, 1999).

ATTACHMENT A

GROUNDWATER SAMPLE LOG SHEETS

GROUNDWATER PURGING AND SAMPLING LOG

Date 10/25/99

Project Site Name: NTC Orlando
Project No.: CTO 0024

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:

Sample ID No.: NTC02604A11
Sample Location: NLD0204A
Sampled By: JR/GS
C.O.C. No.:

PURGING DATA

Casing Size (in.)	Gals/Ft. of Water	Time Hr:Min	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
1	0.041	1000	5.88	164	25.64	4.21	4.08	-12.9	1.51	100
2	0.163	1005	5.96	180	26.11	3.53	3.05	-6.2	1.51	100
3	0.367	1010	6.02	201	26.45	2.82	2.16	1.1	1.51	100
4	0.653	1015	6.03	201	26.36	3.08	1.88	7.5	1.51	100
5	1.020	1020	6.03	202	26.77	2.46	1.79	10.8	1.51	100
6	1.469	1025	6.03	201	26.70	2.40	1.73	14.9	1.51	100
8	2.611	1030	6.02	197	26.65	2.25	1.68	20.1	1.51	100
10	4.080	1035	6.02	198	26.72	2.12	1.71	21.4	1.51	100
		1040	6.02	201	26.72	2.20	1.70	25.3	1.51	100
		1045	6.02	199	27.17	2.18	1.66	27.9	1.51	100
		1050	6.02	199	27.55	2.11	1.68	31.0	1.51	100
		1055	6.03	201	27.52	2.15	1.68	32.7	1.51	100
Well Casing Diameter: 2"		1100	6.02	199	27.22	2.07	1.74	36.3	1.51	100
Total Well Depth (TD): 15.1		1105	6.03	199	27.51	2.20	1.74	38.3	1.51	100
Static Water Level (WL): 10.53		1110	6.03	199	27.56	2.30	1.74	38.5	1.51	100
One Casing Volume(~~gal~~/L): 2.81					-	✓				
[3.78gals/L]										
Start Purge (hrs): 1000										
End Purge (hrs): 1110										
Total Purge Time (min): 70										
Total Vol. Purged (~~gal~~/L): 7.5	7 L									
	2131									

SAMPLE PARAMETERS

	Color Description	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
Date: 1025									
Time: 1110	clear	6.03	199	27.56	2.30	1.74	38.5	1.51	100

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
~~Gross Alpha/Gross Beta/Total Uranium/Radium 226~~	~~HNO3 (pH < 2)~~	~~1 - 1 gal plastic container~~	
TCL VOCs 8260	HCl	6 40ml vials	✓

ADDITIONAL INFORMATION

OVA Reading (ppm): 0.0 ppm

Method:
[X] Peristaltic Pump
[ ] Centrifugal Pump
[ ] Bladder Pump
[X] Tube Evacuation
[ ] Vacuum Jug Assembly
[ ] Bailer

Tubing Type:
[ ] Polyethylene
[X] Teflon
[ ] Teflon-lined Polyethylene

Circle if Applicable:

MS/MSD —

Duplicate ID No.: NTC02D6000

Signature(s): [illegible]

GROUNDWATER PURGING AND SAMPLING LOG

Date 10-26-99

Project Site Name: NTC Orlando
Project No.: CTO 0024

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:

Sample ID No.: NTC026088C11
Sample Location: OU002088C
Sampled By: [illegible]
C.O.C. No.:

PURGING DATA

Casing Size (in.)	Gals/Ft. of Water	Time Hr:Min	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
1	0.041	9:50	5.32	129.00	24.86	11.9	4.65	115.1	7.83	100
2	0.163	9:55	5.15	128.00	24.92	7.96	2.05	76.5	7.83	100
3	0.367	10:00	5.05	127.00	25.07	4.94	1.72	72.9	7.83	100
4	0.653	10:05	4.95	127.00	25.22	4.22	1.50	72.0	7.83	100
5	1.020	10:10	4.91	130.00	25.41	3.51	1.33	62.8	7.83	100
6	1.469	10:13	4.89	130.00	25.54	3.43	1.27	65.9	7.83	100
8	2.611	10:16	4.88	132.00	25.66	4.27	1.18	63.5	7.83	100
10	4.080	10:21	4.87	132.00	25.54	3.58	1.06	60.1	7.83	100
		10:26	4.85	134.00	25.46	3.24	0.98	58.8	7.83	100
		10:29	4.85	135.00	25.39	3.03	.93	58.0	7.83	100
		10:32	4.85	136.00	25.35	2.94	.90	57.3	7.83	100
		10:35	4.86	138.00	25.45	2.98	.87	55.1	7.83	100
Well Casing Diameter: 2		10:38	4.84	138.00	25.54	3.25	.86	54.9	7.83	100
Total Well Depth (TD): 16.16		10:41	4.84	139.00	25.58	4.37	.84	53.5	7.83	100
Static Water Level (WL): 7.83						X				
One Casing Volume(gal/L): 36.2										
[3.78gals/L]										
Start Purge (hrs): 9:50										
End Purge (hrs): 10:41										
Total Purge Time (min): 451										
Total Vol. Purged (gal/L): 4.9	5.1L									
	JMS 2/3/00									

SAMPLE PARAMETERS

	Color Description	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
Date: 10/26/99									
Time: 10:41	Clear	4.84	139.00	25.58	4.37	.84	53.5	7.83	100

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
~~Gross Alpha/Gross Beta/Total Uranium/Radium 226~~	~~HNO3 (pH < 2)~~	~~1 - 1 gal plastic cubcainer~~	
TCL VOCS 8260	HCL	6 40ML VOCS	✓

ADDITIONAL INFORMATION

OVA Reading (ppm): 0.0 PPM

Method:
[ ] Peristaltic Pump
[X] Centrifugal Pump
[ ] Bladder Pump
[X] Tube Evacuation
[ ] Vacuum Jug Assembly
[ ] Bailer

Tubing Type:
[ ] Polyethylene
[X] Teflon
[ ] Teflon-lined Polyethylene

Circle If Applicable:

MS/MSD	Duplicate ID No.:	Signature(s):
—	NTC02D7000	[signature]

Date 10/26/99

GROUNDWATER PURGING AND SAMPLING LOG

Project Site Name: NTC Orlando
Project No.: CTO 0024

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:

Sample ID No.: NTC0026-10C 11
Sample Location: OLD 0210 C
Sampled By: JK/JM
C.O.C. No.:

PURGING DATA

Casing Size (in.)	Gals/Ft. of Water	Time Hr:Min	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
1	0.041	1455	11.16	642	25.35	4.14	1.44	-175.2	8.71	100
2	0.163	1500	11.17	645	25.60	2.70	1.14	-187.5	8.71	100
3	0.367	1505	11.17	644	25.76	1.76	0.13	-200.5	8.71	100
4	0.653	1510	11.17	644	25.86	2.11	0.12	-201.7	8.71	100
5	1.020	1515	11.17	643	25.94	1.60	0.08	-202.8	8.71	100
6	1.469	1520	11.17	643	25.79	1.86	0.05	-204.7	8.71	100
8	2.611	1525	11.16	641	26.23	1.16	0.01	-207.9	8.71	100
10	4.080	1530	11.16	641	26.14	1.33	0.01	-208.5	8.71	100
		1535	11.16	642	26.08	1.12	0.00	-209.1	8.71	100

Well Casing Diameter: 2"
Total Well Depth (TD): 56.3
Static Water Level (WL): 8.71
One Casing Volume(gal/L): 29.4 L ✓

[3.78gals/L]

Start Purge (hrs): 1455
End Purge (hrs): 1535
Total Purge Time (min): 40
Total Vol. Purged (gal/L): 4 L 4L 12 L

SAMPLE PARAMETERS

	Color Description	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
Date: 10/26/99									
Time: 1535	clear	11.16	642	26.08	1.12	0.00	-209.1	8.71	100

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
~~Gross Alpha/Gross Beta/Total Uranium/Radium 226~~	~~HNO3 (pH < 2)~~	~~1 - 1 gal plastic cubitainer~~	
TCL VOCs 8260	HCL	3 40 ML VOCs	✓
Alkane	—	1 250 ML Plastic	✓
Anions	—	1 1 L Plastic	✓
Dissolved Metal Iron + Manganese	HNO3	1 250 ML Plastic	✓
TKN	H2SO4	1 1 L Plastic	

ADDITIONAL INFORMATION

OVA Reading (ppm): 0.0 PPM

Method:
[X] Peristaltic Pump
[ ] Centrifugal Pump
[ ] Bladder Pump
[X] Tube Evacuation
[ ] Vacuum Jug Assembly
[ ] Bailer

Tubing Type:
[ ] Polyethylene
[X] Teflon
[ ] Teflon-lined Polyethylene

Circle if Applicable:

MS/MSD	Duplicate ID No.:	Signature(s):
—	—	J. Kilgore

Date OCT 26 99

GROUNDWATER PURGING AND SAMPLING LOG

Project Site Name: NTC Orlando
Project No.: CTO 0024

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:

Sample ID No.: NTC026-12C11
Sample Location: 06D07-12C
Sampled By: SK/JM
C.O.C. No.:

PURGING DATA

Casing Size (in.)	Gals/FL of Water	Time Hr:Min	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
1	0.041	1000	6.30	144	24.68	87.5	3.75	134.3	11.59	100
2	0.163	1005	5.95	142	24.87	182	2.87	128.9	11.59	100
3	0.367	1010	5.78	139	24.92	105.9	2.41	113.6	11.59	100
4	0.653	1015	5.67	133	25.10	46.0	1.97	86.9	11.59	100
5	1.020	1020	5.41	123	25.07	15.3	1.48	45.8	11.59	100
6	1.469	1025	5.35	121	24.86	7.49	1.32	33.2	11.59	100
8	2.611	1030	5.36	121	24.84	8.08	1.30	28.2	11.59	100
10	4.080	1035	5.32	120	24.94	10.34	1.28	18.9	11.59	100
		1040	5.32	120	25.00	10.39	1.26	16.5	11.59	100
		1045	5.32	120	25.03	11.5	1.24	11.7	11.59	100
		1050	5.32	120	25.17	12.7	1.21	9.4	11.59	100
		1055	5.32	120	25.11	12.1	1.20	9.1	11.59	100
Well Casing Diameter: 2"		1100	5.32	120	24.94	12.7	1.19	5.3	11.59	100
Total Well Depth (TD): 58.0		1105	5.31	119	24.93	12.1	1.17	5.3	11.59	100
Static Water Level (WL): 11.59		1110	5.31	119	24.91	13.6	1.15	5.1	11.59	100
One Casing Volume(gal/L): 28.16										
						X				
[3.78gals/L]										
Start Purge (hrs): 1000										
End Purge (hrs): 1110										
Total Purge Time (min): 70										
Total Vol. Purged (gal/L): 7.5L	7L									
	2/3/00									

SAMPLE PARAMETERS

	Color Description	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
Date OCT 26, 1999									
Time 1110	clear	5.31	119	24.91	13.6	1.15	5.1	11.59	100

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
~~Gross Alpha/Gross Beta/Total Uranium/Radium 226~~	~~HNO3 (pH<2)~~	~~4 - 1 gal plastic cubitainer~~	
TCL VOCs 8260	HCL	3 40ML Vials	✓
DOC	H2SO4	2 40ML Vials	✓
Alkalinity	—	1 250ML Plastic	✓
Anions	—	1 1L Plastic	✓
Dissolved Metals Sample MTX	HNO3	1 250ML Plastic	✓
TKN	H2SO4	1 1L Plastic	✓

ADDITIONAL INFORMATION

OVA Reading (ppm): 0.0ppm

Method:
[X] Peristaltic Pump
[ ] Centrifugal Pump
[ ] Bladder Pump
[X] Tube Evacuation
[ ] Vacuum Jug Assembly
[ ] Bailer

Tubing Type:
[ ] Polyethylene
[X] Teflon
[ ] Teflon-lined Polyethylene

Circle if Applicable:

MS/MSD —

Duplicate ID No. —

Signature(s): [signature]

Date OCT 25/1999

GROUNDWATER PURGING AND SAMPLING LOG

Project Site Name: NTC Orlando
Project No.: CTO 0024

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:

Sample ID No.: NTC026 1311
Sample Location: OLD 213C
Sampled By: JK/GS
C.O.C. No.:

PURGING DATA

Casing Size (in.)	Gals/Ft. of Water	Time Hr:Min	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
1	0.041	1350	4.99	63	26.35	2.56	2.60	57.1	7.53	100
2	0.163	1355	4.97	63	26.48	2.82	2.15	52.4	7.53	100
3	0.367	1400	4.97	62	26.64	2.45	1.69	44.4	7.53	100
4	0.653	1405	4.95	65	25.73	3.07	1.38	42.0	7.53	100
5	1.020	1410	4.94	67	25.22	3.88	1.22	41.1	7.53	100
6	1.469	1415	4.94	69	24.82	4.15	1.20	39.9	7.53	100
8	2.611	1420	4.95	70	24.76	4.44	1.16	38.2	7.53	100
10	4.080	1425	4.95	71	24.82	4.35	1.13	37.2	7.53	100
		1430	4.94	71	24.63	4.22	1.03	36.9	7.53	100
		1435	4.92	71	24.49	4.60	0.99	37.3	7.53	100
		1440	4.93	71	24.27	4.19	0.90	36.3	7.53	100
		1445	4.92	71	24.30	3.95	0.89	36.7	7.53	100
Well Casing Diameter: 2"		1450	4.93	71	24.48	3.48	0.89	35.1	7.53	100
Total Well Depth (TD): 49.1						x				
Static Water Level (WL): 7.53										
One Casing Volume(gal/L): 25.6										
[3.78gals/L]										
Start Purge (hrs): 1350			2/3/100							
End Purge (hrs): 1450										
Total Purge Time (min): 60		60 min								
Total Vol. Purged (gal/L): 7.3		1.6								

SAMPLE PARAMETERS

	Color Description	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
Date: OCT 25, 1999									
Time: 1450	clear	4.93	71	24.48	3.48	0.89	35.1	7.53	100

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
~~DOC 9Pm~~	~~H2SO4~~	~~2 AL VOA 9Pm~~	~~✓~~
~~Gross Alpha/Gross Beta/Total Uranium/Radium 226~~	~~HNO3 (pH < 2)~~	~~1 - 1 gal plastic cubitainer~~	~~—~~
TCL VOAs	HCL	3 40ML VOAs	✓
Anions	N/A	1 1L Plastic	✓
Alkane		1 250ML Plastic	✓
Dissolved Iron & MAG	HNO3	1 250ML Plastic	✓
TKN	H2SO4	1 1L Plastic	✓

ADDITIONAL INFORMATION

OVA Reading (ppm): 0.0PPM

Method:
[ ] Penstaltic Pump
[X] Centrifugal Pump
[ ] Bladder Pump
[X] Tube Evacuation
[ ] Vacuum Jug Assembly
[ ] Bailer

Tubing Type:
[ ] Polyethylene
[X] Teflon
[ ] Teflon-lined Polyethylene

~~Circle if Applicable:~~

MS/MSD —

Duplicate ID No.: —

Signature(s): [signature]

GROUNDWATER PURGING AND SAMPLING LOG

Date 10/25/99

Project Site Name: NTC Orlando
Project No.: CTO 0024

Sample ID No.: NTC026-20B 11
Sample Location: OLD0220B
Sampled By: [illegible]
C.O.C. No.:

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:

PURGING DATA

Casing Size (in.)	Gals/Ft. of Water	Time Hr:Min	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
1	0.041	0820	5.25	138	23.21	3.12	2.18	72.9	6.04	100
2	0.163	0825	4.84	111	23.05	1.72	1.55	65.7	6.04	100
3	0.367	0830	4.74	106	23.15	1.59	1.48	62.4	6.04	100
4	0.653	0835	4.64	104	23.52	0.59 ~~1.29~~	1.29	59.6	6.04	100
5	1.020	0840	4.61	104	23.82	0.34	1.17	59.1	6.04	100
6	1.469	0845	4.61	103	24.13	0.39	1.05	57.1	6.04	100
8	2.611	0850	4.57	103	24.33	0.31	0.97	56.4	6.04	100
10	4.080	0855	4.56	103	24.39	0.41	0.88	54.5	6.04	100
		0900	4.56	103	24.50	0.~~[illegible]~~	0.80	53.5	6.04	100
		0905	4.56	103	24.58	0.12	0.79	53.3	6.04	100
		0910	4.56	103	24.57	0.16	0.78	52.5	6.04	100
						x				

Well Casing Diameter: 2"
Total Well Depth (TD): 41.3
Static Water Level (WL): 6.04
One Casing Volume(gal/L): 2.18
[3.78gals/L]
Start Purge (hrs): 0820
End Purge (hrs): 0910
Total Purge Time (min): 50
Total Vol Purged (~~gal~~/L): ~~7.4~~ 5L
[illegible] 2/31

SAMPLE PARAMETERS

	Color Description	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
Date: 10/25/99									
Time: 0910	clear	4.56	103	24.57	0.16	0.78	52.5	6.04	100

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
~~Gross Alpha~~/Gross Beta/Total Uranium/Radium 226	HNO3 (pH < 2)	1 - 1 gal plastic cubitainer	
TCL VOCs 8260	HCL	3 - 40ml Vials	✓

ADDITIONAL INFORMATION

OVA Reading (ppm): 0.0 PPM

Method:
[X] Peristaltic Pump
[ ] Centrifugal Pump
[ ] Bladder Pump
[X] Tube Evacuation
[ ] Vacuum Jug Assembly
[ ] Bailer

Tubing Type:
[ ] Polyethylene
[X] Teflon
[ ] Teflon-lined Polyethylene

Circle If Applicable:
MS/MSD
Duplicate ID No.:

Signature(s): [illegible]

GROUNDWATER PURGING AND SAMPLING LOG

Date 10/25/99

Page 1 of 1

Project Site Name: NTC Orlando
Project No.: CTO 0024

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:

Sample ID No.: NTC02626 11
Sample Location: UCD022 1C
Sampled By: GS
C.O.C. No.:

PURGING DATA

Casing Size (in.)	Gals/Ft of Water	Time Hr:Min	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
1	0.041	0820	5.11	112.00	23.72	3.28	2.89	-1.0	5.97	100
2	0.163	8:25	5.07	111.00	22.94	2.67	2.47	-23.0	5.97	100
3	0.367	8:30	5.04	110.00	23.34	2.43	2.11	-35.2	5.97	100
4	0.653	8:35	5.01	110.00	23.99	2.53	1.76	-46.2	5.97	100
5	1.020	8:40	5.01	110.00	24.32	2.44	1.56	-52.9	5.97	100
6	1.469	8:45	5.02	110.00	24.62	2.69	1.37	-59.2	5.97	100
8	2.611	8:50	5.04	111.00	24.75	2.55	1.24	-65.8	5.97	100
10	4.080	8:55	5.06	112.00	24.88	2.49	1.15	-71.3	5.97	100
		9:00	5.07	112.00	25.06	2.64	1.08	-75.3	5.98	100
		9:05	5.08	113.00	25.18	3.13	1.04	-79.1	5.98	100
		9:10	5.08	113.00	25.06	4.08	.99	-82.5	5.98	100
		9:15	5.08	113.00	25.16	4.37	.98	-85.0	5.98	100
Well Casing Diameter: 2"		9:20	5.08	113.00	25.29	4.28	.97	-87.4	5.98	100
Total Well Depth (TD): 60.4						✓				
Static Water Level (WL): 5.97										
One Casing Volume(gal/L): 3.6										
[3.78gals/L]										
Start Purge (hrs): 0820										
End Purge (hrs): 9:20										
Total Purge Time (min): 60										
Total Vol. Purged (gal/L): 6.0										
2/3/00										

SAMPLE PARAMETERS

	Color Description	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
Date: 10/25/99									
Time: 9:20	Clear	5.08	113.00	25.29	4.28	.97	-87.4	5.98	100

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
~~Gross Alpha/Gross Beta/Total Uranium/Radium 226~~	~~HNO3 (pH < 2)~~	~~1 - 1 gal plastic carbitainer~~	
TCL VOAs 8260	HCL	3-40MM Vials	

ADDITIONAL INFORMATION

OVA Reading (ppm): 0.0 PPM

Method:
[X] Peristaltic Pump
[ ] Centrifugal Pump
[ ] Bladder Pump
[X] Tube Evacuation
[ ] Vacuum Jug Assembly
[ ] Bailer

Tubing Type:
[ ] Polyethylene
[X] Teflon
[ ] Teflon-lined Polyethylene

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

GROUNDWATER PURGING AND SAMPLING LOG

Date 10-26-99

Project Site Name: NTC Orlando
Project No.: CTO 0024

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:

Sample ID No.: NTC02 14C1
Sample Location: OLD 02 14C
Sampled By: Mary Sparks
C.O.C. No.:

PURGING DATA

Casing Size (in.)	Gals/Ft. of Water	Time Hr:Min	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
1	0.041	14:35	5.08	72.00	26.86	27.2	~~34~~ 2.74	82.4	8.88	100
2	0.163	14:40	4.93	67.00	26.65	23.3	1.54	75.9	8.88	100
3	0.367	14:45	4.90	66.00	26.68	14.6	1.38	71.5	8.88	100
4	0.653	14:50	4.88	66.00	26.67	8.03	1.28	68.8	8.88	100
5	1.020	14:55	4.89	66.00	26.56	4.12	1.11	65.9	8.88	100
6	1.469	15:00	4.89	65.00	26.64	3.11	1.06	63.7	8.88	100
8	2.611	15:05	4.91	65.00	26.73	3.01	.98	61.1	8.88	100
10	4.080	15:10	4.90	64.00	26.75	4.09	.93	60.1	8.88	100
		15:13	4.90	64.00	26.75	4.19	.89	59.2	8.88	100
		15:16	4.91	64.00	27.23	4.25	.89	56.8	8.88	100
		15:19	4.92	64.00	27.47	4.31	.90	55.3	8.88	100
		15:22	4.93	64.00	27.38	4.24	.87	54.8	8.88	100

Well Casing Diameter: 2.0
Total Well Depth (TD): 45.8
Static Water Level (WL): 8.88
One Casing Volume(gal/L) 22.78

[3.78gals/L]

Start Purge (hrs): 14:35
End Purge (hrs): 15:22
Total Purge Time (min): 48
Total Vol. Purged (gal/L): 4.8

2/3/00

SAMPLE PARAMETERS

	Color Description	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
Date 10-26-99									
Time 15:22	Clear	4.93	64.00	27.38	4.24	.87	54.8	8.89	100

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
~~Gross Alpha/Gross Beta/Total Uranium/Radium 226~~	HNO3 (pH < 2)	1 - 1 gal plastic cubitainer	
		0	
TCL VOCS 8260	HCL	9 40ML VOCS	✓

ADDITIONAL INFORMATION

OVA Reading (ppm): 0. Ppm

Method:
[ ] ~~Peristaltic Pump~~
[ ] Centrifugal Pump
[ ] Bladder Pump
[X] Tube Evacuation
[ ] Vacuum Jug Assembly
[ ] Bailer

Tubing Type:
[ ] Polyethylene
[X] ~~Teflon~~
[ ] Teflon-lined Polyethylene

~~Circle if Applicable:~~
MS/MSD
Duplicate ID No.:

Signature(s): Mary Sparks

Date 10/27/99

GROUNDWATER PURGING AND SAMPLING LOG

Project Site Name: NTC Orlando
Project No.: CTO 0024

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:

Sample ID No.: NTC02G17C11
Sample Location: OLD02176
Sampled By: JAM
C.O.C. No.:

PURGING DATA

Casing Size (in.)	Gals/Ft of Water	Time Hr:Min	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
1	0.041	0755	6.19	278	26.42	39.3	0.47	36.2	3.54	100
2	0.163	0800	6.19	276	26.58	28.5	0.61	27.2	3.59	100
3	0.367	0805	6.17	273	26.77	10.71	0.57	14.1	3.59	100
4	0.653	0810	6.13	266	26.91	6.76	0.56	6.7	3.59	100
5	1.020	0815	6.07	253	26.94	4.26	0.55	-6.8	3.59	100
6	1.469	0820	5.92	239	27.04	1.22	0.51	-20.7	3.59	100
8	2.611	0825	5.84	232	27.09	0.88	0.56	-34.2	3.59	100
10	4.080	0830	5.83	230	27.19	0.57	0.54	-35.3	3.59	100
		0835	5.80	228	27.30	0.43	0.53	-36.1	3.59	100
						x				

Well Casing Diameter: 2"
Total Well Depth (TD): 49.1
Static Water Level (WL): 3.59
One Casing Volume(gal/L): 28.1 ✓

[3.78gals/L]

Start Purge (hrs): 0755
End Purge (hrs): 0835
Total Purge Time (min): 40
Total Vol. Purged (gal/L): ~~19~~ 4L
MS 2.19 100

SAMPLE PARAMETERS

	Color Description	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
Date: 10/27/99									
Time: 0835	Clear	5.80	228	27.30	0.43	0.53	-36.1	3.59	100

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
~~Gross Alpha/Gross Beta/Total Uranium/Radium 226~~	~~HNO3 (pH<2)~~	~~1 - 1 gal plastic cubitainer~~	
TCL VOCs (8260)	HCL	3-40 ml vials	✓
Alkalinity	None	1 - 250 ml Plastic	✓
Anions	None	1 - 1L Plastic	✓
Diss. Metals (Fe & Mn)	HNO_3	1 - 250 ml plastic	✓
TKN	H_2SO_4	1 - 1L plastic	✓

ADDITIONAL INFORMATION

OVA Reading (ppm): 0.0

Method:
[X] Peristaltic Pump
[ ] Centrifugal Pump
[ ] Bladder Pump
[X] Tube Evacuation
[ ] Vacuum Jug Assembly
[ ] Bailer

Tubing Type:
[ ] Polyethylene
[X] Teflon
[ ] Teflon-lined Polyethylene

Circle if Applicable:
MS/MSD
Duplicate ID No.:

Signature(s): JAM

Date 10/27/99

GROUNDWATER PURGING AND SAMPLING LOG

Project Site Name: NTC Orlando
Project No.: CTO 0024

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:

Sample ID No.: NTC02G19C11
Sample Location: OLD02/19C
Sampled By: [illegible]
C.O.C. No.:

PURGING DATA

Casing Size (in.)	Gals/Ft. of Water	Time Hr:Min	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
1	0.041	1120	5.20	115	26.30	146	0.46	60.3	5.26	100
2	0.163	1125	4.71	110	25.98	46.5	-0.38	16.8	5.26	100
3	0.367	1130	4.70	109	25.95	37.3	-0.21	6.2	5.26	100
4	0.653	1135	4.69	109	25.86	25.6	-0.13	-5.7	5.26	100
5	1.020	1140	4.70	109	25.86	20.8	-0.18	-13.9	5.26	100
6	1.469	1145	4.70	109	25.86	18.8	-0.19	-14.8	5.26	100
8	2.611	1150	4.70	109	25.86	18.7	-0.18	-15.6	5.26	100
10	4.080					x		x		

Well Casing Diameter: 2"
Total Well Depth (TD): 51.9
Static Water Level (WL): 5.26
One Casing Volume(gal/L): 25.6

[3.78gals/L]

Start Purge (hrs): 1120
End Purge (hrs): 1150
Total Purge Time (min): 30
Total Vol. Purged (gal/L): ~7 3L 4/10
[illegible] 2/1

SAMPLE PARAMETERS

	Color Description	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
Date: 10/27/99									
Time: 1156	Clear	4.70	109	25.86	18.7	-0.18	-15.6	5.26	100

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
~~Gross Alpha/Gross Beta/Total Uranium/Radium 226~~	~~HNO3 (pH < 2)~~	~~1 - 1 gal plastic cubitainer~~	
TCL VOCs (8260)	HCL	3 - 40 ml vials	✓
Alkalinity	None	1 - 250 ml Plastic	✓
Anions	None	1 - 1 L Plastic	✓
Diss. Metals (Fe & Mn)	HNO3	1 - 250 ml Plastic	✓
TKN	H2SO4	1 - 1 L Plastic	✓

ADDITIONAL INFORMATION

OVA Reading (ppm): 0.0 PPM

Method:
[X] Peristaltic Pump
[ ] Centrifugal Pump
[ ] Bladder Pump
[X] Tube Evacuation
[ ] Vacuum Jug Assembly
[ ] Bailer

Tubing Type:
[ ] Polyethylene
[X] Teflon
[ ] Teflon-lined Polyethylene

Circle if Applicable:
MS/MSD
Duplicate ID No.:

Signature(s): [illegible]

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NTC Orlando - SA2
Project No.: 7457
Sampled By: JL
Field Analyst: [illegible]
Field Form Checked as per QA/QC Checklist (initials): [illegible]

Sample ID No.: NTC02G10C11
Sample Location: Site No. 01D0210C
Duplicate: ☐
Blank: ☐

SAMPLING DATA:

	pH (SU)	S.C. (mS/cm)	Turbidity (NTU)	DO (Meter, mg/l)	Temp. (°C)	ORP (Eh) (+/- mv)	Color (Visual)
Date: 10/26/99							
Time: 1535							
Method: Low Flow	11.16	642	1.12	0.00	26.08	-209.1	clear

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Dissolved Oxygen:

Equipment: HACH Digital Titrator OX-DT CHEMetrics (Range: 0-1 mg/L) Analysis Time: 1538

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	1-5 mg/L	200 ml	0.200 N	0.01
☐	2-10 mg/L	100 ml	0.200 N	0.02

Titration Cou	Multiplier	Concentration
	x 0.01 =	mg/L
	x 0.02 =	mg/L

CHEMetrics: 0.4 mg/L

Notes:

Alkalinity:

Equipment: HACH Digital Titrator AL-DT CHEMetrics (Range: _____ mg/L) Analysis Time: _____ Filtered: ☐

Range Used:	Range	Sample Vol.	Cartridge	Multiplier	Titration Count	Multiplier	Concentration
☐	10-40 mg/L	100 ml	0.1600 N	0.1	&	x 0.1 =	mg/L
☐	40-160 mg/L	25 ml	0.1600 N	0.4	&	x 0.4 =	mg/L
☐	100-400 mg/L	100 ml	1.600 N	1.0	&	x 1.0 =	mg/L
☐	200-800 mg/L	50 ml	1.600 N	2.0	&	x 2.0 =	mg/L
☐	500-2000 mg/L	20 ml	1.600 N	5.0	&	x 5.0 =	mg/L
☐	1000-4000 mg/L	10 ml	1.600 N	10.0	&	x 10.0 =	mg/L

Parameter:	Hydroxide	Carbonate	Bicarbonate
Relationship:			

CHEMetrics: _____ mg/L

Notes:

Standard Additions: ☐ Titrant Molarity: _____ Digits Required: 1st.: _____ 2nd.: _____ 3rd.: _____

Carbon Dioxide:

Equipment: HACH Digital Titrator CA-DT CHEMetrics (Range: _____ mg/L) Analysis Time: 1536

No Carbon dioxide is present.

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	10-50 mg/L	200 ml	0.3636 N	0.1
☐	20-100 mg/L	100 ml	0.3636 N	0.2
☐	100-400 mg/L	200 ml	3.636 N	1.0
☐	200-1000 mg/L	100 ml	3.636 N	2.0

Titration Count		Concentration
0	x 0.1 =	0.0 mg/L
	x 0.2 =	mg/L
	x 1.0 =	mg/L
	x 2.0 =	mg/L

CHEMetrics: _____ mg/L

Notes: Sample turned pink after adding the one phenolphthalein Indicator Powder pillow

Standard Additions: ☐ Titrant Molarity: _____ Digits Required: 1st.: _____ 2nd.: _____ 3rd.: _____

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name:

Project No.:

Sampled By:

Field Analyst:

Field Form Checked as per QA/QC Checklist (initials): [illegible]

Sample ID No.: NTC02G10C11

Sample Location: Site No. 01002100

Duplicate: ☐

Blank: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Sulfide (S^{2-}):

Equipment: DR-700 DR-850 HS-C Color Chart HS-WR Color Wheel Analysis Time: 1550

Program/Module: 610nm 93 Other:

Concentration: 0.80 mg/L Filtered: ☐

Notes: Limit on meter

Sulfate (SO_4^{2-}):

Equipment: DR-700 DR-8 __ Other: Analysis Time:

Program/Module: 91

Concentration: mg/L Filtered: ☐

Standard Solution: ☐ Results:

Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____

Notes:

Nitrite (NO_2^--N):

Analysis Time:

Equipment: DR-700 DR-8 __ Other: Filtered: ☐

Program/Module: 60

Concentration: mg/L Reagent Blank Correction: ☐

Standard Solution: ☐ Results: ☐

Notes:

Nitrate (NO_3^--N):

Analysis Time:

Equipment: DR-700 DR-8 __ Other: Filtered: ☐

Program/Module: 55

Concentration: mg/L

Nitrite Interference Treatment: ☐

Standard Solution: ☐ Results: Reagent Blank Correction: ☐

Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____

Notes:

Tetra Tech NUS, Inc.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Project Site Name:
Project No.:
Sampled By:
Field Analyst:
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: NTC02G10C11
Sample Location: Site No. 0100210C
Duplicate: ☐
Blank: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Manganese (Mn^{2+}):

Equipment: DR-700 DR-8 __ HACH MN-5 Other: _____ Analysis Time: _____
Program/Module: 525nm 41
Concentration: _____ mg/L
Filtered: ☐
Digestion: ☐
Standard Solution: ☐ Results: _____
Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

Ferrous Iron (Fe^{2+}):

Equipment: DR-700 (DR-850) IR-18C Color Wheel Other: _____ Analysis Time: 1553
Program/Module: 500nm 33
Concentration: 0.07 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):

Equipment: (HS-C) Other: _____ Analysis Time: 1545
Concentration: 1.0 mg/L Exceeded 5.0 mg/L range on color chart: ☐
Notes:

QA/QC Checklist:

All data fields have been completed as necessary: ☑
Correct measurement units are cited in the SAMPLING DATA block: ☑
Mulitplication is correct for each *Multiplier* table: ☑
Final calulated concentration is within the appropriate *Range Used* block: ☑
Alkalinity *Relationship* is determined appropriatly as per manufacturer instructions: ☑
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☑
Nitrite Interference treatment used for Nitrate test if Nitrite was detected: ☑
Title block is initialized by person who performed the QA/QC Ckecklist: ☑

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NTC orlando - SA2
Project No.: 7457
Sampled By: J.K.
Field Analyst: [illegible]
Field Form Checked as per QA/QC Checklist (initials): [illegible]

Sample ID No.: NTC02G12C11
Sample Location: Site No. 01D02126
Duplicate: ☐
Blank: ☐

SAMPLING DATA

	pH (SU)	S.C. (mS/cm)	Turbidity (NTU)	DO (Meter, mg/l)	Temp. (°C)	ORP (Eh) (+/- mv)	Color (Visual)
Date: 10/26/99							
Time: 1110							
Method: Low Flow	5.31	119	13.6	1.15	24.91	5.1	Clear

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Dissolved Oxygen:

Equipment: HACH Digital Titrator OX-DT CHEMetrics (Range: 0-1 mg/L) Analysis Time: 1112

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	1-5 mg/L	200 ml	0.200 N	0.01
☐	2-10 mg/L	100 ml	0.200 N	0.02

Titration Cou	Multiplier	Concentration
	x 0.01 =	mg/L
	x 0.02 =	mg/L

CHEMetrics: 1.0 mg/L

Notes:

Alkalinity:

Equipment: HACH Digital Titrator AL-DT CHEMetrics (Range: _____ mg/L) Analysis Time: _____ Filtered: ☐

Range Used:	Range	Sample Vol.	Cartridge	Multiplier	Titration Count	Multiplier	Concentration
☐	10-40 mg/L	100 ml	0.1600 N	0.1	&	x 0.1 =	mg/L
☐	40-160 mg/L	25 ml	0.1600 N	0.4	&	x 0.4 =	mg/L
☐	100-400 mg/L	100 ml	1.600 N	1.0	&	x 1.0 =	mg/L
☐	200-800 mg/L	50 ml	1.600 N	2.0	&	x 2.0 =	mg/L
☐	500-2000 mg/L	20 ml	1.600 N	5.0	&	x 5.0 =	mg/L
☐	1000-4000 mg/L	10 ml	1.600 N	10.0	&	x 10.0 =	mg/L

Parameter:	Hydroxide	Carbonate	Bicarbonate
Relationship:			

CHEMetrics: _____ mg/L

Notes:

Standard Additions: ☐ Titrant Molarity: _____ Digits Required: 1st.: _____ 2nd.: _____ 3rd.: _____

Carbon Dioxide:

Equipment: HACH Digital Titrator CA-DT CHEMetrics (Range: _____ mg/L) Analysis Time: 1117

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	10-50 mg/L	200 ml	0.3636 N	0.1
☑	20-100 mg/L	100 ml	0.3636 N	0.2
☐	100-400 mg/L	200 ml	3.636 N	1.0
☐	200-1000 mg/L	100 ml	3.636 N	2.0

Titration Count		Concentration
	x 0.1 =	mg/L
284	x 0.2 =	56.8 mg/L
	x 1.0 =	mg/L
	x 2.0 =	mg/L

CHEMetrics: _____ mg/L

Notes:

Standard Additions: ☐ Titrant Molarity: _____ Digits Required: 1st.: _____ 2nd.: _____ 3rd.: _____

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name:
Project No.:
Sampled By:
Field Analyst:
Field Form Checked as per QA/QC Checklist (initials): [illegible]

Sample ID No.: NTC02G12C11
Sample Location: Site No. 01002122
Duplicate: ☐
Blank: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION

Sulfide (S^{2-}):

Equipment: DR-700 DR-8 50 HS-C Color Chart HS-WR Color Wheel Analysis Time: 1125
Program/Module: 610nm 93 Other:

Concentration: 0.18 mg/L Filtered: ☐
Notes:

Sulfate (SO_4^{2-}):

Equipment: DR-700 DR-8 __ Other: Analysis Time:
Program/Module: 91
Concentration: mg/L Filtered: ☐

Standard Solution: ☐ Results:
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

Nitrite (NO_2^--N):

Analysis Time:
Equipment: DR-700 DR-8 __ Other: Filtered: ☐
Program/Module: 60
Concentration: mg/L Reagent Blank Correction: ☐
Standard Solution: ☐ Results: ☐
Notes:

Nitrate (NO_3^--N):

Analysis Time:
Equipment: DR-700 DR-8 __ Other: Filtered: ☐
Program/Module: 55
Concentration: mg/L
Nitrite Interference Treatment: ☐
Standard Solution: ☐ Results: Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

Tetra Tech NUS, Inc.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Project Site Name:
Project No.:
Sampled By:
Field Analyst:
Field Form Checked as per QA/QC Checklist (initials): [illegible]

Sample ID No.: NTC02G-12C11
Sample Location: Site No. 01D02126
Duplicate: ☐
Blank: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Manganese (Mn^{2+}):

Equipment: ~~DR-700~~ DR-8__ HACH MN-5 Other: _____ Analysis Time: _____
Program/Module: 525nm 41
Concentration: _____ mg/L
Filtered: ☐
Digestion: ☐
Standard Solution: ☐ Results: _____
Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

Ferrous Iron (Fe^{2+}):

Equipment: DR-700 DR-850 IR-18C Color Wheel Other: _____ Analysis Time: 1129
Program/Module: 500nm 33
Concentration: 0.58 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):

Equipment: HS-C Other: _____ Analysis Time: 1122
Concentration: 0.3 mg/L Exceeded 5.0 mg/L range on color chart: ☐
Notes:

QA/QC Checklist:

All data fields have been completed as necessary: ☑
Correct measurement units are cited in the SAMPLING DATA block: ☑
Mulitplication is correct for each *Multiplier* table: ☑
Final calulated concentration is within the appropriate *Range Used* block: ☑
Alkalinity *Relationship* is determined appropriatly as per manufacturer instructions: ☑
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☑
Nitrite Interference treatment used for Nitrate test if Nitrite was detected: ☑
Title block is initialized by person who performed the QA/QC Ckecklist: ☑

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NTC - Orlando - SA2
Project No.: 7457
Sampled By: [illegible]
Field Analyst: [illegible]
Field Form Checked as per QA/QC Checklist (initials): [illegible]

Sample ID No.: NTC02G17C11
Sample Location: Site No. 01D0217C
Duplicate: ☐
Blank: ☐

SAMPLING DATA:

	pH (SU)	S.C. (mS/cm)	Turbidity (NTU)	DO (Meter, mg/l)	Temp. (°C)	ORP (Eh) (+/- mv)	Color (Visual)
Date: 10/27/99							
Time: 0835							
Method: Low Flow	5.80	228	0.43	0.53	27.30	-36.1	Clear

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Dissolved Oxygen:

Equipment: HACH Digital Titrator OX-DT CHEMetrics (Range: 0-1 mg/L) Analysis Time: 0927

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	1-5 mg/L	200 ml	0.200 N	0.01
☐	2-10 mg/L	100 ml	0.200 N	0.02

Titration Cou	Multiplier		Concentration
	x 0.01	=	mg/L
	x 0.02	=	mg/L

CHEMetrics: 1.0 mg/L

Notes:

Alkalinity:

Analysis Time: _____

Equipment: HACH Digital Titrator AL-DT CHEMetrics (Range: _____ mg/L) Filtered: ☐

Range Used:	Range	Sample Vol.	Cartridge	Multiplier	Titration Count	Multiplier		Concentration
☐	10-40 mg/L	100 ml	0.1600 N	0.1	&	x 0.1	=	mg/L
☐	40-160 mg/L	25 ml	0.1600 N	0.4	&	x 0.4	=	mg/L
☐	100-400 mg/L	100 ml	1.600 N	1.0	&	x 1.0	=	mg/L
☐	200-800 mg/L	50 ml	1.600 N	2.0	&	x 2.0	=	mg/L
☐	500-2000 mg/L	20 ml	1.600 N	5.0	&	x 5.0	=	mg/L
☐	1000-4000 mg/L	10 ml	1.600 N	10.0	&	x 10.0	=	mg/L

Parameter:	Hydroxide	Carbonate	Bicarbonate
Relationship:			

CHEMetrics: _____ mg/L

Notes:

Standard Additions: ☐ Titrant Molarity: _____ Digits Required: 1st.: _____ 2nd.: _____ 3rd.: _____

Carbon Dioxide:

Equipment: HACH Digital Titrator CA-DT CHEMetrics (Range: _____ mg/L) Analysis Time: 0909

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	10-50 mg/L	200 ml	0.3636 N	0.1
☑	20-100 mg/L	100 ml	0.3636 N	0.2
☐	100-400 mg/L	200 ml	3.636 N	1.0
☐	200-1000 mg/L	100 ml	3.636 N	2.0

Titration Count			Concentration
	x 0.1	=	mg/L
276	x 0.2	=	55.2 mg/L
	x 1.0	=	mg/L
	x 2.0	=	mg/L

CHEMetrics: _____ mg/L

Notes:

Standard Additions: ☐ Titrant Molarity: _____ Digits Required: 1st.: _____ 2nd.: _____ 3rd.: _____

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name:

Project No.:

Sampled By:

Field Analyst:

Field Form Checked as per QA/QC Checklist (initials): DJM

Sample ID No.: NTC02G17C11

Sample Location: Site No. 01002170

Duplicate: ☐

Blank: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Sulfide (S^{2-}):

Equipment: DR-700 DR-850 HS-C Color Chart HS-WR Color Wheel Analysis Time: 0935

Program/Module: 610nm 93 Other:

Concentration: 0.51 mg/L Filtered: ☐

Notes:

Sulfate (SO_4^{2-}):

Equipment: DR-700 DR-8__ Other: Analysis Time:

Program/Module: 91

Concentration: mg/L Filtered: ☐

Standard Solution: ☐ Results:

Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____

Notes:

Nitrite (NO_2^--N):

Analysis Time:

Equipment: DR-700 DR-8__ Other: Filtered: ☐

Program/Module: 60

Concentration: mg/L Reagent Blank Correction: ☐

Standard Solution: ☐ Results: ☐

Notes:

Nitrate (NO_3^--N):

Analysis Time:

Equipment: DR-700 DR-8__ Other: Filtered: ☐

Program/Module: 55

Concentration: mg/L

Nitrite Interference Treatment: ☐

Standard Solution: ☐ Results: Reagent Blank Correction: ☐

Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____

Notes:

Tetra Tech NUS, Inc.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Project Site Name:
Project No.:
Sampled By:
Field Analyst:
Field Form Checked as per QA/QC Checklist (initials): [illegible]

Sample ID No.: NTC02G17C11
Sample Location: Site No. 010021-7C
Duplicate: ☐
Blank: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Manganese (Mn^{2+}):

Equipment: DR-700 DR-8 __ HACH MN-5 Other: _____ Analysis Time: _____
Program/Module: 525nm 41
Concentration: _____ mg/L
Filtered: ☐
Digestion: ☐
Standard Solution: ☐ Results: _____
Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

Ferrous Iron (Fe^{2+}):

Equipment: DR-700 DR-8 50 IR-18C Color Wheel Other: _____ Analysis Time: 0939
Program/Module: 500nm 33
Concentration: 1.17 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):

Equipment: HS-C Other: _____ Analysis Time: 0922
Concentration: 1.6 mg/L Exceeded 5.0 mg/L range on color chart: ☐
Notes:

QA/QC Checklist:

All data fields have been completed as necessary: ☑
Correct measurement units are cited in the SAMPLING DATA block: ☑
Mulitplication is correct for each *Multiplier* table: ☑
Final calulated concentration is within the appropriate *Range Used* block: ☑
Alkalinity *Relationship* is determined appropriatly as per manufacturer instructions: ☑
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☑
Nitrite Interference treatment used for Nitrate test if Nitrite was detected: ☑
Title block is initialized by person who performed the QA/QC Ckecklist: ☑

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NTC-Orlando-SAZ
Project No.: 7457
Sampled By: JK
Field Analyst: [illegible]
Field Form Checked as per QA/QC Checklist (initials): [illegible]

Sample ID No.: NTC02G19C11
Sample Location: Site No. 01D0219C
Duplicate: ☐
Blank: ☐

SAMPLING DATA:

	pH (SU)	S.C. (mS/cm)	Turbidity (NTU)	DO (Meter, mg/l)	Temp. (°C)	ORP (Eh) (+/- mv)	Color (Visual)
Date: 10/27/99							
Time: 1150							
Method: Low Flow	4.70	109	18.7	-0.18	23.86	-15.6	clear

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Dissolved Oxygen:

Equipment: HACH Digital Titrator OX-DT (CHEMetrics (Range: 0-1 mg/L))

Analysis Time: 1200

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	1-5 mg/L	200 ml	0.200 N	0.01
☐	2-10 mg/L	100 ml	0.200 N	0.02

Titration Cou	Multiplier	Concentration
	x 0.01 =	mg/L
	x 0.02 =	mg/L

CHEMetrics: 0.6 mg/L

Notes: Filtered

Alkalinity:

Equipment: HACH Digital Titrator AL-DT CHEMetrics (Range: _____ mg/L)

Analysis Time: _____

Filtered: ☐

Range Used:	Range	Sample Vol.	Cartridge	Multiplier	Titration Count	Multiplier	Concentration
☐	10-40 mg/L	100 ml	0.1600 N	0.1	&	x 0.1 =	mg/L
☐	40-160 mg/L	25 ml	0.1600 N	0.4	&	x 0.4 =	mg/L
☐	100-400 mg/L	100 ml	1.600 N	1.0	&	x 1.0 =	mg/L
☐	200-800 mg/L	50 ml	1.600 N	2.0	&	x 2.0 =	mg/L
☐	500-2000 mg/L	20 ml	1.600 N	5.0	&	x 5.0 =	mg/L
☐	1000-4000 mg/L	10 ml	1.600 N	10.0	&	x 10.0 =	mg/L

Parameter:	Hydroxide	Carbonate	Bicarbonate
Relationship:			

CHEMetrics: _____ mg/L

Notes:

Standard Additions: ☐ Titrant Molarity: _____ Digits Required: 1st.: _____ 2nd.: _____ 3rd.: _____

Carbon Dioxide:

Equipment: (HACH Digital Titrator CA-DT) CHEMetrics (Range: _____ mg/L)

Analysis Time: 1155

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	10-50 mg/L	200 ml	0.3636 N	0.1
☑	20-100 mg/L	100 ml	0.3636 N	0.2
☐	100-400 mg/L	200 ml	3.636 N	1.0
☐	200-1000 mg/L	100 ml	3.636 N	2.0

Titration Count		Concentration
	x 0.1 =	mg/L
298	x 0.2 =	59.6 mg/L
	x 1.0 =	mg/L
	x 2.0 =	mg/L

CHEMetrics: _____ mg/L

Notes:

Standard Additions: ☐ Titrant Molarity: _____ Digits Required: 1st.: _____ 2nd.: _____ 3rd.: _____

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name:
Project No.:
Sampled By:
Field Analyst:
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: NTC02G 19C 11
Sample Location: Site No. 01002 19C
Duplicate: ☐
Blank: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Sulfide (S^{2-}):

Equipment: DR-700 DR-850 HS-C Color Chart HS-WR Color Wheel Analysis Time: 1212
Program/Module: 610nm 93 Other:

Concentration: 0.80 mg/L Filtered: ☑
Notes: Limit on Colorimeter

Sulfate (SO_4^{2-}):

Equipment: DR-700 DR-8__ Other: Analysis Time:
Program/Module: 91
Concentration: mg/L Filtered: ☐

Standard Solution: ☐ Results:
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

Nitrite (NO_2^--N):

Analysis Time:
Equipment: DR-700 DR-8__ Other: Filtered: ☐
Program/Module: 60
Concentration: mg/L Reagent Blank Correction: ☐
Standard Solution: ☐ Results: ☐
Notes:

Nitrate (NO_3^--N):

Analysis Time:
Equipment: DR-700 DR-8__ Other: Filtered: ☐
Program/Module: 55
Concentration: mg/L
Nitrite Interference Treatment: ☐
Standard Solution: ☐ Results: Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name:

Project No.:

Sampled By:

Field Analyst:

Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: NTC02G19C11

Sample Location: Site No. 01D02190

Duplicate: ☐

Blank: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Manganese (Mn^{2+}):

Equipment: DR-700 DR-8 __ HACH MN-5 Other: _____ Analysis Time: _____

Program/Module: 525nm 41

Concentration: _____ mg/L

Filtered: ☐

Digestion: ☐

Standard Solution: ☐ Results: _____

Reagent Blank Correction: ☐

Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____

Notes:

Ferrous Iron (Fe^{2+}):

Equipment: DR-700 DR-8 (90) IR-18C Color Wheel Other: _____ Analysis Time: 1217

Program/Module: 500nm 33

Concentration: 2.22 mg/L

Filtered: ☑

Notes:

Hydrogen Sulfide (H_2S):

Equipment: (HS-C) Other: _____ Analysis Time: 1208

Concentration: 2.0 mg/L Exceeded 5.0 mg/L range on color chart: ☐

Notes:

QA/QC Checklist:

All data fields have been completed as necessary: ☑

Correct measurement units are cited in the SAMPLING DATA block: ☑

Mulitplication is correct for each *Multiplier* table: ☑

Final calulated concentration is within the appropriate *Range Used* block: ☑

Alkalinity *Relationship* is determined appropriatly as per manufacturer instructions: ☑

QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☑

Nitrite Interference treatment used for Nitrate test if Nitrite was detected: ☑

Title block is initialized by person who performed the QA/QC Ckecklist: ☑

FIGURES

No.

1 Shallow Zone Water Table Elevation Map - October 23, 1999

2 Deep Zone Potentiometric Surface Map - October 23, 1999

3 Groundwater Exceedances - October 1999

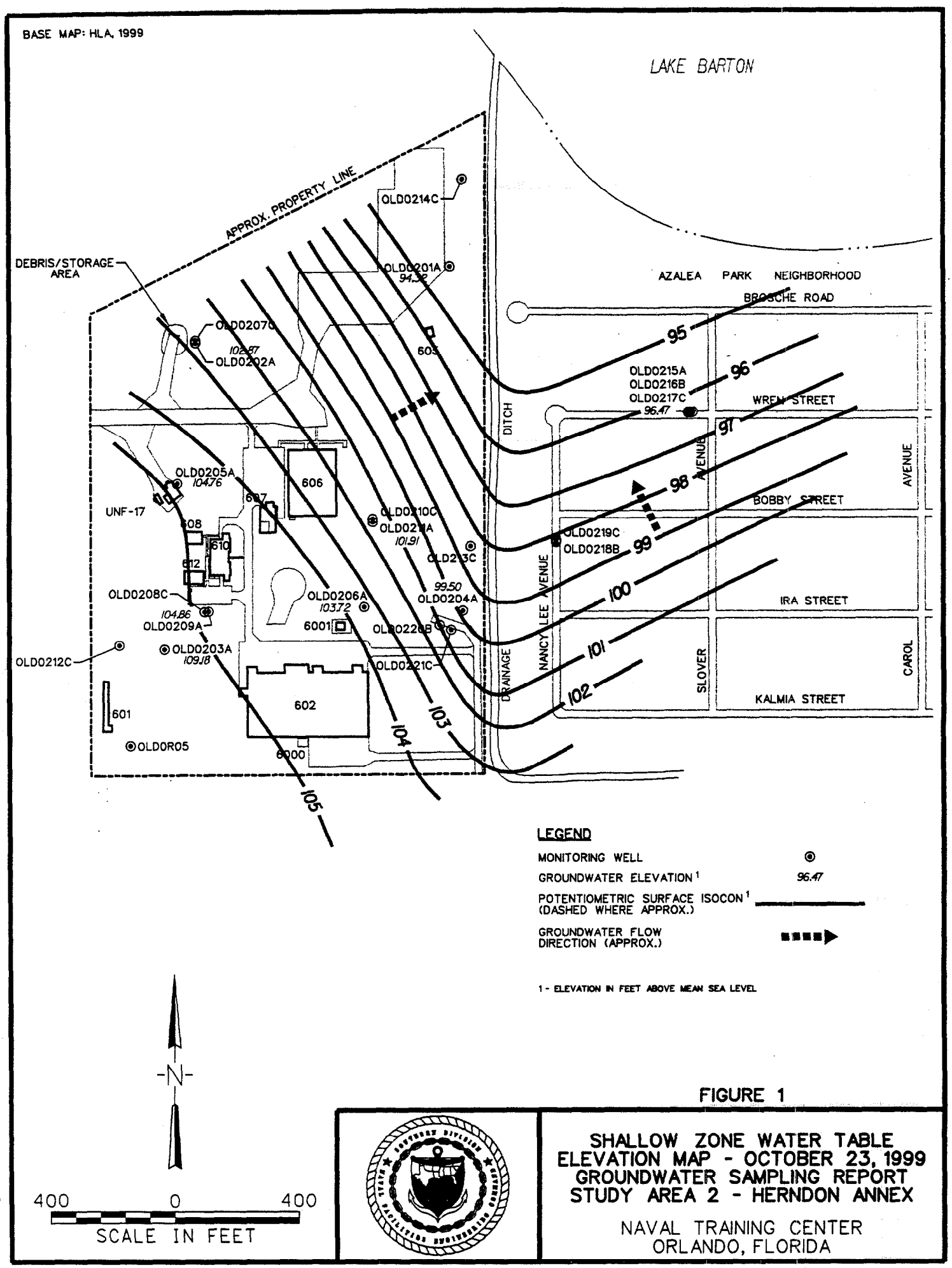

FIGURE 1

SHALLOW ZONE WATER TABLE ELEVATION MAP - OCTOBER 23, 1999
GROUNDWATER SAMPLING REPORT
STUDY AREA 2 - HERNDON ANNEX

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

CAD FILE NO./DATE: 74570035.dgn/2-3-00

n8-5x11v.dgn

BASE MAP: HLA, 1999

LAKE BARTON

APPROX. PROPERTY LINE

DEBRIS/STORAGE AREA

OLD0214C 93.86

OLD0201

OLD0207C 98.52

OLD0202A

605

OLD0215A
OLD0216B
OLD0217C 96.23

AZALEA PARK NEIGHBORHOOD

BROSCHE ROAD

WREN STREET

BOBBY STREET

IRA STREET

KALMIA STREET

DITCH

NANCY LEE AVENUE

SLOVER AVENUE

CAROL AVENUE

DRAINAGE

OLD0205A

606

607

UNF-17

608

610

612

98.19 OLD0210C

OLD0211A

97.06 OLD0219C

OLD0218B

OLD0213C 97.19

OLD0208C 104.48

OLD0206A

OLD0204A

OLD0209A

6001

OLD0220B

OLD0203A

OLD0212C 104.45

OLD0221C 102.59

601

602

OLD0R05

6000

94 95 96 97 98 99 100 101 102 103 104

LEGEND

MONITORING WELL ⊙

GROUNDWATER ELEVATION[1] 96.23

POTENTIOMETRIC SURFACE ISOCON[1] (DASHED WHERE APPROX.)

GROUNDWATER FLOW DIRECTION (APPROX.)

1 - ELEVATION IN FEET ABOVE MEAN SEA LEVEL

N

400 0 400

SCALE IN FEET

FIGURE 2

DEEP ZONE POTENTIOMETRIC SURFACE MAP - OCTOBER 23, 1999
GROUNDWATER SAMPLING REPORT
STUDY AREA 2 - HERNDON ANNEX

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

CAD FILE NO./DATE: 74570036.dgn/2-3-00

n8-5x11v.dgn

00239F012

BASE MAP: HLA, 1999

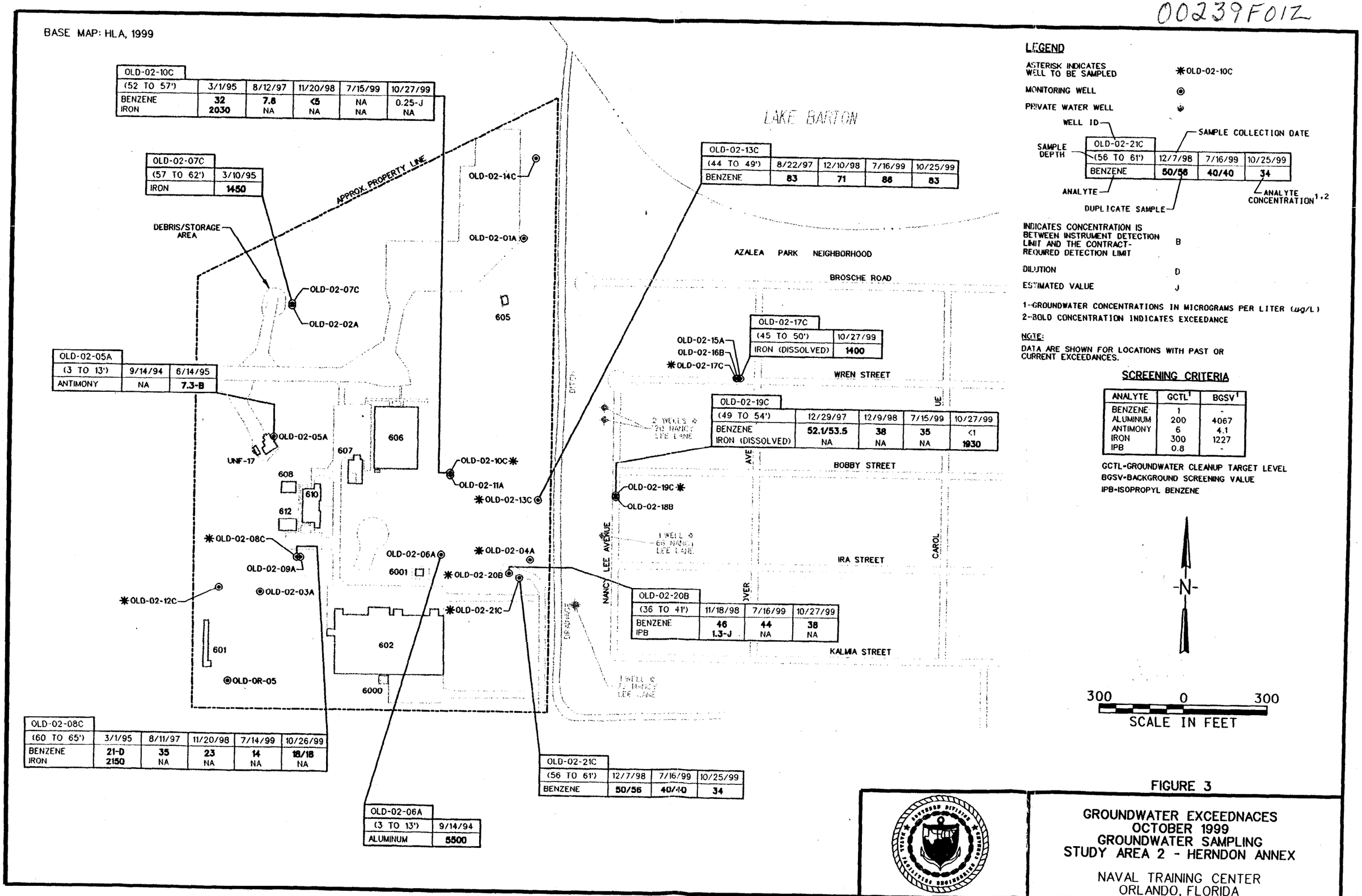

FIGURE 3

GROUNDWATER EXCEEDNACES
OCTOBER 1999
GROUNDWATER SAMPLING
STUDY AREA 2 - HERNDON ANNEX

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

m11x17b.dgn