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LETTER REGARDING THE TRANSMITTAL OF GROUNDWATER SAMPLING FOR STUDY AREA 36 NTC ORLANDO FL
1/25/2005
TETRA TECH

TETRA TECH NUS, INC.
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0105-N004

January 25, 2005

Commander, Southern Division
Naval Facilities Engineering Command
ATTN: Ms. Barbara Nwokike, Code ES33
P.O. Box 190010
2155 Eagle Drive
North Charleston, SC 29419-9010

Reference: CLEAN Contract No. N62467-94-D-0888
Contract Task Order No. 0332

Subject: Groundwater Sampling - Study Area 36 Northwest
Naval Training Center, Orlando, Florida

Dear Ms. Nwokike:

Please find enclosed two copies of the report documenting groundwater sampling conducted at Study Area 36 Northwest in March and June 2004. The report is provided in hardcopy and CD formats for your use.

If you have any questions or comments, please contact me at (865) 220-4730 or Teresa Grayson at (865) 220-4701.

Sincerely,

Teresa K. Grayson for:

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

SBM: ckf

Enclosure

c: Mr. David Grabka, FDEP (hardcopy and CD)
Mr. Gregory Fraley, USEPA Region 4 (hardcopy and CD)
Mr. Steve Tsangaris, CH2M Hill (CD)
Mr. Jim Young, Terraine (CD)
Ms. Teresa Grayson, Tetra Tech NUS (hardcopy)
Mr. Mark Perry, Tetra Tech NUS (hardcopy and CD)
Ms. Debra M. Humbert, Tetra Tech NUS (cover letter only)
File/db

GROUNDWATER SAMPLING
at
STUDY AREA 36NW
MARCH and JUNE 2004

Naval Training Center
Orlando, Florida

Southern Division
Naval Facilities Engineering Command

Contract Number N62467-94-D-0888

Contract Task Order 0332

January 2005

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1 Water Level Elevations Summary
2 Positive Detections in Groundwater – March and June 2004
3 Historical Detections in Groundwater
4 Validated Groundwater Analytical Results – March and June 2004

GROUNDWATER SAMPLING AT STUDY AREA 36NW
NAVAL TRAINING CENTER ORLANDO

Prepared for:	Ms. Barbara Nwokike, SOUTHDIV
Prepared by:	Teresa Grayson
Period of Performance:	March 20 – 23, 2004 and June 11 – 14, 2004
Field Team:	Karen Baer (March and June) Brandon Pruitt (March) Norm Barnes (March) Larry Wolski (March and June)
TtNUS Task Order Manager:	Mr. Steven B. McCoy, P.E.
Contract:	No. N62467-94-D-0888 Contract Task Order No. 0332
Date:	January 25, 2005

1. INTRODUCTION

Terraine, Inc. (Terraine) conducted quarterly groundwater sampling at Study Area (SA) 36NW in March and June 2004 in accordance with the *Work Plan: Long Term Monitoring Services at Former Naval Training Center, Orlando, Florida* (Terraine, Inc., 2003).

2. FIELD ACTIVITIES

Terraine performed the field work between March 20 and 23, 2004 and between June 11 and 14, 2004. Each field event included a groundwater level survey and groundwater sampling.

2.1 Water Level Surveys

Groundwater levels were measured from all site monitoring wells at SA 36NW on March 20 and June 11, 2004.

2.2 Sampling

Groundwater sampling was conducted at SA 36NW on March 23 and June 14, 2004. Seven 2-inch diameter wells were purged and sampled using the low-flow method described in the work plan. Each well was purged with a peristaltic pump prior to sampling by removing groundwater until field parameters, which include temperature, pH, conductivity, turbidity, and dissolved oxygen, had stabilized. Water levels in the wells were continuously monitored to limit drawdown to less than 0.3 feet. Groundwater sample log sheets are included in Appendix A.

Groundwater samples from all site monitoring wells were laboratory analyzed for the following during both the March and June 2004 sampling events:

- VOCs by EPA Method 8260B
- TPH by FL-PRO
- Nitrate, nitrite, and sulfate by EPA Method 300.0
- Methane by RSK175M
- Hydrogen

In addition, in March 2004 the field team measured natural attenuation parameters dissolved oxygen, carbon dioxide, alkalinity, ferrous iron, hydrogen sulfide, and manganese from each well using field test kits. Equipment interference prevented field measurement of carbon dioxide for wells MW-40D and MW-43C. Laboratory analysis of carbon dioxide was completed for these wells. In June the field team measured the natural attenuation parameters noted for March along with sulfide. All samples were placed in ice-chilled coolers and delivered to Test America Analytical Testing Corporation in Orlando, Florida for laboratory analysis except for the hydrogen samples which were analyzed by VaporTech.

2.3 Problems Encountered

The turbidity levels exceeded the preferred criterion of 10 NTUs or below in all wells in March 2004 with turbidity readings ranging from 25.8 NTU in well MW-41C to 1,000 NTU in wells MW-40D and MW-43C. The turbidity levels exceeded 10 NTUs or below in all wells except MW-39C (8.36 NTU) in June 2004 with turbidity readings ranging from 15 NTU (MW-41C) to 702 NTU (MW-43C).

3. RESULTS

3.1 Water Level Survey

Groundwater elevation data at SA 36NW are presented in Table 1. The potentiometric surface map generated based on the observed groundwater elevations at SA 36NW on June 11, 2004 is presented in Figure 1. The groundwater flow direction is toward the east across the western part of SA 36NW with a more northeastern flow direction observed on the eastern portion of the site.

3.2 Data Validation

The laboratory analytical data was validated by Test America using Earthsoft® Electronic Lab Data Checker, Version 1.01 and then again by Terraine using the EQuIS Data Processor by Earthsoft®. Qualifiers resulting from the validation process are shown with the analyte concentrations in Tables 2, 3, and 4.

3.3 Analytical Results

Table 2 presents a summary of the analytes detected during the March and June 2004 sampling events at SA 36NW including the results of field test kits. The historical detections are compiled in Table 3 and the validated analytical data for the March and June 2004 sampling events are included in Table 4. Shaded cells indicate concentrations equal to or greater than Florida Groundwater Cleanup Target Levels (GCTLs).

March 2004

The contaminants 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, isopropyl benzene, naphthalene, and TPH were detected at concentrations greater than their respective GCTLs in one or more wells in March 2004. Benzene was observed at concentrations greater than the GCTL of 1 μg/L in wells MW-40D, MW-41C, and MW-43C.

June 2004

The contaminants 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, isopropyl benzene, and naphthalene were detected at concentrations greater than their respective GCTLs in one or more wells in June 2004. Benzene was observed at concentrations greater than the GCTL of 1 μg/L in wells MW-40D, MW-41C, and MW-43C.

The distribution of contaminants detected at concentrations greater than their GCTLs are shown on Figure 2. The distribution of petroleum contaminants in groundwater at SA 36NW is depicted in Figure 3.

4. REFERENCES

Terraine, Inc., 2003. *Work Plan: Long Term Monitoring Services at Former Naval Training Center, Orlando, Florida*.

TABLES

No.

1 Water Level Elevations Summary

2 Positive Detections in Groundwater – March and June 2004

3 Historical Detections in Groundwater

4 Validated Groundwater Analytical Results – March and June 2004

TABLE 1

WATER LEVEL ELEVATIONS SUMMARY
STUDY AREA 36 NW

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Number	Screen Interval (BGS)	Well Type	Date Installed	TOC Elevation[1] (AMSL)	09/09/03		02/09/04		03/20/04		06/11/04	
					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)
MW-38C	30-35	2-inch	9/5/03	115.59	6.17	109.42	7.38	108.21	7.32	108.27	7.68	107.91
MW-39C	30-35	2-inch	9/8/03	114.77	6.55	108.22	Not Measured		8.63	106.14	7.98	106.79
MW-40D	49-54	2-inch	9/3/03	115.19	8.96	106.23	9.51	105.68	9.1	106.09	11.32	103.87
MW-41C	30-35	2-inch	9/3/03	114.62	7.9	106.72	9.13	105.49	9.01	105.61	9.3	105.32
MW-42C	30-35	2-inch	9/3/03	113.09	6.69	106.40	7.86	105.23	7.7	105.39	8.2	104.89
MW-43C	30-35	2-inch	9/4/03	113.35	7.1	106.25	8.3	105.05	8.24	105.11	8.45	104.90
MW-44C	30-35	2-inch	9/5/03	114.65	8.75	105.90	10.05	104.60	9.95	104.70	10.05	104.60
MW-45C	30-35	2-inch	8/24/04	112.28	Not Installed		Not Installed		Not Installed		Not Installed	
MW-46D	55-60	2-inch	8/24/04	114.62	Not Installed		Not Installed		Not Installed		Not Installed	

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.
[1] Top of casing elevations for wells MW-38C through MW-44C are from the survey performed on December 2, 2003. Top of casing elevations for wells MW-45C and MW-46D are from the November 1, 2004 survey. Vertical datum for both surveys is the National Geodetic Vertical Datum (NGVD) 1929.

TABLE 2

POSITIVE DETECTIONS IN GROUNDWATER - MARCH AND JUNE 2004
STUDY AREA 36NW

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION	CAS NUMBER	Screening Criteria	MW-36-38C		MW-36-39C		MW-36-40D	
SAMPLE ID		Florida	OLD-36N-38C-032304	OLD-36N-38C-061404	OLD-36N-39C-032304	OLD-36N-39C-061404	OLD-36N-40D-032304	OLD-36N-40D-061404
SAMPLE DATE		GCTL[a]	03/23/04	06/14/04	03/23/04	06/14/04	03/23/04	06/14/04
Volatile Organics (µg/L)								
1,2,4-Trimethylbenzene	95-63-6	10	24.5	26.3			2.93	
1,3,5-Trimethylbenzene	108-67-8	10	88.9	9.05			1.3	
2-Butanone	78-93-3	4200	1.07				14.4	
4-Isopropyltoluene	99-87-6	*	6.05	4.36				
Acetone	67-64-1	700					188	
Benzene	71-43-2	1					12.2	5.59
Carbon Disulfide	75-15-0	700					57.6	7.99
Ethylbenzene	100-41-4	30	12.9	12.6			7.89	4.08
Isopropylbenzene	98-82-8	0.8	4.42	4.2				
Methyl *tert*-Butyl Ether	1634-04-4	50						
n-Butylbenzene	104-51-8	*		45.1				
n-Propylbenzene	103-65-1	*	10.9	10.6				
Naphthalene	91-20-3	20	176	222				
Tetrachloroethene	127-18-4	3						
Toluene	108-88-3	40						
Total Xylenes	1330-20-7	20	1.07	10.6			4.93	1.28
Trichloroethene	79-01-6	3						
Petroleum Hydrocarbons (µg/L)								
Total Petroleum Hydrocarbons	No CAS #	5000	1420	580			11600	
Dissolved Gases (nM/L)								
Hydrogen	1333-74-0	*	3.1	2.6	2.2	2.6	2.4	2.5
Miscellaneous Parameters (µg/L)								
Alkalinity	No CAS #	*	NA	NA	NA	NA	1360000	NA
Carbon Dioxide	124-38-9	*	NA	NA	NA	NA		NA
Methane	74-82-8			138				
Nitrate-N	14797-55-8	10000	11		107	227	953	37
Nitrite-N	14797-65-0	1000						64
Sulfate	14808-79-8	250000		25100	48200	5920	250000	96800
Total Dissolved Solids	C-010	500000	NA	NA	NA	NA	1630000	NA
Field Test Kit Measurements (mg/L)								
Alkalinity			95.00	80.00	784.00	40.00	0.00	160.00
Carbon Dioxide			276.00	192.00	156.00	51.00	0.00	54.00
Dissolved Oxygen			1.80	2.20	3.40	0.02	0.00	0.00
Ferrous Iron			1.00	1.10	0.00	0.20	0.40	0.00
Hydrogen Sulfide			5.00	5.00	0.10	0.50	0.70	0.50
Manganese			0.00	0.00	0.00	0.00	0.00	0.00
Sulfate			NS	NS	NS	NS	NS	NS
Sulfide			NS	0.04	NS	0.02	NS	0.00

TABLE 2

POSITIVE DETECTIONS IN GROUNDWATER - MARCH AND JUNE 2004
STUDY AREA 36NW

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION	CAS NUMBER	Screening Criteria	MW-36-41C		MW-36-42C		MW-36-43C	
SAMPLE ID		Florida GCTL[a]	OLD-36N-41C-032304	OLD-36N-41C-061404	OLD-36N-42C-032304	OLD-36N-42C-061404	OLD-36N-43C-032304	OLD-36N-43C-061404
SAMPLE DATE			03/23/04	06/14/04	03/23/04	06/14/04	03/23/04	06/14/04
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	99-87-6	*						1.35
Acetone	67-64-1	700						
Benzene	71-43-2	1	3.26	5.8			24.8	15.8
Carbon Disulfide	75-15-0	700						
Ethylbenzene	100-41-4	30						
Isopropylbenzene	98-82-8	0.8						
Methyl *tert*-Butyl Ether	1634-04-4	50	24.6	25.3	1.95	1.37	19.3	12.8
n-Butylbenzene	104-51-8	*						
n-Propylbenzene	103-65-1	*						
Naphthalene	91-20-3	20						
Tetrachloroethene	127-18-4	3						
Toluene	108-88-3	40					2.92	2.36
Total Xylenes	1330-20-7	20						
Trichloroethene	79-01-6	3						
Petroleum Hydrocarbons (µg/L)								
Total Petroleum Hydrocarbons	No CAS #	5000						
Dissolved Gases (nM/L)								
Hydrogen	1333-74-0	*	2.5	2.7	2.9	2.6	2.2	2.9
Miscellaneous Parameters (µg/L)								
Alkalinity	No CAS #	*	NA	NA	NA	NA		NA
Carbon Dioxide	124-38-9	*	NA	NA	NA	NA	1300	300000
Methane	74-82-8			264			1040	3580
Nitrate-N	14797-55-8	10000	76		13		5	
Nitrite-N	14797-65-0	1000						
Sulfate	14808-79-8	250000	15800	7980		10100	15800	10200
Total Dissolved Solids	C-010	500000	NA	NA	NA	NA	593000	564000
Field Test Kit Measurements (mg/L)								
Alkalinity			350.00	0.00	15.00	5.00	20.00	0.00
Carbon Dioxide			82.00	84.00	96.00	77.00	0.00	0.00
Dissolved Oxygen			0.00	0.00	1.60	1.40	0.00	0.60
Ferrous Iron			0.40	2.80	1.00	3.40	1.00	3.00
Hydrogen Sulfide			0.00	0.10	0.00	0.50	2.00	2.00
Manganese			0.00	0.00	0.00	0.00	0.00	0.00
Sulfate			NS	NS	NS	NS	NS	NS
Sulfide			NS	0.07	NS	0.00	NS	1.25

TABLE 2

POSITIVE DETECTIONS IN GROUNDWATER - MARCH AND JUNE 2004
STUDY AREA 36NW

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION	CAS NUMBER	Screening Criteria	MW-36-44C	
SAMPLE ID		Florida GCTL[a]	OLD-36N-44C-032304	OLD-36N-44C-061404
SAMPLE DATE			03/23/04	06/14/04
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	99-87-6	*		
Acetone	67-64-1	700		
Benzene	71-43-2	1		
Carbon Disulfide	75-15-0	700		
Ethylbenzene	100-41-4	30		
Isopropylbenzene	98-82-8	0.8		
Methyl *tert*-Butyl Ether	1634-04-4	50		
n-Butylbenzene	104-51-8	*		
n-Propylbenzene	103-65-1	*		
Naphthalene	91-20-3	20		
Tetrachloroethene	127-18-4	3	1.1	
Toluene	108-88-3	40		
Total Xylenes	1330-20-7	20		
Trichloroethene	79-01-6	3	1.9	1.54
Petroleum Hydrocarbons (µg/L)				
Total Petroleum Hydrocarbons	No CAS #	5000		
Dissolved Gases (nM/L)				
Hydrogen	1333-74-0	*	4.1	2.8
Miscellaneous Parameters (µg/L)				
Alkalinity	No CAS #	*	NA	NA
Carbon Dioxide	124-38-9	*	NA	NA
Methane	74-82-8		77	411
Nitrate-N	14797-55-8	10000	9	
Nitrite-N	14797-65-0	1000		
Sulfate	14808-79-8	250000	2560	2670
Total Dissolved Solids	C-010	500000	NA	NA
Field Test Kit Measurements (mg/L)				
Alkalinity			15.00	20.00
Carbon Dioxide			83.00	109.00
Dissolved Oxygen			1.40	0.00
Ferrous Iron			1.40	2.50
Hydrogen Sulfide			5.00	5.00
Manganese			0.00	0.00
Sulfate			NS	NS
Sulfide			NS	0.12

TABLE 2

POSITIVE DETECTIONS IN GROUNDWATER - MARCH AND JUNE 2004
STUDY AREA 36NW

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Notes:

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

* Indicates that the screening value is not available.

Empty cells indicate non-detects.

NA - No analysis performed.

Only chemicals detected in at least one sample are shown.

Values in shaded cells are equal to or exceed the screening criteria.

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 36NW

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION	CAS NUMBER	Screening Criteria	MW-36-38C			MW-36-39C		
SAMPLE ID		Florida	NTC36G38C01	OLD-36N-38C-032304	OLD-36N-38C-061404	NTC36G39C01	OLD-36N-39C-032304	OLD-36N-39C-061404
SAMPLE DATE		GCTL[a]	09/10/03	03/23/04	06/14/04	09/10/03	03/23/04	06/14/04
Volatile Organics (µg/L)								
1,2,4-Trimethylbenzene	95-63-6	10	NA	24.5	26.3	NA		
1,2-Dichloroethane	107-06-2	3						
1,3,5-Trimethylbenzene	108-67-8	10	NA	88.9	9.05	NA		
2-Butanone	78-93-3	4200		1.07				
4-Isopropyltoluene	99-87-6	*	NA	6.05	4.36	NA		
Acetone	67-64-1	700						
Benzene	71-43-2	1						
Bromodichloromethane	75-27-4	0.6						
Carbon Disulfide	75-15-0	700	4.1					
Chlorodibromomethane	124-48-1	0.4						
Chloroform	67-66-3	5.7	2.7			2.5		
cis-1,2-Dichloroethene	156-59-2	70						
Ethylbenzene	100-41-4	30	8.9	12.9	12.6			
Isopropylbenzene	98-82-8	0.8	NA	4.42	4.2	NA		
methyl *tert*-butyl Ether	1634-04-4	50						
Methylene Chloride	75-09-2	5						
n-Butylbenzene	104-51-8	*	NA		45.1	NA		
n-Propylbenzene	103-65-1	*	NA	10.9	10.6	NA		
Naphthalene	91-20-3	20	NA	176	222	NA		
Tetrachloroethene	127-18-4	3						
Toluene	108-88-3	40	0.67 J					
Total Xylenes	1330-20-7	20	78.4	1.07	10.6			
Trichloroethene	79-01-6	3						
Petroleum Hydrocarbons (µg/L)								
Total Petroleum Hydrocarbons	NO CAS#	5000	NA	1420	580	NA		
Dissolved Gases (nM/L)								
Hydrogen	1333-74-0	*	NA	3.1	2.6	NA	2.2	2.6
Miscellaneous Parameters (µg/L)								
Alkalinity	NO CAS#	*	NA	NA	NA	NA	NA	NA
Carbon Dioxide	124-38-9	*	NA	NA	NA	NA	NA	NA
Methane	74-82-8	*	NA		138	NA		
Nitrate-N	14797-55-8	10000	NA	11		NA	107	227
Nitrite-N	14797-65-0	1000	NA			NA		
Sulfate	14808-79-8	250000	NA		25100	NA	48200	5920
Total Dissolved Solids	C-010	500000	NA	NA	NA	NA	NA	NA

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 36NW

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION	CAS NUMBER	Screening Criteria	MW-36-40D				MW-36-41C	
SAMPLE ID		Florida	NTC36G40D01	NTC36G40D02	OLD-36N-40D-032304	OLD-36N-40D-061404	NTC36G41C01	NTC36G41C01-D
SAMPLE DATE		GCTL[a]	09/10/03	02/09/04	03/23/04	06/14/04	09/09/03	09/09/03
Volatile Organics (µg/L)								
1,2,4-Trimethylbenzene	95-63-6	10	NA	NA	2.93		NA	NA
1,2-Dichloroethane	107-06-2	3						
1,3,5-Trimethylbenzene	108-67-8	10	NA	NA	1.3		NA	NA
2-Butanone	78-93-3	4200			14.4			
4-Isopropyltoluene	99-87-6	*	NA	NA			NA	NA
Acetone	67-64-1	700		108 J	188			
Benzene	71-43-2	1	5.4 J	42.4 J	12.2	5.59	541	678
Bromodichloromethane	75-27-4	0.6						
Carbon Disulfide	75-15-0	700		33.8 J	57.6	7.99	5.1 J	6.6 J
Chlorodibromomethane	124-48-1	0.4						
Chloroform	67-66-3	5.7	5.8 J	1.1 J			9.4 J	9.6 J
cis-1,2-Dichloroethene	156-59-2	70						
Ethylbenzene	100-41-4	30		43 J	7.89	4.08	91.1	96.7
Isopropylbenzene	98-82-8	0.8	NA	NA			NA	NA
methyl *tert*-butyl Ether	1634-04-4	50		0.51 J			105	114
Methylene Chloride	75-09-2	5						
n-Butylbenzene	104-51-8	*	NA	NA			NA	NA
n-Propylbenzene	103-65-1	*	NA	NA			NA	NA
Naphthalene	91-20-3	20	NA	NA			NA	NA
Tetrachloroethene	127-18-4	3						
Toluene	108-88-3	40		0.73 J			92.6	102
Total Xylenes	1330-20-7	20		19.5 J	4.93	1.28	187	201
Trichloroethene	79-01-6	3						
Petroleum Hydrocarbons (µg/L)								
Total Petroleum Hydrocarbons	NO CAS#	5000	NA	NA	11600		NA	NA
Dissolved Gases (nM/L)								
Hydrogen	1333-74-0	*	NA	NA	2.4	2.5	NA	NA
Miscellaneous Parameters (µg/L)								
Alkalinity	NO CAS#	*	NA	NA	1360000	NA	NA	NA
Carbon Dioxide	124-38-9	*	NA	NA		NA	NA	NA
Methane	74-82-8	*	NA	NA			NA	NA
Nitrate-N	14797-55-8	10000	NA	NA	953	37	NA	NA
Nitrite-N	14797-65-0	1000	NA	NA		64	NA	NA
Sulfate	14808-79-8	250000	NA	NA	250000	96800	NA	NA
Total Dissolved Solids	C-010	500000	NA	NA	1630000	NA	NA	NA

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 36NW

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION	CAS NUMBER	Screening Criteria	MW-36-41C			MW-36-42C	
SAMPLE ID		Florida	OLD-36N-41C-032304	OLD-36N-41C-061404	NTC36G41C05	NTC36G42C01	OLD-36N-42C-032304
SAMPLE DATE		GCTL[a]	03/23/04	06/14/04	09/01/04	09/10/03	03/23/04
Volatile Organics (µg/L)							
1,2,4-Trimethylbenzene	95-63-6	10			NA	NA	
1,2-Dichloroethane	107-06-2	3			5.1		
1,3,5-Trimethylbenzene	108-67-8	10			NA	NA	
2-Butanone	78-93-3	4200					
4-Isopropyltoluene	99-87-6	*			NA	NA	
Acetone	67-64-1	700					
Benzene	71-43-2	1	3.26	5.8	207	2.6	
Bromodichloromethane	75-27-4	0.6				0.72 J	
Carbon Disulfide	75-15-0	700				5.5	
Chlorodibromomethane	124-48-1	0.4					
Chloroform	67-66-3	5.7				10	
cis-1,2-Dichloroethene	156-59-2	70					
Ethylbenzene	100-41-4	30			20.6		
Isopropylbenzene	98-82-8	0.8			NA	NA	
methyl *tert*-butyl Ether	1634-04-4	50	24.6	25.3	84.6	1.7 J	1.95
Methylene Chloride	75-09-2	5				1.1 J	
n-Butylbenzene	104-51-8	*			NA	NA	
n-Propylbenzene	103-65-1	*			NA	NA	
Naphthalene	91-20-3	20			NA	NA	
Tetrachloroethene	127-18-4	3					
Toluene	108-88-3	40					
Total Xylenes	1330-20-7	20			28.6		
Trichloroethene	79-01-6	3					
Petroleum Hydrocarbons (µg/L)							
Total Petroleum Hydrocarbons	NO CAS#	5000			NA	NA	
Dissolved Gases (nM/L)							
Hydrogen	1333-74-0	*	2.5	2.7	NA	NA	2.9
Miscellaneous Parameters (µg/L)							
Alkalinity	NO CAS#	*	NA	NA	NA	NA	NA
Carbon Dioxide	124-38-9	*	NA	NA	NA	NA	NA
Methane	74-82-8	*		264	NA	NA	
Nitrate-N	14797-55-8	10000	76		NA	NA	13
Nitrite-N	14797-65-0	1000			NA	NA	
Sulfate	14808-79-8	250000	15800	7980	NA	NA	
Total Dissolved Solids	C-010	500000	NA	NA	NA	NA	NA

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 36NW

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION	CAS NUMBER	Screening Criteria	MW-36-42C		MW-36-43C		
SAMPLE ID		Florida	OLD-36N-42C-061404	NTC36G42C05	NTC36G43C01	OLD-36N-43C-032304	OLD-36N-43C-061404
SAMPLE DATE		GCTL[a]	06/14/04	08/31/04	09/09/03	03/23/04	06/14/04
Volatile Organics (µg/L)							
1,2,4-Trimethylbenzene	95-63-6	10		NA	NA		
1,2-Dichloroethane	107-06-2	3					
1,3,5-Trimethylbenzene	108-67-8	10		NA	NA		
2-Butanone	78-93-3	4200					
4-Isopropyltoluene	99-87-6	*		NA	NA		1.35
Acetone	67-64-1	700					
Benzene	71-43-2	1			0.83 J	24.8	15.8
Bromodichloromethane	75-27-4	0.6			0.54 J		
Carbon Disulfide	75-15-0	700			2.5		
Chlorodibromomethane	124-48-1	0.4					
Chloroform	67-66-3	5.7			4.6		
cis-1,2-Dichloroethene	156-59-2	70					
Ethylbenzene	100-41-4	30					
Isopropylbenzene	98-82-8	0.8		NA	NA		
methyl *tert*-butyl Ether	1634-04-4	50	1.37	4.1	21.8	19.3	12.8
Methylene Chloride	75-09-2	5			1 U		
n-Butylbenzene	104-51-8	*		NA	NA		
n-Propylbenzene	103-65-1	*		NA	NA		
Naphthalene	91-20-3	20		NA	NA		
Tetrachloroethene	127-18-4	3					
Toluene	108-88-3	40				2.92	2.36
Total Xylenes	1330-20-7	20					
Trichloroethene	79-01-6	3					
Petroleum Hydrocarbons (µg/L)							
Total Petroleum Hydrocarbons	NO CAS#	5000		NA	NA		
Dissolved Gases (nM/L)							
Hydrogen	1333-74-0	*	2.6	NA	NA	2.2	2.9
Miscellaneous Parameters (µg/L)							
Alkalinity	NO CAS#	*	NA	NA	NA		NA
Carbon Dioxide	124-38-9	*	NA	NA	NA	1300	300000
Methane	74-82-8	*		NA	NA	1040	3580
Nitrate-N	14797-55-8	10000		NA	NA	5	
Nitrite-N	14797-65-0	1000		NA	NA		
Sulfate	14808-79-8	250000	10100	NA	NA	15800	10200
Total Dissolved Solids	C-010	500000	NA	NA	NA	593000	564000

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 36NW

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION	CAS NUMBER	Screening Criteria	MW-36-43C		MW-36-44C		
SAMPLE ID		Florida	NTC36G43C05	NTC36G43C05-D	NTC36G44C01	OLD-36N-44C-032304	OLD-36N-44C-061404
SAMPLE DATE		GCTL[a]	08/31/04	08/31/04	09/09/03	03/23/04	06/14/04
Volatile Organics (µg/L)							
1,2,4-Trimethylbenzene	95-63-6	10	NA	NA	NA		
1,2-Dichloroethane	107-06-2	3					
1,3,5-Trimethylbenzene	108-67-8	10	NA	NA	NA		
2-Butanone	78-93-3	4200					
4-Isopropyltoluene	99-87-6	*	NA	NA	NA		
Acetone	67-64-1	700					
Benzene	71-43-2	1	342	351			
Bromodichloromethane	75-27-4	0.6					
Carbon Disulfide	75-15-0	700					
Chlorodibromomethane	124-48-1	0.4					
Chloroform	67-66-3	5.7			2.3		
cis-1,2-Dichloroethene	156-59-2	70			0.6 J		
Ethylbenzene	100-41-4	30					
Isopropylbenzene	98-82-8	0.8	NA	NA	NA		
methyl *tert*-butyl Ether	1634-04-4	50	98.1	113			
Methylene Chloride	75-09-2	5					
n-Butylbenzene	104-51-8	*	NA	NA	NA		
n-Propylbenzene	103-65-1	*	NA	NA	NA		
Naphthalene	91-20-3	20	NA	NA	NA		
Tetrachloroethene	127-18-4	3			4.8	1.1	
Toluene	108-88-3	40	6	5.1			
Total Xylenes	1330-20-7	20					
Trichloroethene	79-01-6	3			4.8	1.9	1.54
Petroleum Hydrocarbons (µg/L)							
Total Petroleum Hydrocarbons	NO CAS#	5000	NA	NA	NA		
Dissolved Gases (nM/L)							
Hydrogen	1333-74-0	*	NA	NA	NA	4.1	2.8
Miscellaneous Parameters (µg/L)							
Alkalinity	NO CAS#	*	NA	NA	NA	NA	NA
Carbon Dioxide	124-38-9	*	NA	NA	NA	NA	NA
Methane	74-82-8	*	NA	NA	NA	77	411
Nitrate-N	14797-55-8	10000	NA	NA	NA	9	
Nitrite-N	14797-65-0	1000	NA	NA	NA		
Sulfate	14808-79-8	250000	NA	NA	NA	2560	2670
Total Dissolved Solids	C-010	500000	NA	NA	NA	NA	NA

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 36NW

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION	CAS NUMBER	Screening Criteria	MW-36-45C	MW-36-46D
SAMPLE ID		Florida	NTC36G45C05	NTC36G46D05
SAMPLE DATE		GCTL[a]	09/01/04	09/01/04
Volatile Organics (µg/L)				
1,2,4-Trimethylbenzene	95-63-6	10	NA	NA
1,2-Dichloroethane	107-06-2	3		
1,3,5-Trimethylbenzene	108-67-8	10	NA	NA
2-Butanone	78-93-3	4200		
4-Isopropyltoluene	99-87-6	*	NA	NA
Acetone	67-64-1	700		
Benzene	71-43-2	1		
Bromodichloromethane	75-27-4	0.6		0.58 J
Carbon Disulfide	75-15-0	700		
Chlorodibromomethane	124-48-1	0.4	2	
Chloroform	67-66-3	5.7		1.4
cis-1,2-Dichloroethene	156-59-2	70		
Ethylbenzene	100-41-4	30		
Isopropylbenzene	98-82-8	0.8	NA	NA
methyl *tert*-butyl Ether	1634-04-4	50		
Methylene Chloride	75-09-2	5		
n-Butylbenzene	104-51-8	*	NA	NA
n-Propylbenzene	103-65-1	*	NA	NA
Naphthalene	91-20-3	20	NA	NA
Tetrachloroethene	127-18-4	3		
Toluene	108-88-3	40		
Total Xylenes	1330-20-7	20		
Trichloroethene	79-01-6	3		
Petroleum Hydrocarbons (µg/L)				
Total Petroleum Hydrocarbons	NO CAS#	5000	NA	NA
Dissolved Gases (nM/L)				
Hydrogen	1333-74-0	*	NA	NA
Miscellaneous Parameters (µg/L)				
Alkalinity	NO CAS#	*	NA	NA
Carbon Dioxide	124-38-9	*	NA	NA
Methane	74-82-8	*	NA	NA
Nitrate-N	14797-55-8	10000	NA	NA
Nitrite-N	14797-65-0	1000	NA	NA
Sulfate	14808-79-8	250000	NA	NA
Total Dissolved Solids	C-010	500000	NA	NA

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 36NW

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Notes:

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

* Indicates that the screening value is not available.

Empty cells indicate non-detects.

"J" qualifier indicates an estimated value.

NA - No analysis performed.

Only chemicals detected in at least one sample are shown.

Values in shaded cells are equal to or exceed the screening criteria.

TABLE 4

VALIDATED GROUNDWATER ANALYTICAL RESULTS - MARCH AND JUNE 2004
STUDY AREA 36NW

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION	CAS NUMBER	Screening Criteria	MW-36-38C		MW-36-39C	MW-36-39C
SAMPLE ID		Florida	OLD-36N-38C-032304	OLD-36N-38C-061404	OLD-36N-39C-032304	OLD-36N-39C-061404
SAMPLE DATE		GCTL[a]	03/23/04	06/14/04	03/23/04	06/14/04
Volatile Organics (µg/L)						
1,1,1,2-Tetrachloroethane	630-20-6	1.3	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	71-55-6	200	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2-Trichloroethane	79-00-5	5	1 U	1 U	1 U	1 U
1,1-Dichloroethane	75-34-3	70	1 U	1 U	1 U	1 U
1,1-Dichloroethene	75-35-4	7	1 U	1 U	1 U	1 U
1,1-Dichloropropene	563-58-6	*	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	87-61-6	70	1 U	1 U	1 U	1 U
1,2,3-Trichloropropane	96-18-4	0.2	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	120-82-1	70	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	95-63-6	10	24.5	26.3	1 U	1 U
1,2-Dibromo-3-Chloropropane	96-12-8	0.2	1 U	1 U	1 U	1 U
1,2-Dibromoethane	106-93-4	0.02	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	95-50-1	600	1 U	1 U	1 U	1 U
1,2-Dichloroethane	107-06-2	3	1 U	1 U	1 U	1 U
1,2-Dichloropropane	78-87-5	5	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	108-67-8	10	88.9	9.05	1 U	1 U
1,3-Dichlorobenzene	541-73-1	10	1 U	1 U	1 U	1 U
1,3-Dichloropropane	142-28-9	*	0.22 U	0.22 U	0.22 U	0.22 U
1,4-Dichlorobenzene	106-46-7	75	1 U	1 U	1 U	1 U
2,2-Dichloropropane	594-20-7	*	1 U	1 U	1 U	1 U
2-Butanone	78-93-3	4200	1.07	1 U	1 U	1 U
2-Chloroethyl Vinyl Ether	110-75-8	175	1 U	1 U	1 U	1 U
2-Chlorotoluene	95-49-8	140	1 U	1 U	1 U	1 U
2-Hexanone	591-78-6	280	1 U	1 U	1 U	1 U
4-Chlorotoluene	106-43-4	140	1 U	1 U	1 U	1 U
4-Isopropyltoluene	99-87-6	*	6.05	4.36	1 U	1 U
4-methyl-2-pentanone	108-10-1	560	1 U	1 U	1 U	1 U
Acetone	67-64-1	700	10 U	10 U	10 U	10 U
Benzene	71-43-2	1	1 U	1 U	1 U	1 U
Bromobenzene	108-86-1	*	1 U	1 U	1 U	1 U
Bromochloromethane	74-97-5	91	1 U	1 U	1 U	1 U
Bromodichloromethane	75-27-4	0.6	0.6 U	0.6 U	0.6 U	0.6 U
Bromoform	75-25-2	4.4	1 U	1 U	1 U	1 U
Bromomethane	74-83-9	9.8	1 U	1 U	1 U	1 U
Carbon Disulfide	75-15-0	700	1 U	1 U	1 U	1 U
Carbon Tetrachloride	56-23-5	3	1 U	1 U	1 U	1 U
Chlorobenzene	108-90-7	100	1 U	1 U	1 U	1 U
Chlorodibromomethane	124-48-1	0.4	0.4 U	0.4 U	0.4 U	0.4 U

TABLE 4

VALIDATED GROUNDWATER ANALYTICAL RESULTS - MARCH AND JUNE 2004
STUDY AREA 36NW

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION	CAS NUMBER	Screening Criteria	MW-36-38C		MW-36-39C	MW-36-39C
SAMPLE ID		Florida	OLD-36N-38C-032304	OLD-36N-38C-061404	OLD-36N-39C-032304	OLD-36N-39C-061404
SAMPLE DATE		GCTL[a]	03/23/04	06/14/04	03/23/04	06/14/04
Volatile Organics (µg/L) (Continued)						
Chloroethane	75-00-3	12	1 U	1 U	1 U	1 U
Chloroform	67-66-3	5.7	1 U	1 U	1 U	1 U
Chloromethane	74-87-3	2.7	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	70	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	10061-01-5	*	0.23 U	0.23 U	0.23 U	0.23 U
Dibromomethane	74-95-3	*	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	75-71-8	1400	1 U	1 U	1 U	1 U
Ethylbenzene	100-41-4	30	12.9	12.6	1 U	1 U
Hexachlorobutadiene	87-68-3	0.5	0.55 U	0.55 U	0.55 U	0.55 U
Isopropylbenzene	98-82-8	0.8	4.42	4.2	1 U	1 U
Methyl *tert*-Butyl Ether	1634-04-4	50	1 U	1 U	1 U	1 U
Methylene Chloride	75-09-2	5	5 U	5 U	5 U	5 U
N-Butylbenzene	104-51-8	*	1 U	45.1	1 U	1 U
N-Propylbenzene	103-65-1	*	10.9	10.6	1 U	1 U
Naphthalene	91-20-3	20	176	222	5 U	5 U
Sec-Butylbenzene	135-98-8	*	1 U	1 U	1 U	1 U
Styrene	100-42-5	100	1 U	1 U	1 U	1 U
Tert-Butylbenzene	98-06-6	*	1 U	1 U	1 U	1 U
Tetrachloroethene	127-18-4	3	1 U	1 U	1 U	1 U
Toluene	108-88-3	40	1 U	1 U	1 U	1 U
Total Xylenes	1330-20-7	20	1.07	10.6	1 U	1 U
Trans-1,2-Dichloroethene	156-60-5	100	1 U	1 U	1 U	1 U
Trans-1,3-Dichloropropene	10061-02-6	*	0.2 U	0.2 U	0.2 U	0.2 U
Trichloroethene	79-01-6	3	1 U	1 U	1 U	1 U
Trichlorofluoromethane	75-69-4	2100	1 U	1 U	1 U	1 U
Vinyl Chloride	75-01-4	1	1 U	1 U	1 U	1 U
Petroleum Hydrocarbons (µg/L)						
Total Petroleum Hydrocarbons	NO CAS#	5000	1420	580	220 U	204 U
Dissolved Gases (nM/L)						
Hydrogen	1333-74-0	*	3.1	2.6	2.2	2.6
Miscellaneous Parameters (µg/L)						
Alkalinity	NO CAS#	*				
Carbon Dioxide	124-38-9	*				
Methane	74-82-8	*	26 U	138	26 U	26 U
Nitrate-N	14797-55-8	10000	11	3.1 U	107	227
Nitrite-N	14797-65-0	1000	3.5 U	3.5 U	3.5 U	3.5 U
Sulfate	14808-79-8	250000	2000 U	25100	48200	5920
Total Dissolved Solids	C-010	500000				

TABLE 4

VALIDATED GROUNDWATER ANALYTICAL RESULTS - MARCH AND JUNE 2004
STUDY AREA 36NW

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION	CAS NUMBER	Screening Criteria	MW-36-40D		MW-36-41C	
SAMPLE ID		Florida	OLD-36N-40D-032304	OLD-36N-40D-061404	OLD-36N-41C-032304	OLD-36N-41C-061404
SAMPLE DATE		GCTL[a]	03/23/04	06/14/04	03/23/04	06/14/04
Volatile Organics (µg/L)						
1,1,1,2-Tetrachloroethane	630-20-6	1.3	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	71-55-6	200	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2-Trichloroethane	79-00-5	5	1 U	1 U	1 U	1 U
1,1-Dichloroethane	75-34-3	70	1 U	1 U	1 U	1 U
1,1-Dichloroethene	75-35-4	7	1 U	1 U	1 U	1 U
1,1-Dichloropropene	563-58-6	*	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	87-61-6	70	1 U	1 U	1 U	1 U
1,2,3-Trichloropropane	96-18-4	0.2	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	120-82-1	70	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	95-63-6	10	2.93	1 U	1 U	1 U
1,2-Dibromo-3-Chloropropane	96-12-8	0.2	1 U	1 U	1 U	1 U
1,2-Dibromoethane	106-93-4	0.02	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	95-50-1	600	1 U	1 U	1 U	1 U
1,2-Dichloroethane	107-06-2	3	1 U	1 U	1 U	1 U
1,2-Dichloropropane	78-87-5	5	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	108-67-8	10	1.3	1 U	1 U	1 U
1,3-Dichlorobenzene	541-73-1	10	1 U	1 U	1 U	1 U
1,3-Dichloropropane	142-28-9	*	0.22 U	0.22 U	0.22 U	0.22 U
1,4-Dichlorobenzene	106-46-7	75	1 U	1 U	1 U	1 U
2,2-Dichloropropane	594-20-7	*	1 U	1 U	1 U	1 U
2-Butanone	78-93-3	4200	14.4	1 U	1 U	1 U
2-Chloroethyl Vinyl Ether	110-75-8	175	1 U	1 U	1 U	1 U
2-Chlorotoluene	95-49-8	140	1 U	1 U	1 U	1 U
2-Hexanone	591-78-6	280	1 U	1 U	1 U	1 U
4-Chlorotoluene	106-43-4	140	1 U	1 U	1 U	1 U
4-Isopropyltoluene	99-87-6	*	1 U	1 U	1 U	1 U
4-methyl-2-pentanone	108-10-1	560	1 U	1 U	1 U	1 U
Acetone	67-64-1	700	188	10 U	10 U	10 U
Benzene	71-43-2	1	12.2	5.59	3.26	5.8
Bromobenzene	108-86-1	*	1 U	1 U	1 U	1 U
Bromochloromethane	74-97-5	91	1 U	1 U	1 U	1 U
Bromodichloromethane	75-27-4	0.6	0.6 U	0.6 U	0.6 U	0.6 U
Bromoform	75-25-2	4.4	1 U	1 U	1 U	1 U
Bromomethane	74-83-9	9.8	1 U	1 U	1 U	1 U
Carbon Disulfide	75-15-0	700	57.6	7.99	1 U	1 U
Carbon Tetrachloride	56-23-5	3	1 U	1 U	1 U	1 U
Chlorobenzene	108-90-7	100	1 U	1 U	1 U	1 U
Chlorodibromomethane	124-48-1	0.4	0.4 U	0.4 U	0.4 U	0.4 U

TABLE 4

VALIDATED GROUNDWATER ANALYTICAL RESULTS - MARCH AND JUNE 2004
STUDY AREA 36NW

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION	CAS NUMBER	Screening Criteria	MW-36-40D		MW-36-41C	
SAMPLE ID		Florida	OLD-36N-40D-032304	OLD-36N-40D-061404	OLD-36N-41C-032304	OLD-36N-41C-061404
SAMPLE DATE		GCTL[a]	03/23/04	06/14/04	03/23/04	06/14/04
Volatile Organics (µg/L) (Continued)						
Chloroethane	75-00-3	12	1 U	1 U	1 U	1 U
Chloroform	67-66-3	5.7	1 U	1 U	1 U	1 U
Chloromethane	74-87-3	2.7	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	70	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	10061-01-5	*	0.23 U	0.23 U	0.23 U	0.23 U
Dibromomethane	74-95-3	*	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	75-71-8	1400	1 U	1 U	1 U	1 U
Ethylbenzene	100-41-4	30	7.89	4.08	1 U	1 U
Hexachlorobutadiene	87-68-3	0.5	0.55 U	0.55 U	0.55 U	0.55 U
Isopropylbenzene	98-82-8	0.8	1 U	1 U	1 U	1 U
Methyl *tert*-Butyl Ether	1634-04-4	50	1 U	1 U	24.6	25.3
Methylene Chloride	75-09-2	5	5 U	5 U	5 U	5 U
N-Butylbenzene	104-51-8	*	1 U	1 U	1 U	1 U
N-Propylbenzene	103-65-1	*	1 U	1 U	1 U	1 U
Naphthalene	91-20-3	20	5 U	5 U	5 U	5 U
Sec-Butylbenzene	135-98-8	*	1 U	1 U	1 U	1 U
Styrene	100-42-5	100	1 U	1 U	1 U	1 U
Tert-Butylbenzene	98-06-6	*	1 U	1 U	1 U	1 U
Tetrachloroethene	127-18-4	3	1 U	1 U	1 U	1 U
Toluene	108-88-3	40	1 U	1 U	1 U	1 U
Total Xylenes	1330-20-7	20	4.93	1.28	1 U	1 U
Trans-1,2-Dichloroethene	156-60-5	100	1 U	1 U	1 U	1 U
Trans-1,3-Dichloropropene	10061-02-6	*	0.2 U	0.2 U	0.2 U	0.2 U
Trichloroethene	79-01-6	3	1 U	1 U	1 U	1 U
Trichlorofluoromethane	75-69-4	2100	1 U	1 U	1 U	1 U
Vinyl Chloride	75-01-4	1	1 U	1 U	1 U	1 U
Petroleum Hydrocarbons (µg/L)						
Total Petroleum Hydrocarbons	NO CAS#	5000	11600	220 U	210 U	204 U
Dissolved Gases (nM/L)						
Hydrogen	1333-74-0	*	2.4	2.5	2.5	2.7
Miscellaneous Parameters (µg/L)						
Alkalinity	NO CAS#	*	1360000			
Carbon Dioxide	124-38-9	*	100 U			
Methane	74-82-8	*	26 U	26 U	26 U	264
Nitrate-N	14797-55-8	10000	953	37	76	3.1 U
Nitrite-N	14797-65-0	1000	3.5 U	64	3.5 U	3.5 U
Sulfate	14808-79-8	250000	250000	96800	15800	7980
Total Dissolved Solids	C-010	500000	1630000			

TABLE 4

VALIDATED GROUNDWATER ANALYTICAL RESULTS - MARCH AND JUNE 2004
STUDY AREA 36NW

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION	CAS NUMBER	Screening Criteria	MW-36-42C		MW-36-43C	
SAMPLE ID		Florida	OLD-36N-42C-032304	OLD-36N-42C-061404	OLD-36N-43C-032304	OLD-36N-43C-061404
SAMPLE DATE		GCTL[(a)]	03/23/04	06/14/04	03/23/04	06/14/04
Volatile Organics (µg/L)						
1,1,1,2-Tetrachloroethane	630-20-6	1.3	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	71-55-6	200	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2-Trichloroethane	79-00-5	5	1 U	1 U	1 U	1 U
1,1-Dichloroethane	75-34-3	70	1 U	1 U	1 U	1 U
1,1-Dichloroethene	75-35-4	7	1 U	1 U	1 U	1 U
1,1-Dichloropropene	563-58-6	*	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	87-61-6	70	1 U	1 U	1 U	1 U
1,2,3-Trichloropropane	96-18-4	0.2	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	120-82-1	70	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	95-63-6	10	1 U	1 U	1 U	1 U
1,2-Dibromo-3-Chloropropane	96-12-8	0.2	1 U	1 U	1 U	1 U
1,2-Dibromoethane	106-93-4	0.02	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	95-50-1	600	1 U	1 U	1 U	1 U
1,2-Dichloroethane	107-06-2	3	1 U	1 U	1 U	1 U
1,2-Dichloropropane	78-87-5	5	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	108-67-8	10	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	541-73-1	10	1 U	1 U	1 U	1 U
1,3-Dichloropropane	142-28-9	*	0.22 U	0.22 U	0.22 U	0.22 U
1,4-Dichlorobenzene	106-46-7	75	1 U	1 U	1 U	1 U
2,2-Dichloropropane	594-20-7	*	1 U	1 U	1 U	1 U
2-Butanone	78-93-3	4200	1 U	1 U	1 U	1 U
2-Chloroethyl Vinyl Ether	110-75-8	175	1 U	1 U	1 U	1 U
2-Chlorotoluene	95-49-8	140	1 U	1 U	1 U	1 U
2-Hexanone	591-78-6	280	1 U	1 U	1 U	1 U
4-Chlorotoluene	106-43-4	140	1 U	1 U	1 U	1 U
4-Isopropyltoluene	99-87-6	*	1 U	1 U	1 U	1.35
4-methyl-2-pentanone	108-10-1	560	1 U	1 U	1 U	1 U
Acetone	67-64-1	700	10 U	10 U	10 U	10 U
Benzene	71-43-2	1	1 U	1 U	24.8	15.8
Bromobenzene	108-86-1	*	1 U	1 U	1 U	1 U
Bromochloromethane	74-97-5	91	1 U	1 U	1 U	1 U
Bromodichloromethane	75-27-4	0.6	0.6 U	0.6 U	0.6 U	0.6 U
Bromoform	75-25-2	4.4	1 U	1 U	1 U	1 U
Bromomethane	74-83-9	9.8	1 U	1 U	1 U	1 U
Carbon Disulfide	75-15-0	700	1 U	1 U	1 U	1 U
Carbon Tetrachloride	56-23-5	3	1 U	1 U	1 U	1 U
Chlorobenzene	108-90-7	100	1 U	1 U	1 U	1 U
Chlorodibromomethane	124-48-1	0.4	0.4 U	0.4 U	0.4 U	0.4 U

TABLE 4

VALIDATED GROUNDWATER ANALYTICAL RESULTS - MARCH AND JUNE 2004
STUDY AREA 36NW

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION	CAS NUMBER	Screening Criteria	MW-36-42C		MW-36-43C	
SAMPLE ID		Florida	OLD-36N-42C-032304	OLD-36N-42C-061404	OLD-36N-43C-032304	OLD-36N-43C-061404
SAMPLE DATE		GCTL[(a)]	03/23/04	06/14/04	03/23/04	06/14/04
Volatile Organics (µg/L) (Continued)						
Chloroethane	75-00-3	12	1 U	1 U	1 U	1 U
Chloroform	67-66-3	5.7	1 U	1 U	1 U	1 U
Chloromethane	74-87-3	2.7	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	70	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	10061-01-5	*	0.23 U	0.23 U	0.23 U	0.23 U
Dibromomethane	74-95-3	*	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	75-71-8	1400	1 U	1 U	1 U	1 U
Ethylbenzene	100-41-4	30	1 U	1 U	1 U	1 U
Hexachlorobutadiene	87-68-3	0.5	0.55 U	0.55 U	0.55 U	0.55 U
Isopropylbenzene	98-82-8	0.8	1 U	1 U	1 U	1 U
Methyl *tert*-Butyl Ether	1634-04-4	50	1.95	1.37	19.3	12.8
Methylene Chloride	75-09-2	5	5 U	5 U	5 U	5 U
N-Butylbenzene	104-51-8	*	1 U	1 U	1 U	1 U
N-Propylbenzene	103-65-1	*	1 U	1 U	1 U	1 U
Naphthalene	91-20-3	20	5 U	5 U	5 U	5 U
Sec-Butylbenzene	135-98-8	*	1 U	1 U	1 U	1 U
Styrene	100-42-5	100	1 U	1 U	1 U	1 U
Tert-Butylbenzene	98-06-6	*	1 U	1 U	1 U	1 U
Tetrachloroethene	127-18-4	3	1 U	1 U	1 U	1 U
Toluene	108-88-3	40	1 U	1 U	2.92	2.36
Total Xylenes	1330-20-7	20	1 U	1 U	1 U	1 U
Trans-1,2-Dichloroethene	156-60-5	100	1 U	1 U	1 U	1 U
Trans-1,3-Dichloropropene	10061-02-6	*	0.2 U	0.2 U	0.2 U	0.2 U
Trichloroethene	79-01-6	3	1 U	1 U	1 U	1 U
Trichlorofluoromethane	75-69-4	2100	1 U	1 U	1 U	1 U
Vinyl Chloride	75-01-4	1	1 U	1 U	1 U	1 U
Petroleum Hydrocarbons (µg/L)						
Total Petroleum Hydrocarbons	NO CAS#	5000	220 U	220 U	220 U	204 U
Dissolved Gases (nM/L)						
Hydrogen	1333-74-0	*	2.9	2.6	2.2	2.9
Miscellaneous Parameters (µg/L)						
Alkalinity	NO CAS#	*			1000 U	
Carbon Dioxide	124-38-9	*			1300	300000
Methane	74-82-8	*	26 U	26 U	1040	3580
Nitrate-N	14797-55-8	10000	13	3.1 U	5	3.1 U
Nitrite-N	14797-65-0	1000	3.5 U	3.5 U	3.5 U	3.5 U
Sulfate	14808-79-8	250000	2000 U	10100	15800	10200
Total Dissolved Solids	C-010	500000			593000	564000

TABLE 4

VALIDATED GROUNDWATER ANALYTICAL RESULTS - MARCH AND JUNE 2004
STUDY AREA 36NW

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION	CAS NUMBER	Screening Criteria	MW-36-44C	
SAMPLE ID		Florida	OLD-36N-44C-032304	OLD-36N-44C-061404
SAMPLE DATE		GCTL[a]	03/23/04	06/14/04
Volatile Organics (µg/L)				
1,1,1,2-Tetrachloroethane	630-20-6	1.3	1 U	1 U
1,1,1-Trichloroethane	71-55-6	200	1 U	1 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2	0.2 U	0.2 U
1,1,2-Trichloroethane	79-00-5	5	1 U	1 U
1,1-Dichloroethane	75-34-3	70	1 U	1 U
1,1-Dichloroethene	75-35-4	7	1 U	1 U
1,1-Dichloropropene	563-58-6	*	1 U	1 U
1,2,3-Trichlorobenzene	87-61-6	70	1 U	1 U
1,2,3-Trichloropropane	96-18-4	0.2	1 U	1 U
1,2,4-Trichlorobenzene	120-82-1	70	1 U	1 U
1,2,4-Trimethylbenzene	95-63-6	10	1 U	1 U
1,2-Dibromo-3-Chloropropane	96-12-8	0.2	1 U	1 U
1,2-Dibromoethane	106-93-4	0.02	1 U	1 U
1,2-Dichlorobenzene	95-50-1	600	1 U	1 U
1,2-Dichloroethane	107-06-2	3	1 U	1 U
1,2-Dichloropropane	78-87-5	5	1 U	1 U
1,3,5-Trimethylbenzene	108-67-8	10	1 U	1 U
1,3-Dichlorobenzene	541-73-1	10	1 U	1 U
1,3-Dichloropropane	142-28-9	*	0.22 U	0.22 U
1,4-Dichlorobenzene	106-46-7	75	1 U	1 U
2,2-Dichloropropane	594-20-7	*	1 U	1 U
2-Butanone	78-93-3	4200	1 U	1 U
2-Chloroethyl Vinyl Ether	110-75-8	175	1 U	1 U
2-Chlorotoluene	95-49-8	140	1 U	1 U
2-Hexanone	591-78-6	280	1 U	1 U
4-Chlorotoluene	106-43-4	140	1 U	1 U
4-Isopropyltoluene	99-87-6	*	1 U	1 U
4-methyl-2-pentanone	108-10-1	560	1 U	1 U
Acetone	67-64-1	700	10 U	10 U
Benzene	71-43-2	1	1 U	1 U
Bromobenzene	108-86-1	*	1 U	1 U
Bromochloromethane	74-97-5	91	1 U	1 U
Bromodichloromethane	75-27-4	0.6	0.6 U	0.6 U
Bromoform	75-25-2	4.4	1 U	1 U
Bromomethane	74-83-9	9.8	1 U	1 U
Carbon Disulfide	75-15-0	700	1 U	1 U
Carbon Tetrachloride	56-23-5	3	1 U	1 U
Chlorobenzene	108-90-7	100	1 U	1 U
Chlorodibromomethane	124-48-1	0.4	0.4 U	0.4 U

TABLE 4

VALIDATED GROUNDWATER ANALYTICAL RESULTS - MARCH AND JUNE 2004
STUDY AREA 36NW

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

WELL DESIGNATION	CAS NUMBER	Screening Criteria	MW-36-44C	
SAMPLE ID		Florida	OLD-36N-44C-032304	OLD-36N-44C-061404
SAMPLE DATE		GCTL[a]	03/23/04	06/14/04
Volatile Organics (µg/L) (Continued)				
Chloroethane	75-00-3	12	1 U	1 U
Chloroform	67-66-3	5.7	1 U	1 U
Chloromethane	74-87-3	2.7	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	70	1 U	1 U
cis-1,3-Dichloropropene	10061-01-5	*	0.23 U	0.23 U
Dibromomethane	74-95-3	*	1 U	1 U
Dichlorodifluoromethane	75-71-8	1400	1 U	1 U
Ethylbenzene	100-41-4	30	1 U	1 U
Hexachlorobutadiene	87-68-3	0.5	0.55 U	0.55 U
Isopropylbenzene	98-82-8	0.8	1 U	1 U
Methyl *tert*-Butyl Ether	1634-04-4	50	1 U	1 U
Methylene Chloride	75-09-2	5	5 U	5 U
N-Butylbenzene	104-51-8	*	1 U	1 U
N-Propylbenzene	103-65-1	*	1 U	1 U
Naphthalene	91-20-3	20	5 U	5 U
Sec-Butylbenzene	135-98-8	*	1 U	1 U
Styrene	100-42-5	100	1 U	1 U
Tert-Butylbenzene	98-06-6	*	1 U	1 U
Tetrachloroethene	127-18-4	3	1.1	1 U
Toluene	108-88-3	40	1 U	1 U
Total Xylenes	1330-20-7	20	1 U	1 U
Trans-1,2-Dichloroethene	156-60-5	100	1 U	1 U
Trans-1,3-Dichloropropene	10061-02-6	*	0.2 U	0.2 U
Trichloroethene	79-01-6	3	1.9	1.54
Trichlorofluoromethane	75-69-4	2100	1 U	1 U
Vinyl Chloride	75-01-4	1	1 U	1 U
Petroleum Hydrocarbons (µg/L)				
Total Petroleum Hydrocarbons	NO CAS#	5000	230 U	203 U
Dissolved Gases (nM/L)				
Hydrogen	1333-74-0	*	4.1	2.8
Miscellaneous Parameters (µg/L)				
Alkalinity	NO CAS#	*		
Carbon Dioxide	124-38-9	*		
Methane	74-82-8	*	77	411
Nitrate-N	14797-55-8	10000	9	3.1 U
Nitrite-N	14797-65-0	1000	3.5 U	3.5 U
Sulfate	14808-79-8	250000	2560	2670
Total Dissolved Solids	C-010	500000		

TABLE 4

VALIDATED GROUNDWATER ANALYTICAL RESULTS - MARCH AND JUNE 2004
STUDY AREA 36NW

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Notes:

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

* Indicates that the screening value is not available.

Empty cells indicate parameter not analyzed.

"U" qualifier indicates a non-detect.

Values in shaded cells meet or exceed the screening criteria.

FIGURES

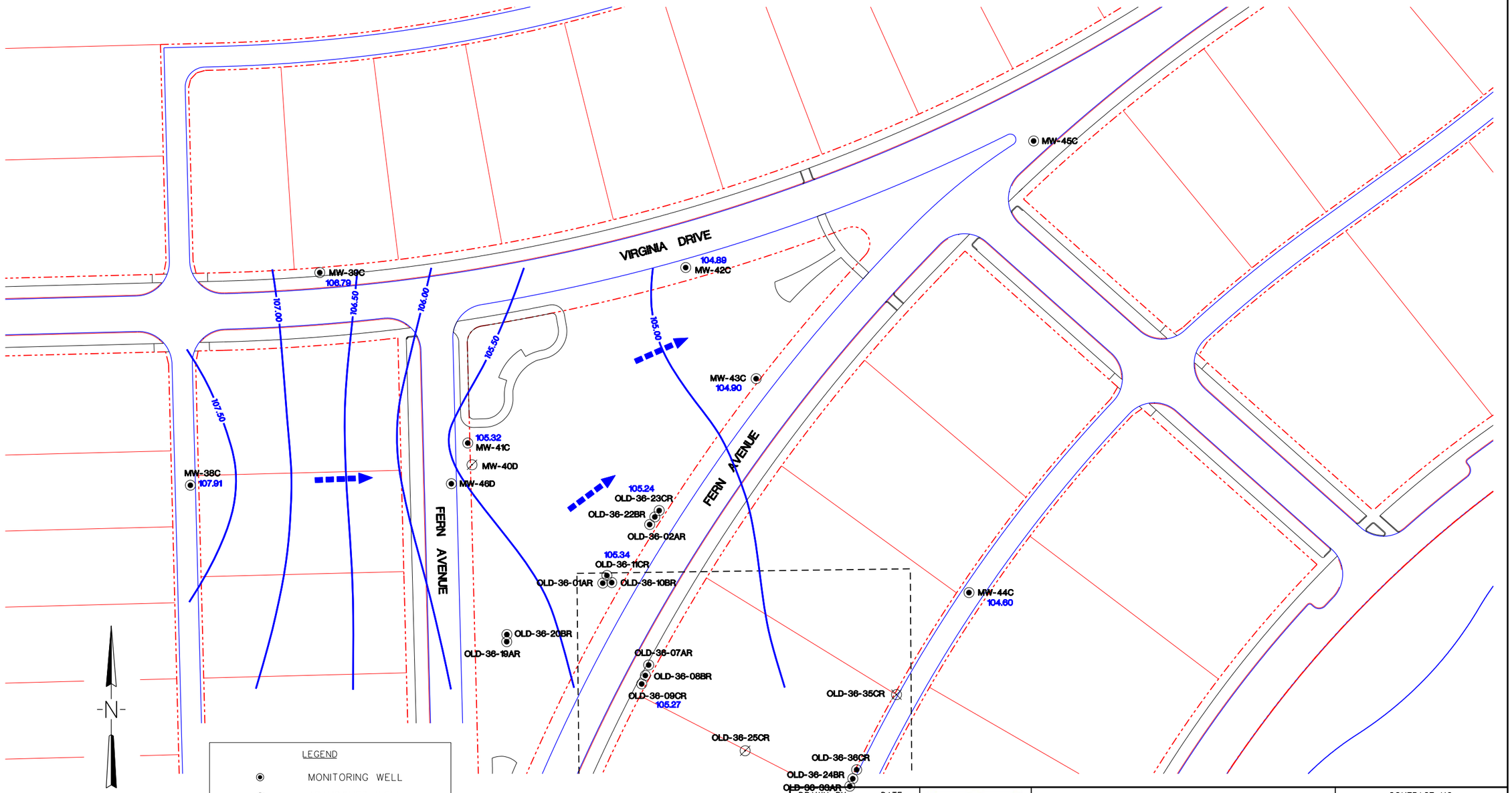
No.

1 Groundwater Elevation Contours, June 11, 2004

2 Groundwater Exceedances Map, March and June 2004

3 Petroleum Contaminants in Groundwater, March and June 2004

CAD FILE NO./DATE: P:\Oak Ridge Drafting\NTC Orlando\sa36-077H.dgn 01-19-05 JFF



DRAWN BY	DATE
JFF	10-05-04
CHECKED BY	DATE
TKG	10-05-04
REVISED BY	DATE
---	--------
SCALE	
AS NOTED	

NAVFAC

GROUNDWATER ELEVATION CONTOURS
JUNE 11, 2004
STUDY AREA 36 NORTHWEST

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

CONTRACT NO.	
N62467-94-D-0888	
OWNER NO.	
N4443	
APPROVED BY	DATE
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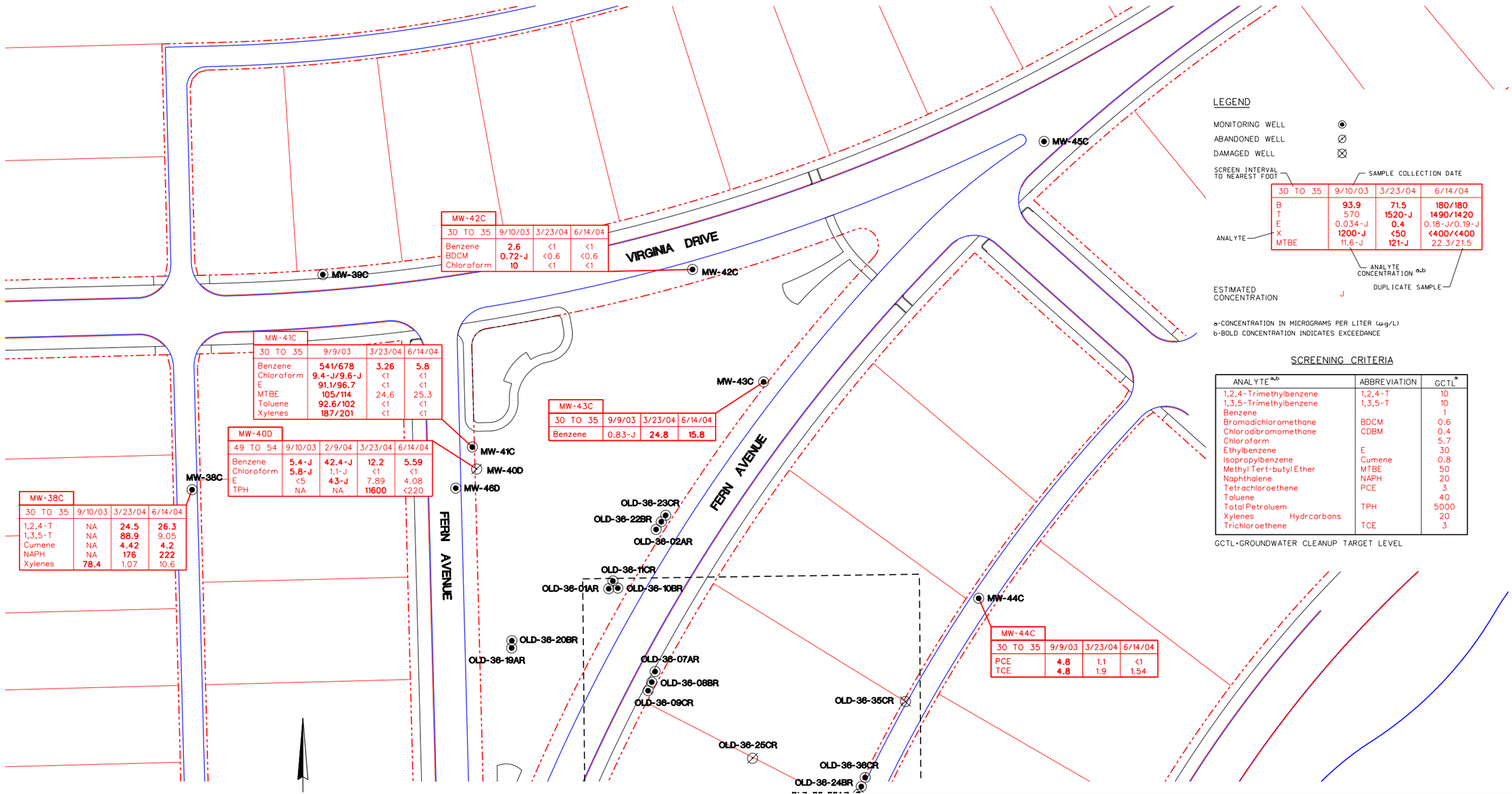
DRAWING NO.	REV.
FIGURE 1	0

CAD FILE NO./DATE: P:\Oak Ridge Drafting\NTC Orlando\sa36-078H.dgn 01-21-05 JFF



MW-42C			
30 TO 35	9/10/03	3/23/04	6/14/04
Benzene	**2.6**	<1	<1
BDCM	**0.72-J**	<0.6	<0.6
Chloroform	**10**	<1	<1

MW-41C			
30 TO 35	9/9/03	3/23/04	6/14/04
Benzene	**541/678**	**3.26**	**5.8**
Chloroform	**9.4-J/9.6-J**	<1	<1
E	**91.1/96.7**	<1	<1
MTBE	**105/114**	24.6	25.3
Toluene	**92.6/102**	<1	<1
Xylenes	**187/201**	<1	<1

MW-40D				
49 TO 54	9/10/03	2/9/04	3/23/04	6/14/04
Benzene	**5.4-J**	**42.4-J**	**12.2**	**5.59**
Chloroform	**5.8-J**	1.1-J	<1	<1
E	<5	**43-J**	7.89	4.08
TPH	NA	NA	**11600**	<220

MW-38C			
30 TO 35	9/10/03	3/23/04	6/14/04
1,2,4-T	NA	**24.5**	**26.3**
1,3,5-T	NA	**88.9**	9.05
Cumene	NA	**4.42**	**4.2**
NAPH	NA	**176**	**222**
Xylenes	**78.4**	1.07	10.6

MW-43C			
30 TO 35	9/9/03	3/23/04	6/14/04
Benzene	0.83-J	**24.8**	**15.8**

MW-44C			
30 TO 35	9/9/03	3/23/04	6/14/04
PCE	**4.8**	1.1	<1
TCE	**4.8**	1.9	1.54

LEGEND

MONITORING WELL ◉
ABANDONED WELL ⊘
DAMAGED WELL ⊠

SCREEN INTERVAL TO NEAREST FOOT — SAMPLE COLLECTION DATE

30 TO 35	9/10/03	3/23/04	6/14/04
B	**93.9**	**71.5**	**180/180**
T	570	**1520-J**	**1490/1420**
E	0.034-J	**0.4**	0.18-J/0.19-J
X	**1200-J**	**<50**	**<400/<400**
MTBE	11.6-J	**121-J**	22.3/21.5

ANALYTE — ANALYTE CONCENTRATION [a,b] — DUPLICATE SAMPLE

ESTIMATED CONCENTRATION J

a-CONCENTRATION IN MICROGRAMS PER LITER (µg/L)
b-BOLD CONCENTRATION INDICATES EXCEEDANCE

SCREENING CRITERIA

ANALYTE [a,b]	ABBREVIATION	GCTL [a]
1,2,4-Trimethylbenzene	1,2,4-T	10
1,3,5-Trimethylbenzene	1,3,5-T	10
Benzene		1
Bromodichloromethane	BDCM	0.6
Chlorodibromomethane	CDBM	0.4
Chloroform		5.7
Ethylbenzene	E	30
Isopropylbenzene	Cumene	0.8
Methyl Tert-butyl Ether	MTBE	50
Nophtholene	NAPH	20
Tetrachloroethene	PCE	3
Toluene		40
Total Petroluem	TPH	5000
Xylenes Hydrcarbons		20
Trichloroethene	TCE	3

GCTL=GROUNDWATER CLEANUP TARGET LEVEL

DRAWN BY JFF	DATE 01-21-05	GROUNDWATER EXCEEDANCES MAP MARCH AND JUNE 2004 STUDY AREA 36 NORTHWEST	CONTRACT NO. N62467-94-D-0888
CHECKED BY TKG	DATE 01-21-05		OWNER NO. N4443
REVISED BY ---	DATE --------	NAVAL TRAINING CENTER ORLANDO, FLORIDA	APPROVED BY --- DATE --------
SCALE AS NOTED		NAVFAC	DRAWING NO. FIGURE 2 / REV. 0

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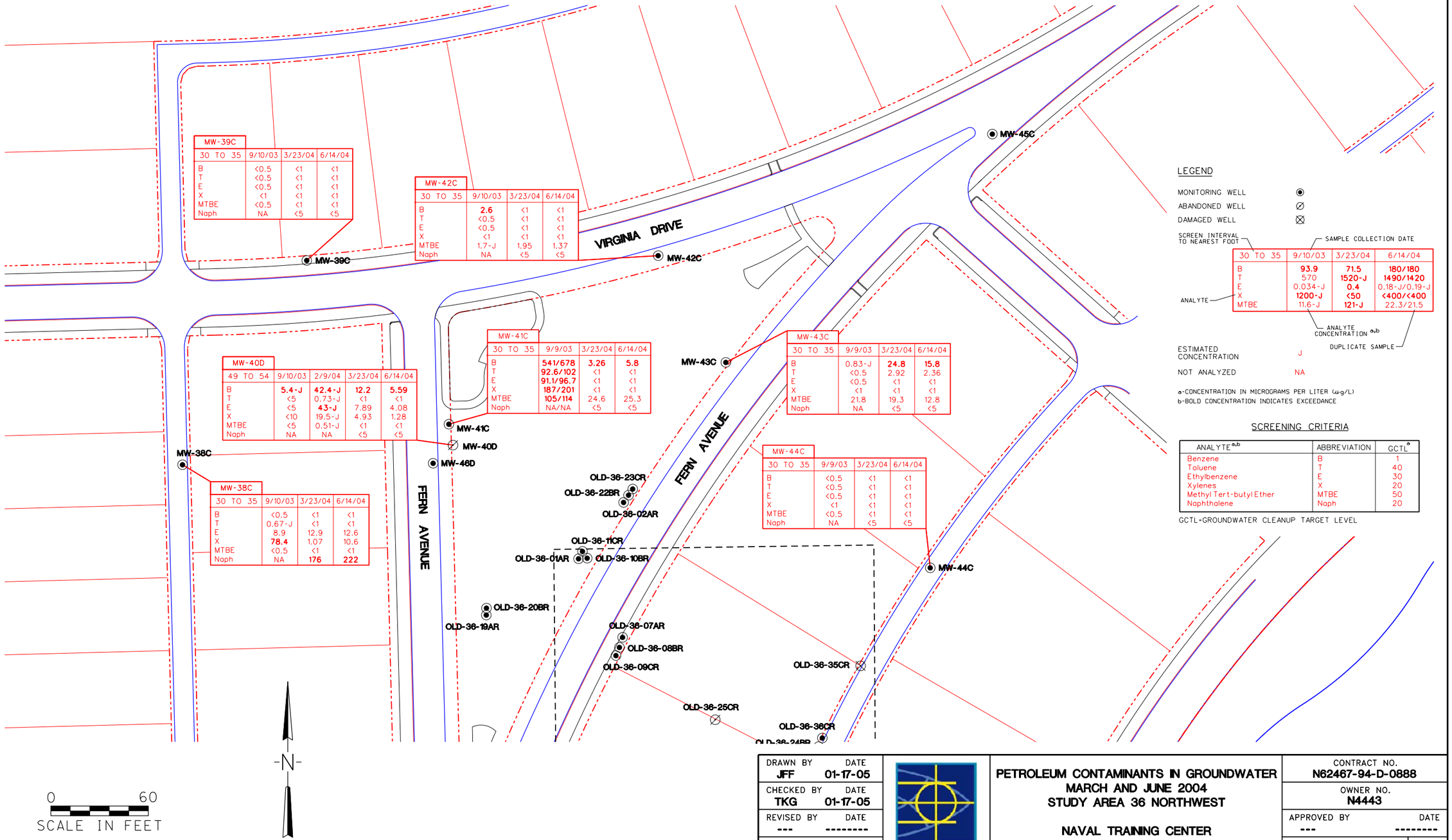

MW-39C			
30 TO 35	9/10/03	3/23/04	6/14/04
B	<0.5	<1	<1
T	<0.5	<1	<1
E	<0.5	<1	<1
X	<1	<1	<1
MTBE	<0.5	<1	<1
Naph	NA	<5	<5

MW-42C			
30 TO 35	9/10/03	3/23/04	6/14/04
B	**2.6**	<1	<1
T	<0.5	<1	<1
E	<0.5	<1	<1
X	<1	<1	<1
MTBE	1.7-J	1.95	1.37
Naph	NA	<5	<5

MW-41C			
30 TO 35	9/9/03	3/23/04	6/14/04
B	**541/678**	**3.26**	**5.8**
T	**92.6/102**	<1	<1
E	**91.1/96.7**	<1	<1
X	**187/201**	<1	<1
MTBE	**105/114**	24.6	25.3
Naph	NA/NA	<5	<5

MW-40D				
49 TO 54	9/10/03	2/9/04	3/23/04	6/14/04
B	**5.4-J**	**42.4-J**	**12.2**	**5.59**
T	<5	0.73-J	<1	<1
E	<5	**43-J**	7.89	4.08
X	<10	19.5-J	4.93	1.28
MTBE	<5	0.51-J	<1	<1
Naph	NA	NA	<5	<5

MW-38C			
30 TO 35	9/10/03	3/23/04	6/14/04
B	<0.5	<1	<1
T	0.67-J	<1	<1
E	8.9	12.9	12.6
X	**78.4**	1.07	10.6
MTBE	<0.5	<1	<1
Naph	NA	**176**	**222**

MW-43C			
30 TO 35	9/9/03	3/23/04	6/14/04
B	0.83-J	**24.8**	**15.8**
T	<0.5	2.92	2.36
E	<0.5	<1	<1
X	<1	<1	<1
MTBE	21.8	19.3	12.8
Naph	NA	<5	<5

MW-44C			
30 TO 35	9/9/03	3/23/04	6/14/04
B	<0.5	<1	<1
T	<0.5	<1	<1
E	<0.5	<1	<1
X	<1	<1	<1
MTBE	<0.5	<1	<1
Naph	NA	<5	<5

LEGEND

MONITORING WELL ◉

ABANDONED WELL ∅

DAMAGED WELL ⊠

SCREEN INTERVAL TO NEAREST FOOT — SAMPLE COLLECTION DATE

30 TO 35	9/10/03	3/23/04	6/14/04
B	**93.9**	**71.5**	**180/180**
T	570	**1520-J**	**1490/1420**
E	0.034-J	**0.4**	0.18-J/0.19-J
X	**1200-J**	**<50**	**<400/<400**
MTBE	11.6-J	**121-J**	22.3/21.5

ANALYTE — ANALYTE CONCENTRATION [a,b] — DUPLICATE SAMPLE

ESTIMATED CONCENTRATION J

NOT ANALYZED NA

a-CONCENTRATION IN MICROGRAMS PER LITER (µg/L)
b-BOLD CONCENTRATION INDICATES EXCEEDANCE

SCREENING CRITERIA

ANALYTE[a,b]	ABBREVIATION	GCTL[a]
Benzene	B	1
Toluene	T	40
Ethylbenzene	E	30
Xylenes	X	20
Methyl Tert-butyl Ether	MTBE	50
Naphthalene	Naph	20

GCTL-GROUNDWATER CLEANUP TARGET LEVEL

DRAWN BY JFF	DATE 01-17-05	PETROLEUM CONTAMINANTS IN GROUNDWATER MARCH AND JUNE 2004 STUDY AREA 36 NORTHWEST NAVAL TRAINING CENTER ORLANDO, FLORIDA	CONTRACT NO. N62467-94-D-0888
CHECKED BY TKG	DATE 01-17-05		OWNER NO. N4443
REVISED BY ---	DATE --------		APPROVED BY --- / DATE --------
SCALE AS NOTED			DRAWING NO. FIGURE 3 / REV. 0

APPENDIX A

GROUNDWATER SAMPLE LOG SHEETS

GROUNDWATER SAMPLING LOG

TERRAINE
Environmental Consulting

Project Information

Project No: 07-71009/7	Project Name: SA36NW	
Technician 1: Brandon Pruitt	Technician 2: Larry Wolski	Weather: Sunny
Sampling ID: 07-71009/7:MW-38C:3/23/04		
Notes:		

Well Information

Well ID: **MW-38C**	Sampling Date: **3/23/2004**	
Well Diam (in): 0.0	Total Well Depth (ft): 0.00	Well Screen Interval (ft):
TOC Elevation (ft msl): 0.00	Northing: 0	Easting: 0
Static Depth to Water (ft): 7.53	Well Capacity (gal): 0.00	

Purge Setup

Purge Method: Peristaltic	Tubing Material: PPE		Pump Set at (ft): 33.00
pH Meter: Accumet	Cond. Meter: YSI-33	DO Meter: YSI-51B	Turb. Meter: Hach 2100P
Purge Start: 11:30	Purge End: 11:44	Total Volume Purged (gal): 0.80	

Purging Data

Time	Water Level (ft)	Vol Purged (gal)	Pump Rate (gal/min)	DO (mg/L)	Temp (°C)	SEC (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
11:36	8.21	0.40	0.00	1.60	24.70	246.9	5.79	0.0	54.00	clear	slight HC
11:39	8.18	0.60	0.00	1.50	24.70	247.3	5.80	0.0	69.00		
11:41	8.13	0.70	0.05	1.50	24.80	247.8	5.81	0.0	88.00		
11:44	8.12	0.80	0.05	1.40	24.80	248.1	5.81	0.0	90.00		

Sampling Data

Sample Information

Sample Date:	3/23/2004
Sample Start Time:	11:44
Sample End Time:	12:15
Field Filtered:	☐
Duplicate:	☐

Final Purge Readings

DO (mg/L):	1.40
Temp (*C):	24.80
SEC (uS/cm):	248.20
pH:	5.81
ORP (mV):	0.00
Turb (NTU):	87.00

Field Test Kit Readings (mg/L)

DO:	1.80	Sulfate:	0.00
CO2:	276.00	Sulfide:	0.00
Alkalinity:	95.00		
Ferrous Iron:	1.00		
H2S:	5.00		
Manganese:	0.00		

Lab Analyses/Methods:

"VOCs, TRPH, Nitrate/Nitrite, SO4, Methane"

Technician Initials

GROUNDWATER SAMPLING LOG

TERRAINE
Environmental Consulting

Project Information

Project No: 07-71009/7	Project Name: SA36NW	
Technician 1: Brandon Pruitt	Technician 2: Larry Wolski	Weather: Sunny
Sampling ID: 07-71009/7:MW-39C:3/23/04		
Notes:		

Well Information

Well ID: **MW-39C**	Sampling Date: **3/23/2004**	
Well Diam (in): 0.0	Total Well Depth (ft): 0.00	Well Screen Interval (ft):
TOC Elevation (ft msl): 0.00	Northing: 0	Easting: 0
Static Depth to Water (ft): 7.57	Well Capacity (gal): 0.00	

Purge Setup

Purge Method: Peristaltic	Tubing Material: PPE		Pump Set at (ft): 33.00
pH Meter: Accumet	Cond. Meter: YSI-33	DO Meter: YSI-51B	Turb. Meter: Hach 2100P
Purge Start: 10:00	Purge End: 10:41	Total Volume Purged (gal): 0.60	

Purging Data

Time	Water Level (ft)	Vol Purged (gal)	Pump Rate (gal/min)	DO (mg/L)	Temp (°C)	SEC (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
10:36	9.53	0.40	0.00	3.60	23.60	331.9	6.78	0.0	44.00	clear	none
10:38	9.63	0.50	0.00	3.50	23.60	334.0	6.78	0.0	42.00		
10:41	9.69	0.60	0.05	3.50	23.60	335.4	6.78	0.0	42.00		

Sampling Data

Sample Information

Sample Date:	3/23/2004
Sample Start Time:	10:45
Sample End Time:	11:20
Field Filtered:	☐
Duplicate:	☐

Final Purge Readings

DO (mg/L):	3.50
Temp (*C):	23.70
SEC (uS/cm):	335.50
pH:	6.78
ORP (mV):	0.00
Turb (NTU):	40.00

Field Test Kit Readings (mg/L)

DO:	3.40	Sulfate:	0.00
CO2:	156.00	Sulfide:	0.00
Alkalinity:	784.00		
Ferrous Iron:	0.00		
H2S:	0.10		
Manganese:	0.00		

Lab Analyses/Methods:

"VOCs, TRPH, Nitrate/Nitrite, SO4, Methane"

Technician Initials

GROUNDWATER SAMPLING LOG

TERRAINE
Environmental Consulting

Project Information

Project No: 07-71009/7	Project Name: SA36NW	
Technician 1: Karen Baer	Technician 2: Norm Barnes	Weather: Sunny
Sampling ID: 07-71009/7:MW-40D:3/23/04		
Notes:		

Well Information

Well ID: **MW-40D**	Sampling Date: **3/23/2004**	
Well Diam (in): 0.0	Total Well Depth (ft): 0.00	Well Screen Interval (ft):
TOC Elevation (ft msl): 0.00	Northing: 0	Easting: 0
Static Depth to Water (ft): 9.30	Well Capacity (gal): 0.00	

Purge Setup

Purge Method: Peristaltic	Tubing Material: PPE		Pump Set at (ft): 50.00
pH Meter: Horiba U-22	Cond. Meter: Horiba U-22	DO Meter: Horiba U-22	Turb. Meter: Hach 2100P
Purge Start: 09:20	Purge End: 09:42	Total Volume Purged (gal): 0.70	

Purging Data

Time	Water Level (ft)	Vol Purged (gal)	Pump Rate (gal/min)	DO (mg/L)	Temp (°C)	SEC (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
09:33	12.42	0.40	0.00	0.00	23.46	142.0	10.84	-240.0	1,000.00	brown	none
09:39	12.92	0.60	0.04	0.00	23.43	143.0	10.90	-289.0	1,000.00		
09:41	13.20	0.70	0.05	0.00	23.54	143.0	10.91	-302.0	1,000.00		

Sampling Data

Sample Information

Sample Date:	3/23/2004
Sample Start Time:	09:42
Sample End Time:	10:26
Field Filtered:	☐
Duplicate:	☐

Final Purge Readings

DO (mg/L):	0.00
Temp (*C):	23.59
SEC (uS/cm):	143.00
pH:	10.90
ORP (mV):	-306.00
Turb (NTU):	1,000.00

Field Test Kit Readings (mg/L)

DO:	0.00	Sulfate:	0.00
CO2:	0.00	Sulfide:	0.00
Alkalinity:	0.00		
Ferrous Iron:	0.40		
H2S:	0.70		
Manganese:	0.00		

Lab Analyses/Methods:

"VOCs, TRPH, Sulfate, Methane, Nitrate/Nitrite"

Technician Initials

GROUNDWATER SAMPLING LOG

TERRAINE
Environmental Consulting

Project Information

Project No: 07-71009/7	Project Name: SA36NW	
Technician 1: Karen Baer	Technician 2: Norm Barnes	Weather: Sunny
Sampling ID: 07-71009/7:MW-41C:3/23/04		
Notes:		

Well Information

Well ID: **MW-41C**	Sampling Date: **3/23/2004**	
Well Diam (in): 0.0	Total Well Depth (ft): 0.00	Well Screen Interval (ft):
TOC Elevation (ft msl): 0.00	Northing: 0	Easting: 0
Static Depth to Water (ft): 9.15	Well Capacity (gal): 0.00	

Purge Setup

Purge Method: Peristaltic	Tubing Material: PPE		Pump Set at (ft): 33.00
pH Meter: Horiba U-22	Cond. Meter: Horiba U-22	DO Meter: Horiba U-22	Turb. Meter: Hach 2100P
Purge Start: 10:30	Purge End: 11:00	Total Volume Purged (gal): 0.70	

Purging Data

Time	Water Level (ft)	Vol Purged (gal)	Pump Rate (gal/min)	DO (mg/L)	Temp (°C)	SEC (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
10:52	9.58	0.40	0.00	0.00	24.16	930.0	9.43	63.0	26.80	clear	none
10:57	9.58	0.60	0.05	0.00	24.26	904.0	9.42	28.0	26.20		
11:00	9.58	0.70	0.05	0.00	24.24	894.0	9.35	-16.0	25.20		

Sampling Data

Sample Information		Final Purge Readings		Field Test Kit Readings (mg/L)			
Sample Date:	3/23/2004	DO (mg/L):	0.00	DO:	0.00	Sulfate:	0.00
Sample Start Time:	11:01	Temp (*C):	24.22	CO2:	82.00	Sulfide:	0.00
Sample End Time:	11:51	SEC (uS/cm):	891.00	Alkalinity:	350.00		
Field Filtered:	☐	pH:	9.33	Ferrous Iron:	0.40		
Duplicate:	☐	ORP (mV):	-32.00	H2S:	0.00		
		Turb (NTU):	25.80	Manganese:	0.00		

Lab Analyses/Methods:	Technician Initials
"VOCs, TRPH, Sulfate, Methane, Nitrate/Nitrite"	

GROUNDWATER SAMPLING LOG

TERRAINE
Environmental Consulting

Project Information

Project No: 07-71009/7	Project Name: SA36NW	
Technician 1: Brandon Pruitt	Technician 2: Larry Wolski	Weather: Sunny
Sampling ID: 07-71009/7:MW-42C:3/23/04		
Notes:		

Well Information

Well ID: **MW-42C**	Sampling Date: **3/23/2004**	
Well Diam (in): 0.0	Total Well Depth (ft): 0.00	Well Screen Interval (ft):
TOC Elevation (ft msl): 0.00	Northing: 0	Easting: 0
Static Depth to Water (ft): 7.45	Well Capacity (gal): 0.00	

Purge Setup

Purge Method: Peristaltic	Tubing Material: PPE		Pump Set at (ft): 33.00
pH Meter: Accumet	Cond. Meter: YSI-33	DO Meter: YSI-51B	Turb. Meter: Hach 2100P
Purge Start: 09:25	Purge End: 09:33	Total Volume Purged (gal): 0.60	

Purging Data

Time	Water Level (ft)	Vol Purged (gal)	Pump Rate (gal/min)	DO (mg/L)	Temp (°C)	SEC (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
09:29	9.41	0.40	0.00	1.80	22.90	99.9	4.93	0.0	154.00	brown	none
09:30	9.52	0.50	0.00	1.70	22.90	100.0	5.06	0.0	155.00		
09:33	9.58	0.60	0.05	1.70	23.00	99.6	4.97	0.0	158.00		

Sampling Data

Sample Information

Sample Date:	3/23/2004
Sample Start Time:	09:37
Sample End Time:	10:13
Field Filtered:	☐
Duplicate:	☐

Final Purge Readings

DO (mg/L):	1.60
Temp (*C):	23.00
SEC (uS/cm):	99.60
pH:	4.96
ORP (mV):	0.00
Turb (NTU):	158.00

Field Test Kit Readings (mg/L)

DO:	1.60	Sulfate:	0.00
CO2:	96.00	Sulfide:	0.00
Alkalinity:	15.00		
Ferrous Iron:	1.00		
H2S:	0.00		
Manganese:	0.00		

Lab Analyses/Methods:

"VOCs, TRPH, Nitrate/Nitrite, SO4, Methane"

Technician Initials

GROUNDWATER SAMPLING LOG

TERRAINE
Environmental Consulting

Project Information

Project No: 07-71009/7	Project Name: SA36NW	
Technician 1: Karen Baer	Technician 2: Norm Barnes	Weather: Sunny
Sampling ID: 07-71009/7:MW-43C:3/23/04		
Notes:		

Well Information

Well ID: **MW-43C**	Sampling Date: **3/23/2004**	
Well Diam (in): 0.0	Total Well Depth (ft): 0.00	Well Screen Interval (ft):
TOC Elevation (ft msl): 0.00	Northing: 0	Easting: 0
Static Depth to Water (ft): 8.21	Well Capacity (gal): 0.00	

Purge Setup

Purge Method: Peristaltic	Tubing Material: PPE		Pump Set at (ft): 33.00
pH Meter: Horiba U-22	Cond. Meter: Horiba U-22	DO Meter: Horiba U-22	Turb. Meter: Hach 2100P
Purge Start: 08:00	Purge End: 08:24	Total Volume Purged (gal): 1.00	

Purging Data

Time	Water Level (ft)	Vol Purged (gal)	Pump Rate (gal/min)	DO (mg/L)	Temp (°C)	SEC (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
08:17	9.00	0.40	0.00	0.00	23.57	514.0	5.94	-115.0	1,000.00	brown	sulfuric
08:20	9.00	0.50	0.00	0.00	23.77	476.0	5.81	-124.0	1,000.00		
08:22	9.04	0.60	0.05	0.00	23.89	440.0	5.74	-127.0	1,000.00		
08:24	9.00	1.00	0.20	0.00	23.92	427.0	5.67	-126.0	1,000.00		

Sampling Data

Sample Information		Final Purge Readings		Field Test Kit Readings (mg/L)			
Sample Date:	3/23/2004	DO (mg/L):	0.00	DO:	0.00	Sulfate:	0.00
Sample Start Time:	08:26	Temp (*C):	23.80	CO2:	0.00	Sulfide:	0.00
Sample End Time:	09:13	SEC (uS/cm):	433.00	Alkalinity:	20.00		
Field Filtered:	☐	pH:	5.66	Ferrous Iron:	1.00		
Duplicate:	☐	ORP (mV):	-126.00	H2S:	2.00		
		Turb (NTU):	1,000.00	Manganese:	0.00		

Lab Analyses/Methods:	Technician Initials
"VOCs, TRPH, Sulfate, Methane, Nitrate/Nitrite"	

GROUNDWATER SAMPLING LOG

TERRAINE
Environmental Consulting

Project Information

Project No: 07-71009/7	Project Name: SA36NW	
Technician 1: Brandon Pruitt	Technician 2: Larry Wolski	Weather: "Cool, Sunny"
Sampling ID: 07-71009/7:MW-44C:3/23/04		
Notes:		

Well Information

Well ID: **MW-44C**	Sampling Date: **3/23/2004**	
Well Diam (in): 0.0	Total Well Depth (ft): 0.00	Well Screen Interval (ft):
TOC Elevation (ft msl): 0.00	Northing: 0	Easting: 0
Static Depth to Water (ft): 10.03	Well Capacity (gal): 0.00	

Purge Setup

Purge Method: Peristaltic	Tubing Material: PPE		Pump Set at (ft): 34.00
pH Meter: Accumet	Cond. Meter: YSI-33	DO Meter: YSI-51B	Turb. Meter: Hach 2100P
Purge Start: 08:10	Purge End: 08:19	Total Volume Purged (gal): 0.90	

Purging Data

Time	Water Level (ft)	Vol Purged (gal)	Pump Rate (gal/min)	DO (mg/L)	Temp (°C)	SEC (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
08:12	10.30	0.40	0.00	3.20	23.30	57.1	4.99	0.0	206.00	turbid	sulfuric
08:14	10.29	0.60	0.00	1.80	23.70	55.9	5.00	0.0	232.00		
08:16	10.29	0.75	0.07	1.70	23.80	55.2	5.03	0.0	260.00		
08:19	10.29	0.90	0.07	1.60	23.90	54.0	4.91	0.0	286.00		

Sampling Data

Sample Information

Sample Date:	3/23/2004
Sample Start Time:	08:25
Sample End Time:	09:05
Field Filtered:	☐
Duplicate:	☐

Final Purge Readings

DO (mg/L):	1.50
Temp (*C):	23.90
SEC (uS/cm):	54.10
pH:	4.89
ORP (mV):	0.00
Turb (NTU):	285.00

Field Test Kit Readings (mg/L)

DO:	1.40	Sulfate:	0.00
CO2:	83.00	Sulfide:	0.00
Alkalinity:	15.00		
Ferrous Iron:	1.40		
H2S:	5.00		
Manganese:	0.00		

Lab Analyses/Methods:

"VOCs, TRPH, Nitrate/Nitrite, SO4, Methane"

Technician Initials

GROUNDWATER SAMPLING LOG

TERRAINE
Environmental Consulting

Project Information

Project No: 07-71009/7	Project Name: NTC/SA36NW	
Technician 1:	Technician 2: Larry Wolski	Weather: "Cloudy, Hot, Humid, Muggy, Sunny"
Sampling ID: 07-71009/7:MW-38C:6/14/04		
Notes:		

Well Information

Well ID: **MW-38C**	Sampling Date: **6/14/2004**	
Well Diam (in): 2.0	Total Well Depth (ft): 35.50	Well Screen Interval (ft):
TOC Elevation (ft msl): 0.00	Northing: 0	Easting: 0
Static Depth to Water (ft): 7.56	Well Capacity (gal): 0.00	

Purge Setup

Purge Method: Peristaltic	Tubing Material: PPE		Pump Set at (ft): 33.00
pH Meter: YSI 556 MPS	Cond. Meter: YSI 556MPS	DO Meter: YSI 556 MPS	Turb. Meter: Hach 2100P
Purge Start: 10:36	Purge End: 10:44	Total Volume Purged (gal): 0.60	

Purging Data

Time	Water Level (ft)	Vol Purged (gal)	Pump Rate (gal/min)	DO (mg/L)	Temp (°C)	SEC (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
10:40	8.21	0.40	-0.03	0.43	26.07	0.2	5.27	-121.9	84.10	brown	slight HC
10:42	8.22	0.50	-0.00	0.35	25.98	0.2	5.51	-127.2	84.50		
10:44	8.21	0.60	-0.05	0.28	25.98	0.2	5.50	-136.6	78.10		

Sampling Data

Sample Information

Sample Date:	6/14/2004
Sample Start Time:	10:50
Sample End Time:	11:37
Field Filtered:	☐
Duplicate:	☐

Final Purge Readings

DO (mg/L):	0.27
Temp (*C):	25.97
SEC (uS/cm):	0.26
pH:	5.52
ORP (mV):	-141.30
Turb (NTU):	76.70

Field Test Kit Readings (mg/L)

DO:	2.20	Sulfate:	0.00
CO2:	192.00	Sulfide:	0.04
Alkalinity:	80.00		
Ferrous Iron:	1.10		
H2S:	5.00		
Manganese:	0.00		

Lab Analyses/Methods:

"VOCs, TRPH, Sulfate, Methane, Nitrate/Nitrite"

Technician Initials

GROUNDWATER SAMPLING LOG

TERRAINE
Environmental Consulting

Project Information

Project No: 07-71009/7	Project Name: NTC/SA36NW	
Technician 1:	Technician 2: Larry Wolski	Weather: "Hot, Humid, Muggy, Sunny"
Sampling ID: 07-71009/7:MW-39C:6/14/04		
Notes:		

Well Information

Well ID: **MW-39C**	Sampling Date: **6/14/2004**	
Well Diam (in): 2.0	Total Well Depth (ft): 35.50	Well Screen Interval (ft):
TOC Elevation (ft msl): 0.00	Northing: 0	Easting: 0
Static Depth to Water (ft): 7.10	Well Capacity (gal): 0.00	

Purge Setup

Purge Method: Peristaltic	Tubing Material: PPE		Pump Set at (ft): 33.00
pH Meter: YSI 556 MPS	Cond. Meter: YSI 556MPS	DO Meter: YSI 556 MPS	Turb. Meter: Hach 2100P
Purge Start: 09:29	Purge End: 09:45	Total Volume Purged (gal): 0.60	

Purging Data

Time	Water Level (ft)	Vol Purged (gal)	Pump Rate (gal/min)	DO (mg/L)	Temp (°C)	SEC (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
09:40	9.18	0.40	-0.00	1.12	25.90	0.0	6.09	87.6	20.50	clear	none
09:42	9.26	0.50	0.00	1.06	25.81	0.0	6.09	77.3	9.97		
09:45	9.31	0.60	-0.03	1.00	25.79	0.0	6.08	66.4	8.85		

Sampling Data

Sample Information

Sample Date:	6/14/2004
Sample Start Time:	09:50
Sample End Time:	10:21
Field Filtered:	☐
Duplicate:	☐

Final Purge Readings

DO (mg/L):	0.99
Temp (*C):	25.78
SEC (uS/cm):	0.09
pH:	6.08
ORP (mV):	63.30
Turb (NTU):	8.36

Field Test Kit Readings (mg/L)

DO:	0.02	Sulfate:	0.00
CO2:	51.00	Sulfide:	0.02
Alkalinity:	40.00		
Ferrous Iron:	0.20		
H2S:	0.50		
Manganese:	0.00		

Lab Analyses/Methods:

"VOCs, TRPH, Sulfate, Methane, Nitrate/Nitrite"

Technician Initials

GROUNDWATER SAMPLING LOG

TERRAINE
Environmental Consulting

Project Information

Project No: 07-71009/7	Project Name: NTC/SA36NW	
Technician 1: Karen Baer	Technician 2:	Weather: "Humid, Sunny"
Sampling ID: 07-71009/7:MW-40D:6/14/04		
Notes:		

Well Information

Well ID: **MW-40D**	Sampling Date: **6/14/2004**	
Well Diam (in): 2.0	Total Well Depth (ft): 55.00	Well Screen Interval (ft):
TOC Elevation (ft msl): 0.00	Northing: 0	Easting: 0
Static Depth to Water (ft): 8.90	Well Capacity (gal): 0.00	

Purge Setup

Purge Method: Peristaltic	Tubing Material: PPE		Pump Set at (ft): 53.00
pH Meter: Horiba U-22	Cond. Meter: Horiba U-22	DO Meter: Horiba U-22	Turb. Meter: Hach 2100P
Purge Start: 10:32	Purge End: 10:47	Total Volume Purged (gal): 0.80	

Purging Data

Time	Water Level (ft)	Vol Purged (gal)	Pump Rate (gal/min)	DO (mg/L)	Temp (°C)	SEC (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
10:41	12.60	0.50	-0.00	0.18	25.77	714.0	8.88	-119.0	702.00	brown	none
10:43	12.80	0.70	0.00	0.17	25.84	717.0	8.98	-137.0	241.00		
10:47	12.80	0.80	0.00	0.18	25.98	722.0	9.06	-157.0	238.00		

Sampling Data

Sample Information

Sample Date:	6/14/2004
Sample Start Time:	10:47
Sample End Time:	11:31
Field Filtered:	☐
Duplicate:	☐

Final Purge Readings

DO (mg/L):	0.18
Temp (*C):	26.05
SEC (uS/cm):	725.00
pH:	9.08
ORP (mV):	-165.00
Turb (NTU):	239.00

Field Test Kit Readings (mg/L)

DO:	0.00	Sulfate:	0.00
CO2:	54.00	Sulfide:	0.00
Alkalinity:	160.00		
Ferrous Iron:	0.00		
H2S:	0.50		
Manganese:	0.00		

Lab Analyses/Methods:

"Hydrogen, Methane, Nitrate/Nitrite, Sulfate, TRPH, VOCs"

Technician Initials

GROUNDWATER SAMPLING LOG

TERRAINE
Environmental Consulting

Project Information

Project No: 07-71009/7	Project Name: NTC/SA36NW	
Technician 1: Karen Baer	Technician 2:	Weather: "Humid, Sunny"
Sampling ID: 07-71009/7:MW-41C:6/14/04		
Notes:		

Well Information

Well ID: **MW-41C**	Sampling Date: **6/14/2004**	
Well Diam (in): 2.0	Total Well Depth (ft): 35.50	Well Screen Interval (ft):
TOC Elevation (ft msl): 0.00	Northing: 0	Easting: 0
Static Depth to Water (ft): 9.30	Well Capacity (gal): 0.00	

Purge Setup

Purge Method: Peristaltic	Tubing Material: PPE		Pump Set at (ft): 32.00
pH Meter: Horiba U-22	Cond. Meter: Horiba U-22	DO Meter: Horiba U-22	Turb. Meter: Hach 2100P
Purge Start: 11:40	Purge End: 11:57	Total Volume Purged (gal): 0.70	

Purging Data

Time	Water Level (ft)	Vol Purged (gal)	Pump Rate (gal/min)	DO (mg/L)	Temp (°C)	SEC (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
11:52	9.70	0.50	-0.00	7.41	33.04	19.0	7.55	100.0	18.20	clear	none
11:55	9.60	0.60	-0.00	7.30	33.08	19.0	7.53	100.0	15.20	yellow	
11:57	9.60	0.70	-0.18	7.22	33.10	19.0	7.51	99.0	15.20		

Sampling Data

Sample Information		Final Purge Readings		Field Test Kit Readings (mg/L)			
Sample Date:	6/14/2004	DO (mg/L):	7.19	DO:	0.00	Sulfate:	0.00
Sample Start Time:	11:59	Temp (*C):	33.07	CO2:	84.00	Sulfide:	0.07
Sample End Time:	12:39	SEC (uS/cm):	19.00	Alkalinity:	0.00		
Field Filtered:	☐	pH:	7.49	Ferrous Iron:	2.80		
Duplicate:	☐	ORP (mV):	100.00	H2S:	0.10		
		Turb (NTU):	15.00	Manganese:	0.00		

Lab Analyses/Methods:	Technician Initials
"Hydrogen, Methane, Nitrate/Nitrite, Sulfate, TRPH"	

GROUNDWATER SAMPLING LOG

TERRAINE Environmental Consulting

Project Information

Project No: 07-71009/7	Project Name: NTC/SA36NW	
Technician 1: Karen Baer	Technician 2:	Weather: Sunny
Sampling ID: 07-71009/7:MW-42C:6/14/04		
Notes:		

Well Information

Well ID: **MW-42C**	Sampling Date: **6/14/2004**	
Well Diam (in): 2.0	Total Well Depth (ft): 35.50	Well Screen Interval (ft):
TOC Elevation (ft msl): 0.00	Northing: 0	Easting: 0
Static Depth to Water (ft): 8.02	Well Capacity (gal): 0.00	

Purge Setup

Purge Method: Peristaltic	Tubing Material: PPE		Pump Set at (ft): 32.00
pH Meter: Horiba U-22	Cond. Meter: Horiba U-22	DO Meter: Horiba U-22	Turb. Meter: Hach 2100P
Purge Start: 08:14	Purge End: 08:27	Total Volume Purged (gal): 0.60	

Purging Data

Time	Water Level (ft)	Vol Purged (gal)	Pump Rate (gal/min)	DO (mg/L)	Temp (°C)	SEC (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
08:23	9.60	0.40	-0.03	1.72	25.98	110.0	4.54	38.0	130.00	turbid	none
08:25	9.60	0.50	-0.00	1.78	25.94	110.0	4.57	28.0	125.00		
08:27	9.60	0.60	-0.00	1.56	25.96	110.0	4.57	20.0	131.00		

Sampling Data

Sample Information

Sample Date:	6/14/2004
Sample Start Time:	08:29
Sample End Time:	09:06
Field Filtered:	☐
Duplicate:	☐

Final Purge Readings

DO (mg/L):	1.42
Temp (*C):	25.97
SEC (uS/cm):	110.00
pH:	4.56
ORP (mV):	16.00
Turb (NTU):	131.00

Field Test Kit Readings (mg/L)

DO:	1.40	Sulfate:	0.00
CO2:	77.00	Sulfide:	0.00
Alkalinity:	5.00		
Ferrous Iron:	3.40		
H2S:	0.50		
Manganese:	0.00		

Lab Analyses/Methods:

"Hydrogen, Methane, Nitrate/Nitrite, Sulfate, TRPH, VOCs"

Technician Initials

GROUNDWATER SAMPLING LOG

TERRAINE
Environmental Consulting

Project Information

Project No: 07-71009/7	Project Name: NTC/SA36NW	
Technician 1: Karen Baer	Technician 2:	Weather: Sunny
Sampling ID: 07-71009/7:MW-43C:6/14/04		
Notes:		

Well Information

Well ID: **MW-43C**	Sampling Date: **6/14/2004**	
Well Diam (in): 2.0	Total Well Depth (ft): 35.50	Well Screen Interval (ft):
TOC Elevation (ft msl): 0.00	Northing: 0	Easting: 0
Static Depth to Water (ft): 8.42	Well Capacity (gal): 0.00	

Purge Setup

Purge Method: Peristaltic	Tubing Material: PPE		Pump Set at (ft): 32.00
pH Meter: Horiba U-22	Cond. Meter: Horiba U-22	DO Meter: Horiba U-22	Turb. Meter: Hach 2100P
Purge Start: 09:18	Purge End: 09:33	Total Volume Purged (gal): 0.60	

Purging Data

Time	Water Level (ft)	Vol Purged (gal)	Pump Rate (gal/min)	DO (mg/L)	Temp (°C)	SEC (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
09:29	9.10	0.40	-0.00	0.25	25.86	117.0	5.04	-181.0	645.00	brown	sulfuric
09:32	8.80	0.50	0.00	0.23	26.01	115.0	5.01	-182.0	674.00		
09:33	8.80	0.60	-0.00	0.20	26.02	114.0	5.01	-182.0	683.00		

Sampling Data

Sample Information		Final Purge Readings		Field Test Kit Readings (mg/L)			
Sample Date:	6/14/2004	DO (mg/L):	0.19	DO:	0.60	Sulfate:	0.00
Sample Start Time:	09:35	Temp (*C):	26.02	CO2:	0.00	Sulfide:	1.25
Sample End Time:	10:15	SEC (uS/cm):	113.00	Alkalinity:	0.00		
Field Filtered:	☐	pH:	5.01	Ferrous Iron:	3.00		
Duplicate:	☐	ORP (mV):	-182.00	H2S:	2.00		
		Turb (NTU):	702.00	Manganese:	0.00		

Lab Analyses/Methods:	Technician Initials
"Hydrogen, Nitrate/Nitrite, Sulfate, TRPH, VOCs"	

GROUNDWATER SAMPLING LOG

TERRAINE
Environmental Consulting

Project Information

Project No: 07-71009/7	Project Name: NTC/SA36NW	
Technician 1:	Technician 2: Larry Wolski	Weather: "Humid, Muggy, Sunny"
Sampling ID: 07-71009/7:MW-44C:6/14/04		
Notes:		

Well Information

Well ID: **MW-44C**	Sampling Date: **6/14/2004**	
Well Diam (in): 2.0	Total Well Depth (ft): 35.50	Well Screen Interval (ft):
TOC Elevation (ft msl): 0.00	Northing: 0	Easting: 0
Static Depth to Water (ft): 10.01	Well Capacity (gal): 0.00	

Purge Setup

Purge Method: Peristaltic	Tubing Material: PPE		Pump Set at (ft): 33.00
pH Meter: YSI 556 MPS	Cond. Meter: YSI 556MPS	DO Meter: YSI 556 MPS	Turb. Meter: Hach 2100P
Purge Start: 08:14	Purge End: 08:28	Total Volume Purged (gal): 0.60	

Purging Data

Time	Water Level (ft)	Vol Purged (gal)	Pump Rate (gal/min)	DO (mg/L)	Temp (°C)	SEC (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
08:24	10.22	0.40	-0.00	0.42	26.42	0.0	5.10	-105.4	651.00	brown	sulfuric
08:26	10.23	0.50	-0.00	0.35	26.42	0.0	5.10	-110.7	652.00		
08:28	10.21	0.60	-0.00	0.31	26.41	0.0	5.06	-113.2	658.00		

Sampling Data

Sample Information		Final Purge Readings		Field Test Kit Readings (mg/L)			
Sample Date:	6/14/2004	DO (mg/L):	0.28	DO:	0.00	Sulfate:	0.00
Sample Start Time:	08:30	Temp (*C):	26.38	CO2:	109.00	Sulfide:	0.12
Sample End Time:	09:10	SEC (uS/cm):	0.05	Alkalinity:	20.00		
Field Filtered:	☐	pH:	5.05	Ferrous Iron:	2.50		
Duplicate:	☐	ORP (mV):	-113.70	H2S:	5.00		
		Turb (NTU):	654.00	Manganese:	0.00		

Lab Analyses/Methods:	Technician Initials
"VOCs, TRPH, Sulfate, Methane, Nitrate/Nitrite"	